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Original Articles.

THREE CASES OF GENERAL PARALYSIS PRECEDED BY OPTIC ATROPHY.[1]

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That primary atrophy of the optic nerves is a symptom of grave significance not only as regards vision but as regards the future health of the patient is a well-recognized fact. Not especially rare in tabes, occurring in 27 out of 400 cases (6.75 per cent.) collected by Leimbach,[2] it is said to be nearly as common in general paralysis of the insane, having been found in 65 out of 1,326 cases (4.9 per cent.) studied at the Charité in Berlin by Hans Gudden.[3] The statistics of other observers vary somewhat from these figures, but although Morselli[4] thinks that optic atrophy is very common in general paralysis, no one now repeats the remarkable observations of Clifford Allbutt, who found 44 cases of atrophy in 53 cases of general paralysis, or of Tebaldi, who found the fundus healthy in only one case out of 20. In my own experience optic atrophy to a degree marked enough to cause blindness is rare in general paralysis.

Mendel[5] and Mickle,[6] in their monographs on general paralysis, have both cited various reported cases in which the optic atrophy preceded the other symptoms of general paralysis by a considerable period, and Kraepelin,[7] Ziehen,[8] and Ballet and Blocq[9] all admit that it may be the first noticeable symptom. Oppenheim,[10] however, speaks of atrophy as a not infrequent precursor of the disease. This, however, seems rather an exaggerated statement, since Meynert,[11] in his experience, could cite only three cases, all of which began as tabes, and Gudden found the atrophy as a distinct precursor of the disease in only one of his 65 cases of atrophy.

In view of the comparative rarity of optic atrophy as a precursor of general paralysis, it seems well to report certain cases in which the first striking symptom was a disturbance of vision due to gray atrophy of the optic nerves. In many cases of general paralysis there may be lesser changes in the retina in the form of a chronic retinitis and slight changes in the nerves themselves in the form of incipient atrophy, such as have been described by Oliver,[12] and studied anatomically by Colluci,[13] and these lesser changes have been thought by Hepburn[14] to be of much importance as an early symptom, preceding the disease by one to three years. Such minor changes, however, need not be considered here. In these cases there was nearly complete blindness, with very marked changes in the optic nerves, so great as to be readily discoverable by the tyro in ophthalmoscopy.

A distinction, however, must be drawn between the cases of general paralysis preceded by tabes and the cases of uncomplicated general paralysis. Optic atrophy when it occurs in tabes is usually a symptom not only of the first stage of the disease but of the early years of the disease. In six out of Leimbach's 27 cases of atrophy in tabes it was the initial symptom, and I have myself seen it precede the loss of knee-jerk. It is therefore evident that in those cases where tabes precedes paralysis, if optic atrophy be an early symptom, the atrophy must be ascribed to tabes rather than to paralysis, as in Meynert's three cases just cited. The following case must therefore be regarded as belonging to this class:

Case I. C. W., thirty-seven, married, a hat-finisher, consulted me in February, 1892. In 1880 he had a sore on the penis, which was followed by a copper-colored eruption and a patch on the lip. The family history was negative, except that his mother had no knee-jerk. He himself had been in good health until the beginning of the present trouble. In 1888 while pulling a hat on the block, a task requiring much effort, he felt a painful strain in the back and suddenly collapsed. He recovered speedily but after that time he had a severe pain in the back whenever he took a bath. A year and a half later he was writing a letter, when, in trying to read it over, he had a sudden loss of vision and could not read it. He consulted a physician, who found the left pupil dilated and the knee-jerk absent. The vision soon returned, but the pupil remained dilated; he had some diplopia, and he could see distinctly only straight ahead, not to the side — central vision only. In four or five months the vision failed again, this time completely, so that he can now only distinguish light from darkness.

Five days before he consulted me the legs, which had before felt perfectly well, suddenly gave out. The left hip or knee gave out and he fell on his hand, the leg felt lame and the toe dropped. Since then he has had some headache, but no dizziness, and some pain in the hips and calves. He has slept well and the memory has been good. He has been costive and he cannot pass his urine quite as well.

The gait was somewhat waddling, but he could stand well with the eyes shut. The sensibility was normal. The knee-jerks were absent. The left pupil was larger than the right, but both reacted to light and convergence. There was gray atrophy of both optic nerves. He could not dorsally extend the toes, and abduction of the leg was weak, especially on the left side. The anterior tibial group of muscles showed some quantitative changes to electricity on the left side, but no qualitative changes. They did not react quite so quickly and required a somewhat stronger faradic and galvanic current. In other respects the examination was negative.

He was given antisyphilitic treatment, and in two months he reported that the legs were nearly well. In May the strength of the legs was good, and he could stand perfectly well with the eyes closed, but he complained of some tingling sensations in the back and feet; he was still costive and he had some trouble in passing urine.

In July he had a sudden stoppage of the urine and lost the use of his legs. He resumed the iodide of potassium and biniodide of mercury and improved again.

In September, 1892, he consulted me again. He had taken iodide of potassium in doses varying from one-half to two drachms until his mouth became sore and gave him a bad taste. He could use his legs tolerably well, but they felt stiff, and twitched and felt numb, especially in the right groin and in the inside of the thigh. The abdomen felt distended and there was a feeling of contraction from the penis to the navel when he stood erect. He had no headache, the appetite was good, but the bowels were costive except when he took laxatives, and he had to strain on micturition. At times he could not control the sphincter ani — after taking an efficient dose of a cathartic. The strength of the legs, except for abduction, was very good, but there was a distinctly ataxic gait and he could not stand with his eyes shut. He could, however, co-ordinate fairly well on making definite movements of the legs under direction. The sensibility to touch was less distinct on the right side, although he could feel the slightest touch. The sensibility to pain and temperature was fairly good. The abdomen was hyperesthetic. The abdominal and epigastric reflexes were normal, the cremasteric absent. The grasp was good, 45 kilogrammes. The eyes and knee-jerks were as before. Antisyphilitic treatment was continued, and atropine also was given.

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[1] Read before the New England Psychological Society at Concord, N. H., September 27, 1898.
[2] Deutsche Zeitschrift für Nervenheilkunde, vii, 493.
[3] Archiv. für Psychiatrie, xxvi, 430.
[4] Morselli: Manuale di Semejotica delle Malattie Mentali, i, 436.
[5] Mendel: Die Progressive Paralyse der Irren, p. 141.
[6] Mickle: General Paralysis of the Insane, p. 112.
[7] Kraepelin: Psychiatrie, 5th Aufl., p. 483.
[8] Ziehen: Psychiatrie, p. 425.
[9] Traité de Médecine, vi, 1041.
[10] Oppenheim: Lehrbuch der Nervenkrankheiten, p. 125.
[11] Meynert: Klinische Vorlesungen über Psychiatrie, p. 232.
[12] University Medical Magazine, March, 1884.
[13] Annale di Nevrologia, xii, 317.
[14] American Journal of Insanity, li, 302.

In October he still complained of stiffness of the right leg, especially on straightening it. The gait was quite ataxic. The leg still felt numb on walking, and the twitching persisted, but it was somewhat stronger. The appetite was good, but he had a full feeling in the stomach, and the bowels were constipated. There was some headache and a burning, tingling feeling in the back. The bottoms of the feet felt strangely, as if he were walking on a pad. The right hand felt stiff, and he could not feel quite so distinctly with it or make as fine movements with his fingers. It was hard work to string a banjo or play on it with that hand.

In December he reported that he still had a drawing feeling in the right groin, that the right leg felt very tight after he had sat still for a time, and that the ankles ached. He could not feel a light tap on the leg, but a hard hit was very painful. The right foot felt as if it were not completely down in the shoe. The fulness of the stomach and the constipation persisted.

He lived at a distance, and I heard from him only at long intervals during the following year. In December, 1893, he consulted me again. The legs felt numb and tight and ached much of the time; they felt as if done up in a rubber bandage. He had pain through the hips and a "trembling headache." The belly felt corded and full, and ached. He had to strain to make water and the stream would often stop. The stomach felt hot and distressed, but he had no vomiting or eructations. The sides and chest felt sore on motion. The left side of the face felt bloated, as if soap had dried on it and as if flies were walking over it. He had cold chills in the spine, warm flushes, and a girdle sensation just above the pubes. The head ached and felt thick and heavy. The bladder and rectum felt normal. He walked with less ataxia, and he could go up stairs naturally on the balls of the feet, but not rapidly. There was a slight loss of tactile sensibility in the right hand and the left side of the face.

In March, 1894, the sensory symptoms were somewhat increased. He complained of a tight, drawn feeling back of the penis, and of pain in the coccyx. His general condition remained about the same. The appetite was fair, he slept well. The mental condition was good, and he was fairly cheerful. He kept a small shop, and attended to his business regularly. Once or twice he imagined that his sight was improving, and he thought he distinguished the trees along the street.

In July he reported an improvement with regard to the stomach, bowels and bladder, but he felt weaker, slept poorly and was restless at night. The sensory symptoms were rather worse. He had difficulty in putting his hand into his pocket on account of the loss of sensibility, and when he got it in he could not tell what he had taken hold of there, whether his knife, his keys, or his money. The sensory disturbances in the face troubled him more. He seemed weaker, the gait was more ataxic, and he required more help in getting about. During much of the time he continued the antisyphilitic treatment, omitting it at times and taking arsenic and occasionally other drugs to relieve special symptoms.

In August there was practically no difficulty in micturition; the bowels acted fairly well, and the head felt better; but he slept poorly, the gait was weaker and more ataxic, the legs often gave out, and he had considerable pain and other sensory disturbances. Although, on examination, there was no marked hyperesthesia, he could not always tell whether he had anything in his hand.

On the 24th of November, 1894, he still complained of peculiar sensations in the left side of the face. The right hip felt weak, the leg was everted and the knee often gave out on walking. The bowels moved naturally, but he had no desire to pass water. The hands felt stiff. There was considerable ataxia, especially of the right leg. The back ached and was very sensitive to cold. He slept poorly, and he had begun to notice a failure of memory. His strength had failed materially, so that during the year it had been a constantly increasing effort for him to make the journey to see me. With the failure of strength, too, had come increasing inability to attend to his business, with consequent depression and discouragement. He wrote to me once or twice that he was not as well, but, although somewhat discouraged, he tried to be cheerful. Finally, after a long interval, I heard that he had been sent some time before to the Danvers Lunatic Hospital. For further notes as to his condition, and for the report of the autopsy and the specimens, I am indebted to the kindness of Dr. W. L. Worcester.

He was admitted to the Danvers Lunatic Hospital January 31, 1895. The physician's certificate says: "He has had paralysis for several years. He now has delusions, imagining that he is possessed of a fortune."

Condition on admission. — Feeble and poorly nourished; he says he has lost much flesh during his sickness. He has been blind for five years; the pupils are dilated, the left being larger than the right; no opacity of cornea or lens; he can distinguish a bright light. There is moderate tremor of tongue and facial muscles. The knee-jerks are absent. The gait is extremely ataxic; he needs assistance in walking, and he cannot stand with the feet together. The sensibility in the legs (of touch and pain) is notably diminished. The movements of the arms are slightly ataxic. He says he has no sensation when he passes urine, and usually retains it until his bladder is full and it begins to dribble away. The bowels are usually constipated.

The ataxic symptoms were first noticed six years ago. He has never had any severe pains. He says he never had syphilis.

He talks freely and cheerfully. He thinks his legs are stronger than they were a year ago, and he expects to get well. He has $50,000, which was given to him lately. He has a very valuable patent for concealing liquor in the wall of a room, but he has no use for it since he got his $50,000.

February 8th. His property has grown to $11,000,000.

April 30th. More demented. He tears his clothes and is quite untidy. He has pulled out most of his moustache.

October 31st. The legs get more and more helpless. He says he has been here five years and that he could see and walk perfectly well when he came here.

December 31st. He has lost flesh and strength, and is now confined to the bed.

October 14, 1896. He has been confined to the bed since last note. A few months ago he had bed-sores and a series of convulsions, and was thought to be dying, but he rallied, the bed-sores healed in a water-bed, he developed an excellent appetite, and gained some flesh. He is now failing again; bed-sores are again appearing; he has had two or three convulsions in the last few days. Extremely demented.

October 27th. He has had epileptiform attacks daily since the last note, but he has taken nourishment regularly. He is helpless and nearly unconscious most of the time. Died at 6 A. M.

Autopsy, five hours after death. Contractures of lower extremities. Hematoma of dura over the posterior part of both hemispheres, most conspicuous in the occipital fossæ. Arachnoid cloudy, somewhat edematous. The membranes were separated with some difficulty, but the attempt tore the brain only in one place, in the frontal region. There was an appearance of slight atrophy of frontal cortex, which was rather thin, and yellower than normal. The remainder of the cortex was of natural appearance. The lateral ventricles were moderately dilated; the ependyma of the fourth ventricle was slightly dilated and granular. The optic nerves were grayish in color, and of about half the normal size.

The weight of brain, after dissection, was 1,273 grammes.

The posterior columns of the spinal cord presented a grayish, translucent appearance in their whole length. There was no appearance of meningo-myelitis, and the white substance was normal, except in the superior columns.

There were also hypostatic pneumonia of both lungs, and dilatation of the ureters and pelves of the kidneys.

Microscopical examination of the cerebrum showed the usual changes of general paralysis — proliferation of neuroglia, abnormal vascularity, and tortuous condition of blood-vessels — strongly marked. Especially in the frontal lobe, carmine-stained sections gave the impression of consisting almost entirely of huge spider cells and contorted capillaries. The Nissl stain, however, showed that the destruction of the nerve cells was far from being so complete as might be supposed, and in the excitable region of the cortex the large nerve cells showed, for the most part, the normal marking.

In the spinal cord there was a very advanced degeneration of the entire posterior columns in their whole length. In sections stained by Pal's method a shaded area could be seen in the lumbar region adjacent to the gray commissure, and in the upper cervical region there was a well-defined border of nerve fibres along the posterior horns, spreading, at the periphery, into a triangular area. Elsewhere in the posterior columns, the medullated fibres were inconspicuous to the naked eye. The fibres of Clarke's and Lissauer's columns were also atrophied to a great extent. In sections stained by Nissl's method some of the cells of Clarke's columns and of the anterior horns presented a swollen, homogeneous appearance, with dislocation of their nuclei to the periphery.

The posterior nerve roots contained but few medullated fibres.

In the medulla oblongata, the funiculus gracilis and funiculus cuneatus were atrophied, and their respective nuclei smaller than normal. The atrophy did not extend farther.

This case is of considerable interest as an exception to the usual rule that when optic atrophy appears as an early symptom in tabes the ataxia and pains are of very late development and often give rise to little trouble. The rapid development of typical delusions within a little over two months from the time when I last saw him is also of interest.

The attack of paraplegia, which recovered rapidly and completely under the use of antisyphilitic remedies, was naturally suggestive of some distinctly syphilitic process in the cord, — a meningo-myelitis such as Nageotte[15] has described in certain cases of tabes and general paralysis, — and I was led to make such a diagnosis, of course, as a complication of the tabes, but, as the autopsy showed, my belief was unfounded.

In other cases, however, optic atrophy may appear as an initial symptom of general paralysis, without any indications of a co-existing or preceding tabes. Without attempting to discuss the vexed question of the relation between tabes and general paralysis, it may be admitted that the association of the clinical symptoms of the two affections is rare, and that only in 28 out of 145 cases of general paralysis did Fürstner[16] find the posterior columns alone involved, although a combined sclerosis of the posterior and lateral columns was noted in 23. In 27 out of the 65 cases of optic atrophy in general paralysis already referred to Gudden found the knee-jerk lost. In the majority of cases, therefore, the atrophy seems to be due to the paralysis, as in the following case:

Case II. William B., thirty-six, married, a barber, was referred to me in March, 1886, at the City Hospital, by Dr. Myles Standish.

His father died of debility following a poisoned wound; his mother died of dropsy; a grandmother and a sister had cancer. He himself was the seventeenth of eighteen children. His younger brother had a disposition like his, "nasty, jealous, fretful, sensitive, and prying into other people's business." His wife has had three children, one of whom is alive and well; the rest died of childhood's disorders. Since the birth of the last child, three years ago, she has had two miscarriages.

The patient himself had always been in good health, except for two attacks of gonorrhea, and a venereal sore contracted fifteen years before. This "broke out" once or twice afterwards in the same place, but he had no other symptoms. His wife says he has much "humour," but definite information could not be elicited. He has used alcohol moderately and tobacco to excess.

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[15] Archives de Neurologie, October, 1895.

[16] Archiv. für Psychiatrie, xxiv, 83.

No change in his health or disposition was noted until May, 1882, when, after working as usual in his barber shop during the forenoon, he went to the seashore in the afternoon. While there he had a feeling like the pricking of needles in the right side of the face, a cloud came over his eyes, and he had a violent headache that night and every night for a month. He had so much vertigo that he did not dare to venture out alone. He saw black spots and bright flashes before the eyes. He consulted some physician who thought the visual trouble due to tobacco amaurosis, but soon after he saw Dr. Standish, who found a peripheral limitation of the visual field for form, and a still more marked limitation for color. No changes in the eye-grounds were detected at that time. He worked at his trade during the summer of 1882, but he needed artificial light in order to see. Since the autumn of 1882 he has given up his barber's trade and has peddled a shampoo cream, travelling all over the city to different barber shops, working hard, doing business properly, and going over a long route daily, although the distance was such as to fatigue his wife when she tried it. He has not been easily fatigued, and he has shown considerable ambition to get on in the world and provide for his family.

His general health continued good, but the vision grew slowly worse. Since his loss of sight he has been more irritable and depressed, he thinks, and his wife states that he has been much more irritable and has shown some failure of memory, with the natural depression because he cannot do for his family as he used. The headache and vertigo have ceased. He talks sensibly of his condition, admits that he was naturally of a "nasty disposition," which he inherited, but he does not know from whom. On discussing his disposition he gets somewhat excited. For several months he has slept poorly. He speaks of his wife affectionately as much too good for him, but on coming to the hospital he told her that she was going to get the doctors to give him something to get rid of him or to shut him up. No delusions could be elicited or were known to his wife. For three weeks he has complained of a spot in his throat, and his speech has become less distinct and he has occasionally omitted a syllable. He has lost about twenty pounds in weight. When asked about it, he says he has some pain about the heart, but he has no other thoracic or abdominal symptoms. The appetite and digestion are good. Micturition is normal. He says his sexual power is unimpaired, but he does not indulge so frequently on account of his eyes. His statements, however, are vague and contradictory.

The man was well developed and well nourished. The right pupil was larger than the left and reacted more sluggishly to light. He could count fingers at nine inches. There was gray atrophy of both optic nerves. There was some tremor of the hands and slight fibrillary tremor of the tongue. The speech was a little indistinct, but not especially noticeable. The knee-jerks were normal. The handwriting — his first attempt for months — was suggestive, but, considing his blindness, not wholly characteristic. Otherwise the examination was negative. He continued in attendance at the hospital for about three weeks, reporting that he felt better and was sleeping better.

On the 16th of April, 1886, while crossing the street he was struck by a wagon, the wheel passing over his foot. No bones were broken but the foot was swollen and tender, and an abrasion was observed over the instep. Soon after he became very much depressed, refused food, and would not speak. I saw him on the 19th, and his wife reported that he had an idea that if he had made an outcry at the time of the accident the affair would have caused some excitement, an account of it would have been published by the newspapers, and thus his friends would have heard of it and would have come forward to help him. He said to me, "I have made a great mistake. If I only had —," and then he became silent and would say no more. He sat up in bed or stood in the room with a most melancholy expression. At one period in the day he seemed like himself for two or three hours and then relapsed into the depressed state.

This condition continued practically unchanged until the 25th, when he was found standing up in bed in his night-shirt when I visited him. The depression continued. He ate and slept poorly, sat motionless in bed or stood about the room undressed, like a patient with melancholia attonita. He picked his face and said nothing except the one phrase, "If I had only done it." The condition was such that he was committed to the Taunton Lunatic Hospital on the 28th of April.

On the day of his commitment he got out of bed and immediately had a convulsive attack in which he frothed at the mouth and all his limbs worked. He took considerable milk later. When I entered the room he was lying on the bed dressed and in a very jovial mood. His speech was somewhat thicker, but he greeted me with, "How are you, Doctor? Old W. B., he's dead — died last night. I feel bully to-day. There's a man coming to see me about some business. I've got a new business. I'm going down town to all the shops and ask for old coats, and I'll give them new ones for them. They'll be so delighted they'll buy the stuff I have to clean old coats and make them new. I shall make lots of money, thirty to forty dollars a week or more, fifty to seventy-five dollars a day. I'm lovely; how are you?" This condition continued until he went to the hospital.

For further notes as to his condition I am indebted to the kindness of Dr. J. P. Brown, of the Taunton Hospital. On admission the pulse was 94, small and weak, the temperature 98°, the respiration 18. Nutrition was fair, there was no edema, locomotion was much impaired. The articulation was thick and tripping; the tongue tremulous and not under good control. There was twitching of the muscles of the trunk and limbs under little or no excitement so that a physical examination was not made. The knee-jerks were very lively.

His talk was very incoherent, he was much demented and unable to give any intelligible account of himself. He would say that he was not sick and that he could work as well as ever if he could only see. He manifested various fleeting and incoherent delusions of an extravagant type — that he had "cleaned out" Jordan and Marsh, Jay Gould, etc.; that there had been a great explosion, etc. He proved too feeble to remain in the ward, tumbled about in his room, tossed about his bed and partly denuded himself, and was filthy in his habits. A day or two after admission he fell to the floor without apparent cause; there was no loss of consciousness or convulsive movement.

He ate heartily, became very fleshy and still more demented. He continued in much the same condition until his death, February 20, 1891, nearly nine years after the first manifestation of his disease. Twenty-four hours before he died he was seized with spasmodic contractions of the muscles of the right side of the face and neck and of the right arm, which gradually extended to the right leg.

At the autopsy the head only was examined. The scalp was very thick, a quarter to half an inch. The calvaria was normal. After removal of the calvaria the most striking feature was an intense congestion of all the superficial cerebral vessels. The meninges were adherent to the cortex over quite an area in the vicinity of the leg and face centres. After removing the dura a substance having a gelatinous appearance was seen covering the entire surface of each hemisphere, more marked on the right side; after exposure to the air for a very short time this substance seemed to have been absorbed. The meninges were adherent to the cortex in the parietal region near the longitudinal sinus on either side over an area one-half as large as the palm of the hand. There was evidently a general atrophy of the cortex.

Although there seems to have been no microscopical examination the macroscopical appearances apparently confirm the diagnosis made when the patient first came under observation, before the mental symptoms were pronounced. In the absence of any examination of the cord it cannot be said positively that the posterior columns were unaffected, but the clinical history and the exaggerated knee-jerks oppose the idea of tabes. The contraction of the visual field before the appearance of visible changes in the discs is also of interest, since Bikeles and Kornfeld[17] have recently reported two cases where such a contraction existed, and have tried to show that such a contraction without visible changes in the nerve was of some significance as a symptom of paralysis. As both their cases were still alive, it is a question whether this contraction may not be a precursor of atrophy.

Case III. J. W., a merchant, forty-five years of age, married, was referred to me in January, 1895, by Dr. J. F. Bush. A sister had been insane for a year or two at the period of the menopause, but she had made a good recovery. Otherwise the family history was negative. He himself had always been in excellent health, and never had known what sickness or a headache was. For two years he has had some "rheumatic" pain in the shoulders. The left shoulder was at one time swollen and very tender. He had confined himself closely to business, working too many hours a day, as he thought, but he had not worried very much. He used alcohol in moderation, but drank no distilled liquors; he smoked a good deal, and indulged in coitus to excess, six or eight times a week. Some years ago he had had a small sore on the penis, but it was said to be nothing of any consequence. He was naturally of a genial, easy-going temperament.

About a year before he consulted me the eyes began rapidly to fail. He had used glasses for reading, but he noticed a blurring when he tried to read which was worse in the left eye. The vision failed rapidly; by February, 1894, he was unable to read; six months later he could no longer recognize people, and at present he can distinguish dimly only large objects. In September he consulted Dr. O. F. Wadsworth, who reported as follows: "Pupils react to light and accommodation. The right pupil was irregular in shape, pointing downwards and inwards, but it became circular under cocaine. With the right eye he could count fingers at from four to eight feet, but he could not count them at all with the left eye. The upper part of the field was apparently cut off above and contracted. The discs were bluish gray; in the right eye was a narrow partial zone and some little pigment change below the centre of the macula. There was some cortical opacity of the right lens, downwards and inwards." He had no history of iritis, no pain in the eyes, and no subjective flashes of light, but if he is near a light he is cognizant of a disagreeable glare.

About the time that the eyes began to fail he noticed that the legs began to grow weak, and that he staggered to the right on walking. He had a prickly sensation and some swelling in the legs, and they felt shaky; he also had some sharp, stinging pain, and a quick jerking in the legs which was not painful, but these symptoms gave him little trouble. The left knee would at times give way so as almost to throw him down, and he could go down stairs only very slowly and with much difficulty; going up stairs was easier. The legs, however, have improved very much in the last few months.

He claimed that his mental condition was unaffected; he said he could manage his business as well as ever, that his business capacity, memory and judgment were unimpaired. He had been somewhat irritable a year ago, but now he was cheerful and genial. He seemed, however, to lack a true appreciation of his condition, and to show more of an easy going optimism and less of an appreciation of pain and discomfort than would naturally be expected. Little could be learned from his family on the matter, but the roseate hue with which life seemed surrounded was suggestive of a beginning mental disturbance.

At one time he stated that his tongue became thick and that he had some hesitancy in speech. At present he occasionally stumbles over syllables, but he articulates fairly well, stammering slightly, hesitating now and then for a word, and occasionally repeating a word or a phrase, usually where the repetition emphasizes his reply to a question, but yet more frequently than is customary.

About seven months before he came to see me he had had headaches quite frequently during the night, which seldom lasted into the day, although he might wake with them. For six months he has been free from headache. He has never had convulsions. He has slept well. He has had slight tinnitus, but no vertigo or deafness. There has been no cough, dyspnea or palpitation. This winter he has been more sensitive to cold weather. The appetite has been good, he has eaten everything he desired; at one time there was some intestinal fermentation and slight constipation, but the digestion is now good. His weight is unaltered. At one time there was some excess of uric acid in the urine, but it has now disappeared. Micturition is unaffected. The sexual power has diminished very much in the last six months. There is no unusual fatigue from muscular effort, but he does not feel quite as strong and his muscular strength is not very great. He claims that in the last six months he has improved very much except as regards sight, and he states that he feels perfectly well, and, with guidance, can walk as well as ever.

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[17] Jahrbücher für Psychiatrie, xii, 94.

The man was rather stout, well-developed, and of good color. The pulse was 92, not very strong. There was a marked fibrillary tremor of the lips, tongue and lower part of the face, and some regular tremor of the hands. The ocular movements were normal.

The pupils were about three millimetres in diameter and irregular in outline. They reacted very faintly to light, and not at all to accommodation, although it was uncertain how much he tried to accommodate. There was some opacity in the lower inner quadrant of the right lens, and the irregularity of the pupil suggested adhesion of the iris, but no adhesion could be made out on more careful examination. On account of this opacity and the difficulty of fixation it was hard to make a satisfactory examination of the right fundus, but examination of the left eye showed a typical gray atrophy with very small vessels and sharp outline to the disc.

The vision was much impaired. He could see the window and tell when objects were moved between him and the light. At a distance of two feet he could with the right eye see my face and whether I had a moustache, and tell the color of my coat, but with the left eye he could see only my face. With neither eye could he tell the color of my necktie or whether I had on eye-glasses. He could occasionally count fingers at a distance of two or three feet with the right eye, but he was often incorrect. With the left eye he could not count at all.

He thought the smell was equal in the two nostrils, but he could recognize and name camphor only when smelling with the right nostril.

The watch was heard at four feet with either ear, and bone conduction was equal.

Sensibility to pain, touch and temperature was good.

He could stand perfectly well with the eyes closed. There was no ataxia.

The cremasteric and abdominal reflexes were normal; the knee-jerk was absent even with re-enforcement.

There was no nerve tenderness, but pronounced ulnar analgesia (Biernacki's symptom).

The handwriting was much affected.

The urine was normal.

Examination of the thorax and abdomen was negative.

He was given voltaic alternatives through the eyes, strychnine, and daily injections of cyanide of mercury in increasing doses of four to fifteen minims of a two-per-cent solution. The injections at times caused considerable local inflammation of the skin, to which, however, although he spoke of it as painful, he seemed to pay little attention. At the end of two months the general condition remained the same, but the visual power seemed, if anything, a trifle worse. Some days he could count fingers with the right eye at the distance of a foot, and other days he could not. He then tried strychnine injections for a time with as little success.

He became discouraged and discontinued treatment. Three years later he consulted me again, but I had no opportunity for a complete examination. The vision had failed still more; he could distinguish between light and darkness and thought he could tell when objects were moved between his eyes and the light, but he was not quite sure where the window was. There was marked nystagmus and the pupils were rather large and immobile. The hearing had failed so that I had to speak quite loudly in order for him to hear me. The knee-jerks were still absent. The fibillary tremor of the lips and tongue was still marked and there was pronounced tremor of the hands of a rhythmical character and not increased materially on intentional movements. It was with much difficulty that he could be made to sit in or rise from his chair, and his gait was so tottering and shaky that he could hardly get from one room to another with help. His speech was much affected. The cheerful optimism continued, and he protested that he felt perfectly well, except for his eyes, and that his mental powers were as good as ever and that he was perfectly capable of attending to business, although he only rarely went to his office. His friends stated, however, that he was often somewhat irritable and childish, although his memory was fairly good, and his judgment in business, on the rare occasions on which business matters were referred to him, was fairly sound.

This last case is still living, so that the diagnosis must be to a certain degree problematical The mental symptoms are still slight, but there is a certain degree of optimism, which, taken with the disturbances of speech and handwriting and the tremor, favor the diagnosis of general paralysis. Although the knee-jerk is absent, the gait, which is tottering rather than ataxic, the absence of ataxia, the very few symptoms of sensory disturbance, and the ability to stand with the eyes shut oppose the diagnosis of tabes.

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WITH THE HOSPITAL SHIP "BAY STATE" IN PUERTO RICO.[1]

BY E. A. CROCKETT, M.D., BOSTON.

WHEN at the request of the Secretary I agreed to say something about the experiences of the *Bay State* surgeons, I selected Puerto Rico in preference to Cuba partly because it was a decidedly pleasanter memory and partly because my personal knowledge of the state of affairs in General Miles' Corps was much greater than of the Fifth Corps.

The impression which Santiago made on me, and I think on most of those on the boat, was one of horror; certainly in my own case it will be a long time before the disagreeable impression of the first day wears away. On the other hand, Puerto Rico left no unpleasant reminiscence to haunt one, but rather came up to one's ideal of what a campaign in the tropics might be.

Of course our personal experience was so limited in any one place that this paper must be merely a rambling dissertation on military hospitals in various parts of the island and one's impression at the same time of the country and the climate.

The first camp which we saw was that of the First U. S. Volunteer Engineers, in Guanica. This was a battalion camp of about three hundred men, and the medical officer in charge, Dr. Williams, of Jacksonville, Fla., had the advantage of being a veteran of the Confederate Army in the late war. The camp was well placed on the slope of a hill close to the edge of the harbor and carefully trenched to avoid flooding during the tropical rains. The sinks were freshly dug each day; kept well covered with earth and placed about three hundred yards away from the camp over a slight ridge which provided drainage away from the tents. The hospital was about one-half mile or so from the camp in the village itself. The surgeon had taken advantage of the offer of the summer residence of one of the native Puerto Rican planters to secure a place eminently fitted for a hospital. The rooms were very clean, of a fairly high stud, and, as all the Puerto Rican houses merely have an open hole in the wall instead of windows, the air was very good. Nearly all the patients in this hospital, as in all the hospitals on the island, had typhoid. The first impression here was the absolute cleanliness of the camp, next the fact that the men had an active, alert appearance which was in marked contrast to Santiago, where almost every man appeared a future candidate of the hospital. Dr. Williams informed me that he had seen no malaria originating in the island; a few cases had been imported from the United States.

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[1] Read before the Suffolk District Medical Society, October 29, 1898.

From Guanica the *Bay State* went to Port Ponce, about twenty or thirty miles away. This is the largest city on the island, about thirty thousand people. Both Port Ponce and Ponce were noticeably cleaner than any place I had seen in Cuba, and the people appeared much more healthy. The city, at the time we arrived, was quarantined against the Port on account of a supposed case of yellow fever, but the quarantine was shortly removed. There were also several cases of small-pox among the natives, but no quarantine was imposed and the disease did not spread. The hospital in Ponce was a very large one of about three hundred and fifty beds, and was placed in the former Spanish hospital on top of a hill on the edge of the city. Judging from this building the Spanish had some excellent ideas on hospital construction, for this was certainly well adapted to the climate, but it was in a very filthy condition when taken possession of by our troops. It was a single-storied building of about a thirty foot stud with a large interior court-yard, so that each ward had light on both sides and a direct passage of air from one side of the ward to the other through the very large door and window space, which, following the Spanish idea, there was no means of closing. In the centre of the building was a large soapstone bath. The great fault in construction was that there was only one water-closet of two seats in the whole hospital. The kitchen was large and very neat and clean, but like all Spanish kitchens was unprovided with an oven, so that the meat had to be stewed, fried or broiled. Every soldier in this hospital had a cot bed, and the linen closet showed an abundance of clean linen. There was an entire absence of any hospital odor and the wards were scrupulously clean. Here, as in Guanica, the vast majority of the cases were typhoid and the absence of malaria was very striking. The typhoids were not typical, but had a much more acute onset and a shorter course than usual, frequently coming on with a chill and severe headache and backache.

The death-rate in all the hospitals had been low, and the vast majority of the cases in Ponce and also at Utuado could not be called dangerously sick. This hospital was well supplied with medical stores and was fortunate in having trained female nurses and a pathologist.

As the island of Puerto Rico is extremely fertile, and had been very little ravaged by the war, there had been no trouble in securing for the sick abundance of fruit, oranges and bananas, and also fresh meat, bread, sweet potatoes, milk, and a certain amount of eggs and chicken.

Ponce itself is, for a Spanish-American city, clean and free from odor. It had the same surface drainage as had most of the cities we visited, but the system seemed more of a success here.

As the Sixth Massachusetts Regiment was at Utuado, about forty miles in the interior, a pack train of nineteen mules was secured, and Dr. Manahan and myself with two male nurses started for the interior after about two days' stay in Ponce. Ten miles outside the Port the road became a mountain trail and began to climb, passing through some of the most beautiful scenery I have ever seen. Two facts were especially noticeable to the medical eye,— one, that the city of Ponce and its adjacent district could be very easily drained into the ocean outside of the harbor by following the natural tread of the valleys, second, that an abundance of fine fresh water from the mountain streams could be easily obtainable almost anywhere on the island.

To Adjuntas, which was the town destined to be our first stopping-place, the road lay over one of the principal mountain ranges of the island. The coffee, banana and orange trees grew everywhere in profusion to the tops of the mountains and the native huts were never far away. In fact, whenever one stopped to take a drink from a mountain stream, it was well to look above and see that a native hut with its primitive sanitary arrangements did not pollute its course.

From Adjuntas we continued to Utuado where was encamped the Sixth Massachusetts Regiment, which the *Bay State* desired to relieve. We found this regiment quartered in houses in the town and both the town and the quarters had been thoroughly policed and were fairly clean. The health of the regiment had improved since this had been done. Undoubtedly much sickness could have been avoided earlier in the history of this regiment, and in other regiments in Puerto Rico, by using the houses in the towns rather than the small shelter tents furnished most of our troops.

The construction of the native house in Puerto Rico is such that it would seem to me difficult to seriously infect it under the present conditions prevailing in the island and I am decidedly of the opinion that a mistake was made in not cantoning the troops earlier.

None of the native huts I went into were especially filthy; even the small shanties deep in the mountains were cleaner than Maine lumber camps, for example, yet I have never heard the latter considered especially dangerous from a sanitary standpoint, and all the houses without exception were very sunny and well ventilated.

Adjuntas, in particular, was described to me as an exceedingly filthy and dangerous town, yet the so-called hotel in which we stopped was clean, as were many of the native houses which I entered or glanced into.

Two classes of cases composed the sick list of Utuado: typhoids of the same type as elsewhere on the island, and diarrhea of exactly the same type that is so familiar to medical officers in camp at Framingham. I did not see any cases here or elsewhere on the island which presented the symptoms of amebic dysentery.

The two hospitals in the town were overcrowded at the time of my visit but preparations were being made for the opening of a third, which would relieve the congestion. At the same time, the patients did not seem to suffer at all from this, probably because there was so much free circulation of air. There was no hospital odor, and the buildings and adjacent grounds were clean and orderly.

The treatment of the typhoids here had certainly been remarkably successful and almost all the cases were convalescent — none could be called dangerously sick. Although there had been in the neighborhood of 150 cases since the regiment had been in the interior, there had been only six deaths. The trouble had been to prevent the spread of the disease; and here the lack of trained nurses came in, as I do not think the untrained hospital attendants at all understood the importance of personal cleanliness. But the prime factor in the spread of typhoid was that the men absolutely would not drink the boiled water, but instead drank anywhere and everywhere, as well as partaking of all sorts of temperance drinks of unknown cleanliness which were peddled everywhere about the streets. I talked with many privates of the regiment and am convinced, from what they said, that while the men might drink the boiled water at mess, they also drank unboiled water in addition during the rest of the day. I found from my own experience that it was a very trying privation — the boiled water, not being aërated did not quench thirst — and still more trying that, owing to the absence of ice, it never cooled and had to be drank lukewarm. I even met with several commissioned officers who boasted of never having drank the boiled water, and the demoralizing effect of this conflict of authorities on the men under them can be imagined.

The Sixth Massachusetts was fairly well supplied with cot beds for the hospital, and had a moderate supply of bed linen and pajamas, although the extra supply brought by the *Bay State* was not amiss. I cannot, however, understand why, nearly two months after the war was over, the Government should not have furnished cot beds for the well men as well as for the sick: no one thing would have conduced so much to the general health of the regiment.

The other great lack of the troops in Utuado was the lack of trained nurses, male and female. The hospital corps men were occasionally willing but almost never competent, and this, where most of the cases were typhoid, was very trying, and threw an immense amount of extra work on the already overworked surgeons. It was an absolutely inexcusable omission, especially as Utuado hospitals could not be considered as in any sense "at the front."

There were in Ponce at this time a number of nurses, but all requests from the Sixth Massachusetts were refused on the ground that the roads were impassable. There was no place, however, on the road from Ponce via Adjuntas that was not absolutely safe for saddle mules, and a little digging would have made it so for ambulances.

Now came the question of transportation to the ship. The road back to Ponce was a two days' trip for a well man, and manifestly impossible for typhoid patients, so the arrangement was made for the ship to go around the island to Arecibo, on the north coast, then held by the Spanish troops. Dr. Manahan went ahead with one of the local Puerto Rican physicians as interpreter to arrange for the transportation through the Spanish lines, and two days later, having received word by the military telegraph that the ship had left Ponce, I prepared to start with the sick. Colonel Rice offered the use of all his transportation facilities, and investigation showed that he had seventeen springless mule wagons and five army ambulances — we were to take ninety-one patients.

There were many things to be thought of. This was, as far as I know, the first time in the war when our sick had been taken through the Spanish lines, and no one knew just how they would be received; then there were about twenty-three miles of road, mostly very bad mountain trail, and seven rivers to be forded. The latter were a very uncertain factor in the problem, as this was the rainy season and they had a habit of rising about four feet an hour during rains, and of course the train might be broken in two in this way and part obliged to camp for a day or longer. Then at the best, Arecibo was a perfectly open roadstead and exposed to the sweep of the trades, which were blowing strongly at this time of year. The sick must be transported in lighters over the surf, and this might be impossible at the last moment.

The first thought was to the means of transportation. The mule wagons were rigged in various ways for experiment, we having brought, by the pack train for this purpose, six air mattresses and a number of sailor's hammocks and cot beds. After each wagon had been rigged I got in and took an experimental ride. Those of you who have buckboarded over a very poor specimen of Maine wood road can have some idea of the Puerto Rican mountain roads, except that it is necessary to imagine your off wheel at times about six inches from the edge of a five-hundred-foot precipice. My way of testing the improvised ambulance was to have the driver drive over a paved street in the town and on and off the sidewalks via the curbstone. The regular ambulances could not stand the test, but one set of mule wagons, rigged by having a sailor's hammock strung from the driver's seat in front over the tailboard and fastened to the rear axle underneath, was found to be comfortable under this severe test. Five mule wagons were rigged in this way and in them some very sick men made the twelve hours' journey in comparative comfort. One patient in particular, with swollen joints from scepticemia, told me that the only discomfort he had was from length of the journey — fourteen hours — without halting, and that he slept a portion of the way. This device was the idea of some one on the ship, and certainly made the best emergency ambulance I have ever seen.

The arrangement of the train took some forethought; when it was on the road it would take up about two miles, and there being only one medical officer it was of course necessary to have the sickest men together, so that if the train were separated for any reason, they could be looked after in any event. The first wagon contained a detachment of the pioneer corps necessary to repair the roads. In advance of this were a few mounted scouts, as the country contained guerilla bands who were occasionally troublesome. The next five trains contained the sickest men; then came the mule wagons with convalescents, and next an empty ambulance to pick up the men who could not stand the jolting of the springless mule teams, or to be filled in case one of the wagons in the train broke down. This last would have been a serious matter, as in the mountains for more than fifteen miles there were few places where one team could pass another. In rear of the last team came more mounted men to act as rear guard and notify the advance in case a break-down occurred.

On arriving at the Spanish outposts we found the commandant most courteous and we were offered food and wine for the sick. He would not, however, allow so large a train to enter the town, and we were obliged to make one more *détour* through a cane-field and ford one more river to reach the shore opposite the ship. Here everything had been arranged and without any delay the sick were transferred to two large lighters and taken over the surf to the *Bay State*, which lay outside the breakers, about two miles from shore, and there hoisted in chairs up to the ship. The entire time of the journey from the time the wagons were loaded until the men were on board the ship had been fourteen hours. Almost all the men had a severe diarrhea apparently produced by fatigue and all had a considerable elevation of temperature, but the next morning they were in very good condition, even three typhoids in the second week of the disease.

Puerto Rico was so different in many ways from Cuba that a few generalizations may be permitted in the short time remaining. In the first place, the climate would seem to me an excellent one for chronic bronchitis and asthma, also for nasal troubles, as the climate is very equable and moist and the altitude not excessive. Many of the towns in the interior are, however, from 2,000 to 3,000 feet above sea-level. It was remarkable how clear one's nose felt, and, except for perspiration, one had absolutely no use for a handkerchief.

I did not see a thermometer while on the island, but it could not have been excessively hot, as an army flannel shirt and felt hat were comfortable in the middle of the day and necessary at night; even in the house it was wise to sleep under two blankets. The sun is bright and the sky clear in the daytime, but at night there was almost always a heavy mist and it was exceedingly damp, even in the house. At this time of year it rains parts of every day and rains very hard, but as a rule only for a few minutes. The longest rain I saw, in the two months I was away, could not have been over three hours' duration, but during this time the weather devoted itself to the business and rained enough to last us in New England through the best part of a month. No amount of ordinary protection will avail in one of these storms, and I never bothered to take a rubber with me, as one would dry off quickly as soon as the sun came out, and without any ill effects.

The country all through the island of Puerto Rico is exceedingly fertile and the vegetation dense. All the low lands are excellent grazing for cattle and the plains on the north of the island are rich in sugar land. In the mountains of the interior, coffee, banana and orange trees, are seen everywhere. The interior is precipitous, and one is always descending one range of mountains or climbing the next, with always the most beautiful vistas into rich valleys beyond.

The land-crabs are harmless, but plenty near the sea-coast. Mosquitoes are unusual anywhere. I only used a mosquito netting once on the island, and there are no poisonous snakes. Living is cheap and the hotels are clean, but the northern palate cannot stand the garlic which flavors every dish.

The fact that the island had not been ravaged by war made it much easier to provision the army and its hospitals than was the case in Santiago, where the plantations were completely ruined. But this does not explain the fact that all over the island were plenty of pack mules, plenty of army wagons, plenty of food and medical supplies — that every hospital, even forty-five miles in the interior, where supplies had to be brought over bad roads by pack mules, was fairly well supplied with all necessities, while in Cuba, six hundred miles nearer this country, where the troops were never over ten miles from a good harbor and seldom that, there were not even the common necessities of bare existence. Certainly this can only be explained by a vastly better management of the Corps as a whole, and such I firmly believe to have been the case. Of course Eastern Cuba is a much more unhealthy country than Puerto Rico, in fact, if it had not been for the typhoid imported into Puerto Rico from our home camps there would have been little serious sickness in the island. Malaria, undoubtedly, does not exist there, and typhoid was unknown before the advent of our troops. Apparently the pneumococcus does not exist, as in spite of the great exposure of our men there had not been a case of pneumonia in any of the camps I visited, nor had there been a case of acute articular rheumatism.

Beside the lack of nurses there are two important points in the army medical management which cannot be too severely criticised. The first is the lack of microscopes in both Cuba and Puerto Rico, especially in Cuba. All the diseases were acute; in both places there was a constant danger from outbreak of yellow fever, and this without a microscope could not be told from the abnormal types of typhoid, coming on with a chill or vomiting and an immediate temperature, nor from the severe malaria which afflicted one-half or two-thirds of the troops in Cuba. Then it was necessary to make a differential diagnosis between the common severe camp diarrhea and amebic dysentery. Without an examination with the microscope and the elimination of the typhoids, malarias, dysentery, from the problem I believe it impossible to have made positive diagnoses on at least three-quarters of the cases seen, and yet in spite of all this, I do not think there was a microscope in our army in Cuba, certainly not in the hospitals we saw, and neither was there one in Puerto Rico until late in September.

The other factor deserving free and unsparing condemnation was the neglect of pathology. I personally know of two trained pathologists who offered their services to the government without pay and were refused, and this in spite of the fact that their presence either in our home camps, Puerto Rico or Cuba would have lightened the labors of the medical staff immensely and of course contributed greatly to the certainty of diagnoses. To me the most astonishing feature of the war, from the standpoint of medicine, is that the scientific side of the profession, which has developed so much since '61, received no recognition. A medical work of the standing of the Medical and Surgical History of the Civil War will be impossible in this war thirty years later. Pathology of diseases new to us was not developed at all until late in the war.

I hope that the well-known specialists in hygiene in our medical schools had nothing to do with the selection of camps like Alger, Chickamauga and Tampa, —

scientific dietetics, certainly, did not come into play when our army was provisioned for a tropical campaign, and last but not least, although it is not the fault of our army medical department, the selection of volunteer surgeons because they were the friends of volunteer colonels or because they had political influence did not select in most cases the leading men of the profession, nor aid in solving the very difficult problems which confronted the medical department of the army.

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Clinical Department.

TWO CASES OF SUDDEN DEATH IN INFANTS.[1]

BY OLIVER H. HOWE, M.D., COHASSET MASS.,
Medical Examiner.

CASE I. On the morning of May 31, 1894, I was called to view the body of M. G. A., a female infant about three months old. The child had been well until the previous evening, when, as stated by the mother, it began to have a tight cough with some wheezing and difficulty of breathing. These symptoms caused great restlessness during the early part of the night, but household remedies were applied by the parents and at length at about 3.30 A. M. the child got comfortably asleep, the mother also lying down to sleep upon the opposite side of the bed.

When the mother awoke at about 5.30 A.M. she found the child dead with its face buried in the pillow, upon which it was lying.

I viewed the body at about 9.30 A.M., and found the hands tightly clenched, the lips purple and froth in the right nostril. The larynx was unobstructed and there were no marks of violence upon the body. The pillow, upon which the child's head had been lying, was of feathers and unusually soft and flimsy. The pillow could be pressed or moulded by the hands and would retain whatever shape was thus given to it.

I considered that the child turned over in its sleep (the mother said it had a particular habit of throwing its head about), and that it became suffocated by the pillow, a process that would have been favored by the obstructed condition of the bronchial tubes.

CASE II. On the morning of January 6, 1895, I was called to view the body of J. F. A., a male child three months old. The parents testified that the child had previously been well with the exception of occasional attacks of colicky pain at night. On the night in question, however, the child had no pain, but had been quietly sleeping through the evening in its cradle. When the parents retired the child was transferred from the cradle to the bed occupied by his parents. The child was placed on the farther side, next the wall; the mother lay in the middle at the right of the child and the father on the outer side of the bed. The mother said that her position before going to sleep was a considerable distance away from the child and that on waking up she was in the same position. She slept continuously until morning, as did also the father. On waking, they found the child dead, its face unencumbered by bed-clothing or pillow. The people in the other half of the house said that they heard the child crying at about 3 A. M. and that the crying suddenly stopped.

When viewed by me at about 9 A. M. I found large areas of ecchymosis on the right side of the abdomen and of the chest and upon the right thigh and leg. The hands were tightly clenched. The autopsy showed very numerous punctate hemorrhages on the surface and in the substance of both lungs, also over the surface of the heart, the aorta and the right kidney. The hemorrhages were much more marked in the organs on the right side of the body and the right side of the heart. The left kidney and the intestines were normal. The brain was also normal.

The shape and location of the external areas of ecchymosis, together with the punctate hemorrhages revealed by the autopsy, made it clear that the child's death had been caused by the pressure of the mother's body, making it a case of "overlaying." Although she stated that when she awoke she was some distance from the child, it is fair to believe that during sleep she rolled upon the child and remained upon it long enough to destroy its life and then perhaps in another unconscious movement rolled away from it again. Both parents had great fondness for their children and grieved deeply over this unfortunate event.

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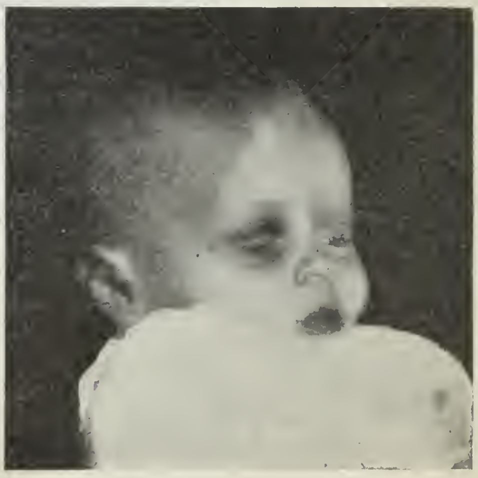
AN UNUSUAL CEPHALHEMATOMA.

BY W. P. COUES, M.D., BOSTON.

Mary R., born April 12, 1897; a forceps delivery; position O. D. P.; was transferred to my service from the Maternity Department, St. Mary's Infant Asylum, shortly after birth.

At the time of birth there was nothing remarkable about the head. The tumor and ecchymosis about the right eye appeared at the end of forty-eight hours.



The examination of the body was negative. On the forehead, slightly to the left of the median line, was a doughy, elastic swelling, the size of a closed fist; there was much ecchymosis about it, and also around the right eye; under the swelling there could be felt indistinctly a bony ring. The swelling and ecchymosis gradually disappeared. The child died at the end of five weeks of gastro-enteritis. Unfortunately no autopsy was obtainable.

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[1] Read before the Massachusetts Medico-Legal Society, October 5, 1898.

Medical Progress.

RECENT PROGRESS IN GENITO-URINARY SURGERY.

BY F. S. WATSON, M.D., AND P. THORNDIKE, M.D., BOSTON.

A MEANS FOR REGULATING INFLATION OF THE BLADDER (BY AIR), PRELIMINARY TO SUPRAPUBIC CYSTOTOMY.

In the September number of the *Annals of Surgery* Jepson points out the advantages of inflating the bladder with air rather than with liquids, which has already been dwelt upon by Bristow, F. Tilden Brown, and others, and describes an apparatus which he has devised for the purpose, as follows:

It is a stand in the form of a firm, perpendicular rod, supported by four feet resting upon the floor. To this rod are attached two shelves, which can be moved up and down upon it, and fixed at any point. Upon each shelf is placed a glass bottle graduated by ounce marks. Each has a spigot at the bottom by means of which the two bottles are connected by a rubber tube about three feet in length, fitted with a clamp so that it may be closed.

The bottle standing upon the upper shelf is filled with water, that upon the lower one is empty, and is provided with a rubber cork which is fitted tightly into its mouth. The rubber cork is perforated with two holes through which are inserted two small glass tubes, one of which is connected by a long rubber tube having a glass medicine dropper at the other end to a catheter. The other is connected by a second rubber tube with a pressure gauge in the form of a graduated U-tube containing mercury.

The bottle containing water is raised about eighteen inches above the empty one. A soft-rubber catheter has previously been inserted into the bladder, and the latter has been irrigated and emptied. The long rubber tube from the empty bottle is then connected with the catheter, by inserting the sharp end of the medicine dropper into the latter, and the clamp on the other rubber tube, that between the upper and lower bottles, is then opened, allowing the water to pass from the former to the latter. The amount of pressure being exercised at any time is indicated by the mercury gauge, while the number of ounces of air that has been forced into the bladder through the long tube from the lower bottle is shown by the ounce graduate scale on the upper, or water, bottle.

The amount of air passed into the bladder in ordinary cases is about ten ounces; when this amount has been reached the upper bottle is lowered until the level of the fluid in it remains stationary at the ten-ounce line. The tube between the catheter and the lower bottle, and that between the two bottles, are left open, so that while the ten-ounce water level in the upper bottle is maintained if the patient is quiescent, yet a portion of the air is expelled from the bladder through the catheter and into the lower bottle, if the patient coughs or exerts pressure by the abdominal muscles. This valuable feature of the contrivance avoids the danger of rupture of the bladder from too great intravesical pressure.

INSTALLATIONS OF PROTARGOL IN CHRONIC URETHRITIS.

In the July number of the *Annales des Maladies des Organes Genito-urinaires* Desnos gives the results of his experience with this drug in cases of chronic urethritis and cystitis of gonorrheal nature, and also in eight cases of tuberculous disease. The results obtained are not in his opinion so striking in acute gonorrhea as those which have been reported by some others, and in those cases he does not think that the drug should displace certain other remedies, notably permanganate of potash.

The installations applied to the posterior urethra, or the bladder, have varied in quantity from a few drops in the former to between fifty and sixty in the latter. The strength of the solution as adopted by the author in most cases is from five to ten per cent., after having tried solutions of from one to fifteen per cent. Solutions of ten per cent., or more, are sometimes followed by marked increase of the discharge, lasting from twelve to twenty-four hours, after which it becomes less than it was prior to the application.

The great advantage of the drug as compared with nitrate of silver or sublimate is that it produces much less pain and irritation, in fact, except in the stronger solutions, it produces no disagreeable sensation whatever. In a few cases a little blood followed the application, but these were tuberculous.

The observations were made upon 58 cases, 54 of which were gonorrheal urethritis, and four of gonorrheal cystitis.

The installations gave better results in cases in which there was but very moderate urethral discharge, those having more abundant discharge doing better with *irrigations* of weak solutions of protargol.

A noticeable feature in the cases which were cured was the permanent and rapid disappearance of mucous shreds from the urine.

In some cases the opportunity of comparison with treatment by installations of sublimate or nitrate of silver was afforded, and was very favorable to protargol. In a few cases there was failure to cure.

The author insists upon the importance of continuing the treatment, up to three or four or more applications, after an apparent cure has been established, otherwise relapses are liable to occur. The applications should be repeated about once in two to three days.

In cases of tuberculous urethritis the use of the drug, although followed by some amelioration of the symptoms, did not produce any lasting benefit; it was in these cases that hemorrhage followed the application.

In gonorrheal cystitis the results were without exception good. In these cases two conditions must be observed: the bladder must be perfectly empty, and the application must be made to the vesical neck. Relief followed very rapidly, and cure was obtained after the sixth or seventh application. Strength used in bladder irrigations is five per cent.

CASTRATION, AND ANGIONEURECTOMY OF THE CORD, IN HYPERTROPHY OF THE PROSTATE.[1]

The writer reports the results of double castration for the relief of prostatic hypertrophy in six cases; entire relief being produced in three, and great amelioration in the others. In some cases the improvement was manifested very soon, in others it was delayed even to five or six months. In all cases there was marked and rapid shrinking of the prostate.

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[1] Albarran: Annales des Maladies des Organes Genito-urinaires, July, 1898.

In regard to resection of the cord, the author does not believe that in the majority of cases it produces atrophy of the prostate. Some experiments conducted in collaboration with Motz led Albarran to the belief that resection of the nerves and vein of the cord, which in dogs leads to atrophy of the prostate, and of the testicle as well, might be applied to man.

The operation consists in a resection of a small extent of all the vessels and nerves of the spermatic cord, except the deferent artery and one or two veins accompanying it; these are isolated and then the rest of the mass composing the cord is tied *en masse* by two ligatures, and the part included between them cut away. Albarran has tried the operation in but one case, but it is of too recent date to draw any inference from.

TREATMENT OF VESICAL INFECTION BY SUPRAPUBIC CYSTOTOMY.[2]

The author, under this title, advocates suprapubic cystotomy in cases of bladder infection, regarding the condition under these circumstances as equivalent to a foul abscess and basing his treatment upon this similarity.

An interesting example of the rôle played by the use of aseptics in the urethra and the bladder, especially in connection with catheterization in cases of prostatic hypertrophy, is given by the writer, who states that formerly in his hospital service, owing to his inability to have good assistants, almost all cases requiring the use of urethral and bladder instruments became infected, but that subsequently, this having been remedied, cystitis had absolutely disappeared following the use of strictly sterilized instruments.

The writer bases his advocacy of the treatment of infectious cystitis by suprapubic cystotomy and subsequent drainage upon his personal successful experience with it, which extends to a considerable number of cases, in almost all of which favorable results have followed its employment.

The conclusion of Tuffier, who would limit the practice of the suprapubic operation in such cases to the gravest only, is earnestly combatted by the writer, who shows the unfairness of the deductions thus drawn, and affirms the life-saving and beneficial results of the high operation, and its power to arrest ascending infection in the most unpromising conditions, and by just so much more when practised in earlier and more favorable ones.

This article deserves careful study.

TUBERCULOSIS OF TESTIS.

R. Koenig[3] contributes a most interesting article and draws the following conclusions:

(1) The prostate serves as an excellent abode for bacilli, which may develop there until a good chance comes for them to proceed down the vas deferens to the epididymis.

(2) Genito-urinary tuberculosis may also begin as a metastasis from tubercular foci in the lungs, joints, etc. Perhaps the prostate is an intermediate station in such a development.

(3) *In a few cases* the process seems to extend from bladder to testis without involving the prostate.

(4) Primary testicular tuberculosis (that is, cases which have no foci in other organs) is exceptional. In conclusion Koenig reports 45 cases upon which he has operated, together with his views as to operative indications. The article is a valuable one.

REMOVAL OF A SECTION OF KIDNEY TISSUE FOR DIAGNOSIS.

Bloch[4] presents a long and well-written article advocating cutting down upon the kidney and removing a section of tissue for diagnosis in doubtful cases. The article is certainly worthy of the careful attention of even the most conservative surgeon.

TOTAL REMOVAL OF THE BLADDER.[5]

This article describes a case in which the whole bladder was successfully removed for carcinoma, and in discussing the indications for such a procedure admits that the cases in which it is justifiable are very seldom met with.

HYDATID DISEASES INVOLVING OR AFFECTING THE GENITO-URINARY ORGANS.

Considering the rarity of hydatid disease and its great rarity in the genito-urinary tract it is remarkable that five articles should appear at practically the same time reporting such cases. The references are appended:

Tickell. British Medical Journal, April 16, 1898.
Viannay. Kyste Hydatique du Rein: Société Médicale de Lyon.
Posner. Echinococcus der Harnwege: Berlin. med. Gesellschaft, February 16, 1898.
Honzel. Revue de Chirurgie, August and September, 1898.
Roche. Annales des Maladies des Organes Genito-urinaires, 1898, No. 7, p. 750.

Welander[6] reports a case of polyneuritis blenorrheica. In the sixth week of the disease there appeared a paresis of seventh and eleventh cerebral nerves and "muskeln-nerven" from the spinal cord. Death resulted three and one-half weeks later from paresis of the breathing apparatus.

Such an unusual example of a gonorrheal process, involving the nervous system, certainly merits recording.

AN INSTRUMENT FOR COLLECTING THE URINE FROM EACH KIDNEY SEPARATELY.[7]

This instrument is so ingenious and so easily used that it should receive the attention which the profession seems likely to accord it, in spite of the narrow range of cases to which its use is applicable. The author's illustration and description of the instrument are appended:

The instrument, although quite simple, is, as usual, somewhat difficult to clearly describe. It consists of a double catheter, each being separate throughout, but both being enclosed in a common sheath throughout its shaft or straight portion, thus giving it the appearance of a single tube flattened from before backwards. Each catheter, however, is separately movable about its longitudinal axis within the sheath. The sheath, or longitudinal straight portion of the catheters, is 20 centimetres in length, graduated in centimetres along its upper surface. A detachable handle is attached to the longitudinal portion. The proximal extremity (in reference to the patient) is curved somewhat similar to an ordinary male sound — forming an arc of about 60° of a circle, with a radius of 35 millimetres.

This curved portion does not pass at once into the straight portion, but is set on a slight forward angular displacement about 3 or 4 millimetres in length. Upon transverse section this curved portion is approximately a semicircle, so that when the flattened surfaces of the two catheters are opposed it is nearly round. Near the end on the flattened surfaces and the lateral portions of the semicircular surfaces are three or four small perforations. The distal extremity of each catheter is round, and curved in the same plane as the proximal extremity, forming about the quadrant of a circle, the same as the curved end of an ordinary male sound (Fig. 1).

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[2] Picque: Annal. des Malad. des Organ. Gen.-urin., August, 1898.
[3] Beitrag zum Studium der Hoden tuberculose: Deutsche Zeitschrift für Chirurgie, Band 47, Heft. 5 und 6.
[4] Revue de Chirurgie, June, 1898
[5] Tuffier and Dujarier: Revue de Chirurgie, April, 1898.
[6] Nordiske Medicinskl. Arkiv., 1897, No. 8.
[7] Harris: Journal American Medical Association, January 29, 1898.

The curves of the two extremities being in the same plane, the distal end will always indicate accurately the exact direction of the proximal end. At about the junction of the distal curve with the straight portion is a short tube, continued in the line of the straight portion and opening into it. The distal extremity of each catheter is connected by means of a short piece of rubber tubing with a separate glass vial. The corks of the vials are doubly perforated. Each vial is finally connected by means of a piece of rubber tubing with a single rubber exhaust bulb (Fig. 2). As a part of the device there is a metal lever about 25 centimetres in length, with a handle at one end, the opposite extremity being suitably curved and flattened laterally (Fig. 3).

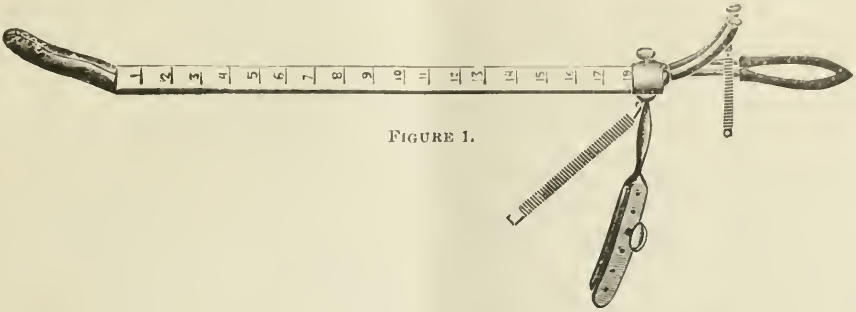

Figure 1.

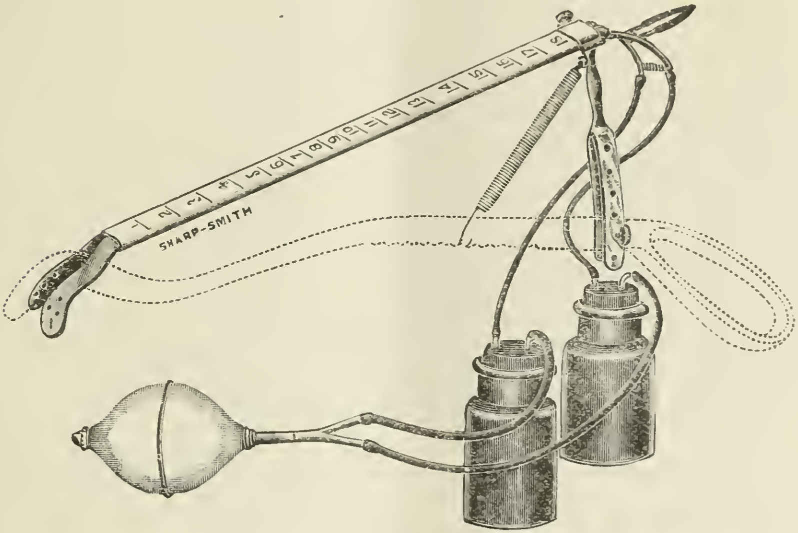

Figure 2.

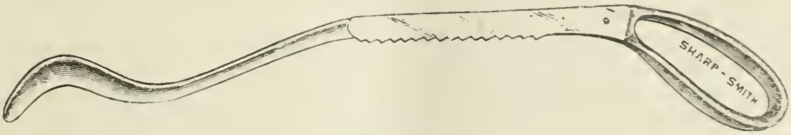

Figure 3.

The instrument is used in the following manner: The patient, male or female, is placed comfortably on a table in the ordinary lithotomy position, with the hips slightly elevated. The instrument, with the flattened surfaces in contact so as to form practically a single catheter, is introduced into the bladder in the ordinary way. So soon as the proximal curved extremity is within the bladder, the proper distance being indicated by the gradual scale, each catheter is rotated about its longitudinal axis until each proximal end, as indicated by the distal end, is directed outward and backward. The end of each catheter should pass through an arch of about 110° to 120°, or so that the angle subtended posteriorly by the two catheters will be about 120° or 140°. They are held in this position by a small spiral spring. The ends of the proximal extremity will now be in the neighborhood of, but not exactly at, the ureteral openings. The ends are separated a greater distance than the distance between the ureteral openings so as to avoid the danger of compressing the opening of the ureter, and thus preventing the escape of the urine. The lever is now introduced into the vagina in the female or rectum in the male. By gentle pressure forward directly in the middle the base of the bladder is raised into a longitudinal fold between the ureteral openings.

The curve of the lever is such that it fits nicely in the angle formed by the separating extremities of the catheters, thus forming a complete water-shed. The end of each catheter now lies at the most dependent part of a little pocket, a perfect water-shed separating the two. The ureters open, one on either side of the water-shed near the base of the declivity in the immediate vicinity of the respective ends of the catheter.

By producing a gentle exhaustion of the air in the vials by means of the bulb, the urine, as fast as it escapes from the ureters, drops directly into the ends of the catheters and flows at once into the vials, right and left respectively.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

JOHN DANE, M.D., SECRETARY.

Regular Meeting, Saturday, October 29, 1898, Dr. F. H. Brown in the chair.

Dr. M. W. Richardson read a paper on

THE VALUE OF UROTROPIN AS A URINARY ANTISEPTIC, WITH ESPECIAL REFERENCE TO ITS USE IN TYPHOID FEVER.

Dr. H. F. Vickery: I would like to report a case of very great usefulness of urotropin. There was a man in my care who had disease of the aortic and mitral valves, and also what was thought to be a cancer of the bladder; and his urine was positively the worst that I ever saw: it nauseated him and anybody near him after it was passed, and he suffered a great deal of pain, so that he had to have morphine at night. He was given only five grains of urotropin three times a day, and in six days his urine had become quite clear and the morphine had been omitted. All who saw him were very much struck by the astonishing improvement in the man's condition, and the more so since he was cachectic from an absolutely incurable disease.

Dr. Paul Thorndike: I wish to say a few words in corroboration of Dr. Vickery's statements showing the value of urotropin in some genito-urinary cases. During the last year I have used urotropin in five- to ten-grain doses in a moderate number of cases of acute and chronic inflammation of the bladder or pelvis of the kidney. I have not yet tabulated these cases, but they number some 25 or 30. In every one of the chronic cases immediate benefit has followed the use of the drug. and improvement invariably began within the first twenty-four hours. In several cases of chronic cystitis resulting from prostatic hypertrophy or a preceding acute disease, the urine became acid and comparatively clean within a few days. In the acute cases the results have not been so noticeably good.

Dr. R. W. Lovett read a paper on

THE REMOTE EFFECTS OF SPRAINS.

Dr. Vietor: I would like to add to the list of remote effects of sprains — those due to injury of certain tissues which are apt to be overlooked in thinking of joints. In thinking of joints we are apt to let our minds dwell only upon the essential anatomical constituents, forgetting that clinically we meet a physiological grouping of tissues, the essential basis of which undoubtedly is the anatomical joint — bone and cartilage united by ligaments which are lined by synovial membrane. But inseparably connected *functionally* with this anatomical basis are the encircling related tissues — muscles which move the bones of which the joint is composed; bursæ which facilitate these movements, and fasciæ in which are imbedded and which protect the blood-vessels and nerves which vitalize this complete physiological joint. With this view of a joint, it will be readily seen that the effect of sprain or any kind of joint injury will vary according as one or more of the tissues enumerated is involved.

However, I propose to call your attention now to only one of these related tissues, namely, the nerves; those which lie in close proximity to the joint or which are distributed to it. Two years ago, in the clinic of Professor Van Arsdale, in New York, I made an exhaustive study of a series of cases of injury of the shoulder, cases of fracture and dislocation being excluded. It is a remarkable fact that the majority of these cases had been diagnosticated as "sprain," and had been treated as such before coming to the clinic; and it is of the greatest importance to note that in about 70 per cent. of these cases I found distinct evidence of lesion in one or more of the nerves lying close to the joint or distributed to it. The inference was unavoidable that at the time of the "sprain" or stretching or distorting action of the joint proper, the overlying tissues, including the nerves, were also more or less sprained or stretched or subjected to distorting action, and that long after the other tissues had regained their normal condition the nerves continued to give symptoms.

The comparative frequency of the occurrence of nerve involvement in such injuries can be explained on an anatomical basis. Long ago the famous anatomist Cruveilhier recorded his observation that nerves and arteries differ essentially in their distribution, for while the latter are noted for their curved and tortuous course, "the nerves have in general a straight direction and are just long enough to go from their point of origin to their point of termination, so that if the movements go beyond the ordinary limit, the nerves may be the site of dangerous traction." This anatomical observation was made of practical use by F. Raymond in the interesting case of a young man who was brought to him with sudden, complete paralysis of both circumflex nerves. The only history was that the man had gone to sleep in a very unusual position, his arms were raised above his head and his hands clasped behind his neck; when he awakened in the morning he was paralyzed as described. Remembering Cruveilhier's observation, Raymond investigated the circumflex nerve in the dissecting-room, and it was very curious that of five cadavers examined in one of them this nerve was so restricted in its distribution that the amount of tension made by putting the arms in the position described was sufficient to indicate that if the subject had been alive there would have been dangerous traction upon the nerve. In four other cases the nerve was found to be sufficiently sinuous to permit of this attitude without dangerous tension.

The conclusion that must be drawn from these facts is that many of the remote or long-lasting effects of sprains or other joint injuries are due to injury of the nerves in relation with the joint; and hence every such case should be examined with especial reference to determining whether any nerves have been injured. This is important, especially in regard to prognosis, and the examination should not be omitted even if the symptoms point almost exclusively to the involvement of the essential anatomical joint, for it should be remembered that it is a well-established fact that the trophic changes which may follow a nerve injury may exactly simulate a primary joint lesion.

Dr. Crockett read a paper entitled

WITH THE HOSPITAL SHIP "BAY STATE" IN PEURTO RICO.[1]

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[1] See page 6 of the Journal.

FIFTH DISTRICT BRANCH, NEW YORK STATE MEDICAL ASSOCIATION.

Fourteenth Annual Meeting, Held in Brooklyn, May 24, 1898.

(Concluded from Vol. cxxxix, No. 25, p. 632.)

Dr. George H. Mallett, who was to have treated of the non-operative treatment, not being able to be present, Dr. Walter B. Chase read a paper on

THE OPERATIVE TREATMENT OF GONORRHEA IN FEMALES.

Gonorrhea in the female, he said, if it involved the structures beyond the vagina, was one of the most insidious and dangerous diseases to which the sex was subject. It was, indeed, more grave than syphilis. It was his province to speak of the operative treatment of the various conditions resulting from the disease. Phlegmonous abscesses should be freely opened and their beds packed with iodoform gauze. If the glands of Bartholin became infected and suppurated they were to be opened, and it was possible that they might heal by first intention. A very troublesome outcome of the disease was chronic inflammation of the urethra and perhaps of the bladder, and they were to be treated by means of irrigation and nitrate of silver. In cases of intractable cystitis it was sometimes necessary to "buttonhole" the wall of the bladder, making an artificial vesico-vaginal fistula, by means of which treatment could be directly applied to the interior of the viscus. The invasion of the cervical canal and the uterine cavity by the gonococcus produced very serious results, and in the treatment thorough drainage was very essential. As a rule, a septic uterus was a patulous uterus, and therefore the free use of antiseptic agents could the more readily be carried out. For the purpose in question the permanganate of potassium and formalin were perhaps the most serviceable of these.

If the Fallopian tubes were not implicated thorough curettage of the uterus was one of the most efficient means of treatment, soluble iodoform pencils being inserted into the cavity after the operation. If, however, the tubes were also implicated this treatment might only serve to open up new fields for absorption and infection. Pelvic cellulitis and pyosalpinx were among the grave results of gonorrheal disease, and, in fact, all the pelvic organs and tissues were liable to become involved in the destructive process. Thus we might have localized peritonitis from leakage of infectious material from the frimbriated extremities of the Fallopian tubes. Nature sought to ward off the danger by the deposit of organized lymph. Among the numerous results of the disease was the formation of abscesses in Douglas's cul-de-sac and other parts, and these pelvic troubles interfered with the functional activity of the uterus and ovaries, and produced the gravest impairment of the patient's health. In connection with pyosalpinx there was usually much distention of the tube, and Dr. Chase believed that this was due to total closure of the tube at its uterine extremity.

The time came when palliative treatment became delusive and dangerous. When pus was present the indication was to evacuate it as promptly as possible, and for this purpose he, as a rule, preferred the abdominal to the vaginal incision, as giving a wider scope for operation. Having described the technique of the procedure, he said that if the uterus was found to be healthy it should be allowed to remain, but if it were diseased it was better to remove it, together with the ovaries and tubes.

Dr. Robert Newman read a paper on the

ELECTRO-THERAPEUTIC TREATMENT OF URETHRAL STRICTURE,

in which he reiterated his well-known views on the efficiency of electrolysis in the cure of stricture, based on an experience of many years and embracing many hundreds of cases. He gave the latest statistics of his own practice and that of other operators, and contended that the cicatricial tissue of the stricture was removed entirely by true electrolytic action, without any burning or cauterization whatever. It was a treatment, he said, which required both skill and patience on the part of the operator, but any time and trouble devoted to it would be richly repaid by the results obtained. He then quoted at some length from a recent letter in the *Medical Record*, by Dr. T. Betton Massey, of Philadelphia, written in reply to some criticisms of the treatment by electrolysis made by Dr. Rockwell, and went on to say that this method had received the repeated approval of the American Electro-Therapeutical Association, many of whose members had successfully practised it. By some of its critics it had been objected that the strictures cured by electrolysis were merely spasmodic strictures. This was entirely untrue, however, for by the use of electrolysis a spasmodic stricture would be made worse instead of cured. One great advantage of the electrolytic method was that it was followed by no relapse, those who had been cured by it remaining permanently cured. At this moment he recalled to mind a gentleman who had had a very bad stricture, upon whom he had operated (by electrolysis) twenty-two years ago. The result was a perfect cure; the patient soon after had married, and he had remained entirely well ever since.

Dr. Newman also made some remarks on the treatment of acute gonorrhea, in which he said that he quite agreed with Dr. Taylor as to the gross exaggeration employed by many writers in publishing their marvellous results. By the use of the endoscope and urethroscope we could obtain a much more accurate knowledge of the condition of the parts than was formerly possible. He also agreed with Dr. Taylor that it was as yet too soon to form a positive opinion as to the real value of such new remedies as protargol, argonin and argentamin. He thought it would be a good plan to use these agents in the form of gelatine urethral bougies and he presented specimens of three kinds for examination. He had obtained better results from the use of protargol than from that of either of the others.

Dr. N. L. North, Jr., read a paper on

THE GONORRHEAL OPHTHALMIA OF INFANTS.

He said that the cause of the disease was the introduction of the gonorrheal germ into the conjunctival sac and the growth of the same. The infection might be received from the maternal genitals at birth, or from the mother or other attendant any time after birth. In case the mother was suffering from gonorrhea, the longer the labor the greater was the danger to the infant's eyes. On this account males were more frequently affected than females, because, by reason of the larger size and greater hardness of their heads, more delay was occasioned in their delivery. The microscope enabled us to make a positive diagnosis of gonorrheal ophthalmia. As to prophylaxis, this was of the utmost importance, and the antiseptic precautions now so generally used in regard to both the mother and the child had rendered it a much rarer disease than formerly. The prognosis was grave, and the blindness of seventy-five per cent. of the inmates of the institutions for the blind in the world was said to be due to this cause.

When, however, prompt and efficient treatment was resorted to there were few affections in which more satisfactory results could usually be obtained. By the application of a two-per-cent. solution of nitrate of silver to the eyes of every infant born in it Crédé reduced the mortality in his own hospital at Leipsic from seventy-five per cent. to almost nothing. For this prophylactic treatment Dr. North believed that a saturated solution of boric acid was quite as efficient as nitrate of silver, and it had the advantage that its use was followed by no reaction. Having given a *résumé* of the symptoms, he described the treatment which he usually employed.

The lids having been carefully opened and all discharge cleaned away, a solution of nitrate of silver of the strength of from 10 to 40 grains to the ounce, according to the circumstances of the case, was applied by means of the so-called toothpick applicator. The eyelashes were then anointed with a little vaseline, squeezed from a collapsing tube, to prevent gluing of the lids and retention of discharges. Cold applications were kept up continuously, and the nitrate of silver once in twenty-four hours. Of late he had employed a solution of formalin (or formaldehyde) of the strength of 1 to 1,000, and had been much pleased with its effects. He had found that when using this a much weaker solution of nitrate of silver was required, and a weak solution could be applied by the nurse as often as desired. Formaldehyde had no harmful effect upon the structure of the cornea, and he considered it a most valuable addition to our means of treatment. These cases, requiring the continuous application of cold compresses and the free use of antiseptics, naturally demanded the constant and most careful attention of both the physician and the attendants.

Dr. Arthur Mathewson said that cases that were seen early almost uniformly resulted favorably. This was true of all gonorrheal ophthalmia whether in adults or in new-born infants. Of late years his own experience had been in favor of hot applications rather than cold. Frequent fomentations or hot douchings seemed in his hands to have a more favorable effect than cold applications. To test the relative value of the two forms of applications he had in the case of a patient at the Brooklyn Eye and Ear Hospital, both of whose eyes were affected, used the hot for one eye and the cold for the other. The result was decidedly in favor of hot applications, and he now employed them exclusively in both adults and infants. Noyes in his statistics had put down the number of cures in all cases at 40 per cent.; but Dr. Mathewson thought that with the methods which he now employed he could safely place the percentage of cures as high as 80.

In addition to the hot applications he used a rather mild solution of nitrate of silver (not stronger than 10 grains to the ounce). A solution of bichloride of mercury of the strength of 1 to 3,000 was also used by the nurse once a day, as well as a saturated solution of boric acid in the intervals. This might perhaps seem like polypharmacy to many, but the results obtained from the treatment had proved so very satisfactory that he did not feel at all disposed to change it.

Dr. T. H. Manley said there had certainly been a great change in our views from a few years ago, when gonorrhea was regarded as a purely local disease. In speaking of gonorrheal arthritis he mentioned a case affecting the knee-joint, in which the articular structures had become so much involved that amputation was necessary. As to the diagnosis by means of microscopic examination of the fluid of the joint, this did not seem to be at all reliable, as Martel had reported twelve cases of undoubted gonorrheal arthritis in which the gonococcus was not found present in a single instance. As to the treatment, his experience had led him to believe that a great deal could be accomplished if the affection was seen in its early stage. He adopted a general antiphlogistic plan, first using leeches and afterwards warm applications. He also attached great importance to the employment of mercury by inunction, care being taken to avoid the salivation of the patient. It was well known, he said, that mercury had a most favorable action on serous membranes.

Gonorrhea, he went on to say, was one of the chief causes not only of pelvic but of renal disease. Lawson Tait was authority for the statement that, next to abortion, it was the most common cause of ovarian and tubal disease, and of pelvic cellulitis, and it had been found that, next to tuberculosis, it was the most common cause of pyelo-nephritis and pyelitis.

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BOSTON MEDICAL LIBRARY.

Special Meeting, Tuesday, November 29, 1898, David W. Cheever, M.D., in the chair.

Two amendments to the By-laws were passed unanimously. The first provides that any member of the Massachusetts Medical Society, Massachusetts Dental Society, Massachusetts College of Pharmacy and such otherwise as may be approved by the Executive Committee may become members of the Association by simply signing their names on the roll at the Library. The second amendment changes the date of the annual meeting to November instead of October as heretofore.

STATEMENT BY THE PRESIDENT.

In obedience to the vote passed at the annual meeting, on the motion introduced by Dr. Chadwick, this special meeting has been called for the purpose of seeing if we can raise funds to leave this building and to get a better one. We are poor, but we are honest. Moreover, we are in this very unfortunate position: with constant accessions of books and periodicals, total inability to display them or to use them, great danger from fire, inaccessibility even to those stores of literature that we have already accumulated — a position not worthy of the dignity of the regular profession in this community. In order to raise this money a strong appeal must be made to those outside the profession, and also to those inside the profession.

Within six to ten miles' radius of this building there are not less than 1,000 physicians of the Massachusetts Medical Society practising medicine. The Suffolk District Society, which does not follow strictly the lines of Suffolk County, has rising 500 members; and the very numerous communities around us in Middlesex and Essex and Norfolk easily bring up the total to 1,000 members; 1,000 physicians, perhaps one-half of the whole regular profession of the State of Massachusetts, are within easy riding distance of this library; and very many of them use it; and very many more would use it were it possible to provide suitable rooms where our numerous acquisitions could be on file and where they could be seen without waste of time.

Now this library, in certain respects, as I have no doubt others will tell you, is one of the best in the country. It is said to be one of the best to work in, because it consists largely of the medical knowledge of the day; kept up from day to day, and week to week, and not buried in obsolete volumes, but is rich in that invaluable periodical literature which reflects all the advances of medical science.

I very well remember when I was first beginning the profession that gentlemen had no such place to resort to. I remember myself, when trying to look up subjects, vibrating between the Boston Athenæum, which had some medical books, and the Public Library, which had other medical books, and the library in Temple Place, which belonged to the Improvement Society; so that the scanty sources of knowledge that existed then were scattered in three places, and great waste of time and patience was the result. Now we have concentrated a vast amount of periodical medical literature, and we have at least 1,000 doctors ready and willing to use it. It is impossible to conceive that we can go on in this way without being able to raise a sufficient sum to put this library in its proper standing before the community, and to have a building which shall be worthy of the dignity of our profession, and one which, I believe, when once started, will be readily supported by ourselves. I can say no more, but will call on one who has been almost the founder and father of the library to give his exact knowledge of the subject. I will ask Dr. J. R. Chadwick now to address you.

Dr. Chadwick: Upon me devolves the not ungrateful task of setting forth the present conditions of your library, which, in the opinion of your officers, warrants the movement to secure a fitting building for the preservation of your collections and for the promotion of their usefulness.

That the true purpose and high aims of this Library Association may be fully appreciated, let me preface my facts by a few general assertions which cannot be gainsaid.

The health and longevity of life in any community is dependent in great measure upon the knowledge of its medical practitioners. The diploma of M.D. merely certifies that its possessor has laid the foundation of the knowledge essential to enable him to combat disease and death; upon the superstructure he must labor to the end of his days.

In the early years of practice few men can afford to buy or even give shelf-room to a tenth part of the books that they need; no man, whatever his means, can possibly acquire all. A library is consequently indispensable in every centre of population, or the health and lives of the community will be jeopardized by the ignorance of its medical practitioners.

It is only through concerted action in some such association as this, owned by the profession, collected from the profession, sustained by the profession, managed for the profession, that ready access is ensured to medical literature. This Library Association was enacted twenty-three years ago by some among us then struggling for fame and practice, to fill the want which we keenly felt. We have labored early and late to increase our resources, until the meagre volumes that only half filled our shelves in the two rooms in Hamilton Place have increased until they not only fill our building in Boylston Place but have overflowed by thousands into the crematory at Forest Hills.

My last annual report showed that our library contained 30,310 volumes (of which 17,431 were of periodicals) and 25,965 pamphlets. They are all completely catalogued by authors, titles and subjects, so that any book or journal can be had for reference on demand. Our library ranks high among the medical libraries of the country, being only surpassed in size by that of the Surgeon-General's Office in Washington, that of the College of Physicians in Philadelphia, and that of the Academy of Medicine in New York.

Upon our shelves are preserved for all time the libraries of those from among our early associates who have laid down their earthly cares. We have the superb anatomical library collected by our incomparable first president, Dr. Oliver Wendell Holmes, which he had conned and studied and drawn upon to illuminate his lectures at the Medical School during his thirty-five years' tenure of the professorship of anatomy, and his many addresses to our societies. Besides these may be found the libraries of the late Dr. Calvin Ellis, Dr. Henry I. Bowditch, Dr. Edward H. Clarke, Dr. D. Humphreys Storer, Dr. George C. Shattuck — one of our constant benefactors; those of Dr. Thomas B. Curtis and Dr. Francis H. Hooper, both cut off in the time of their growth and increasing fame; those of Dr. Jacob Bigelow, and his son, Dr. Henry J. Bigelow, the most brilliant members of our profession in their respective epochs; finally, the rich dermatological library of the late Dr. Edward Wigglesworth, who, for twenty-two years an active member of the Executive Committee, was the most ardent champion of our library, contributing without stint of his wisdom and material resources to bring us to the position in which we stand to-day. Lack of time obliges me to omit more names than I mentioned.

We have received from friends and relatives portraits of many early practitioners in this community, and of many of our benefactors. Chiefly to be mentioned is the fine portrait of Dr. Samuel Danforth, by Gilbert Stuart; that of Dr. Oliver Wendell Holmes, by Billings; that of Drs. Henry J. Bigelow, J. B. S. Jackson, D. Humphreys Storer and Thomas B. Curtis, all by Vinton; that of Dr. John Warren, and many others too numerous to mention. It is sad to think that most of these have had to be stored in the Art Museum that they may escape the danger from fire, to which they would be exposed if allowed to hang upon the walls of this building.

In addition to our obligations to the present and future generations of medical practitioners in this goodly city of Boston, do we not owe it to these past friends and benefactors to see that their treasures be properly cared for in a building secure against fire, and be made of use to the profession, as was the intent of their former owners?

Another quite different field of usefulness, which we have voluntarily occupied since 1879, was to become the medium of communication between nurses on the one hand and physicians and their patients on the other. The directory for nurses, which we have carried on for nearly nineteen years, has been of the utmost value to this community, and entitles us to a warm support from all who have availed themselves of it.

My final mission this evening is to tell you in brief of our financial situation and the main feature of our projected building.

We own the building on Boylston Place, which is assessed at $18,000; we own the lot of 9,000 square feet on the corner of St. Botolph and Garrison Streets, which is taxed for $25,000; we owe a mortgage of $8,500. We have a building fund of $5,000. We propose to raise $100,000, which is the estimated cost of a suitable building upon the Garrison Street lot. Toward this sum we can count upon obtaining at least $9,500 (after deducting the mortgage) from the sale of our present building, which, with the addition of the building fund of $5,000, will give us $14,500 as a starter.

We have had preliminary sketches drawn for a building three stories in height, covering 6,750 square feet of area. In this we shall have special rooms on the ground floor for the directory for nurses, and perhaps a special reading-room for nurses. In the second story the whole front will be a reading-room with alcoves, similar to Bates Hall in the Public Library, which will be known as Holmes Hall, in memory of our first president; a special room for journals, another for those who wish to smoke, and a small hall for social meetings. In the third story there will be three or four halls for society meetings, capable of accommodating from forty to five hundred persons each. The building will be absolutely fireproof.

This is the scheme in outline for which we ask your active, enthusiastic co-operation.

The President: I will call on Dr. J. C. Warren.

Dr. J. C. Warren: I am very glad, sir, to come here this evening and say something about the project which you have in view. I believe it is a most worthy one, and I have been surprised that we have not long ago determined to take the step that we have finally determined upon. It can only be accounted for by the financial situation of the country, which has been such an unfavorable one for so many years past.

Dr. Chadwick spoke of the advantages of a library. I don't think they can be dwelt upon too strongly, particularly in this age of rapid advancement. I suppose it has never been the case in the experience of any set of professional men that so vast, so far-reaching changes have taken place in the progress of medical science in the space of time embraced by our professional careers. Any one at all engaged in literary pursuits must realize how many standard works have been born, lived and died within that period, have already been placed upon the upper shelves of the libraries and new ones have taken their place. Systems of medicine and of surgery have been written and have become antiquated within even the period of a decade. One needs, therefore, considerable resources to keep him abreast of the time if he wishes to be able to read at his convenience and leisure all the latest contributions to medical and surgical science, and even a man who is able to purchase all that he desires to read will find it a difficult problem to have it so arranged in his own home that it is always at hand when he wishes to read any particular volume. In my own experience, having a library of several thousand volumes, I have found it more convenient to come across the Common and ask Dr. Brigham for a book than to hunt around hopelessly for it on my shelves, although pretty sure I possess it, and during a good deal of hard literary work in the last ten years I have found the medical library an invaluable resource. I do not know how I could possibly have got along without it.

Dr. Chadwick has alluded to the educational value of ready access to medical literature to members of the profession. There are a great many men who cannot afford to have large libraries. The majority cannot. There are many that can only afford to keep the books they have been obliged to buy during the period of acquiring their medical education, and yet it is necessary for them as well as for the teachers of medicine to keep abreast of the times if they will do justice by their patients. I think, therefore, we cannot dwell too strongly upon the educational value of such an institution as this on the mass of the profession, and I think that ought practically to be the keynote by which we shall approach the public — that we do the work which follows that of the medical school. The medical school teaches the physician the rudiments of medicine; the medical library gives him the opportunity to be always a student and to keep upon a far higher level of medical knowledge than he otherwise would be able to do. And I think also we can use as a forcible argument the advantages which accrue from the work done for the nurses of the city. That is a public benefit, something which the citizens of Boston profit by themselves.

I will only say this in conclusion, that my set, if you wish to call it that, when we were young, took hold and did a good deal of hard work. Dr. Chadwick has not told you half what he has done for this library. There were a great many men, contemporaries of his, who have done a great deal of public-spirited work. I am glad to have this opportunity to say to the coming generation of young men, that there is a lot of public-spirited work they could do; if they would come forward and each do his share, the stones of the new building would pile up upon one another in no time at all.

The President: We all know how much the Medical School, the Warren Museum and other institutions of learning have owed to the gracious efforts of Dr. Warren for the profession, and we hope that he will feel he can lend us a hand in this higher method of education to which he has so gracefully alluded; but I feel, with him, that we ought to have help from the younger generation, and I am going to call upon a gentleman who has been among the most active in advocating this subject, Dr. A. K. Stone.

Dr. A. K. Stone: I don't know that there is very much to be added to what already has been so well said. I belong to a set of men who, I think, have used the library a great deal, and found out its value. The library is of much value to the young man, the man who finds it hard work to buy a five or ten dollar book and keep it a short time only to find it is out of date, yet has got to keep up with the literature of the time, study things coming up from time to time, to see how many of them are useless and how many useful, and to do this he has got to have the resources that are presented to him in the accumulated pile he gets at the library. The man who does not get hold of the library and sticks to the text-books that he takes with him from the medical school, and has besides one journal, perhaps, that he subscribes to, reminds me of the cook on the Back Bay, who, when urged to take some of the books in the house and read them, said she had no need of any more literature; she read the "Lives of the Saints" and *Town Topics*, and that was amply sufficient for her purpose. I think we want all of us to take hold and do what little we can to help this thing forward, and not be relying on the few books we are able to buy ourselves.

The President: I will now ask one of our oldest members to present some resolutions with remarks: Dr. F. I. Knight.

Dr. F. I. Knight: It is unnecessary for me to say anything in introducing these resolutions in addition to what has been said, except, just in passing, to emphasize the fact which I have encountered in the last few days in trying to get money, that most people in the community haven't the slightest idea of what the library is, or what it is for, and it will take more than one interview to present the subject so that they really will comprehend that side of the question which Dr. Warren has presented tonight. — the great importance to the community indirectly, in fact almost directly, in the maintenance of a library of this kind. One person with whom I was speaking said, "What is this? Is it a place where the doctors go to smoke and read the papers?" He seemed to think it was a kind of club-room and place for recreation, and the doctors might as well pay for it all themselves. We found before that most of the money raised was given to us because we asked for it. It was a personal thing: "I know you, and you want this thing, and I will give you the money." I think most of the former contributors had very little idea of the importance of the library. Rich men must be made to appreciate the fact that the library is of very great importance to the profession, and almost directly to the community, therefore I would present these resolutions:

Resolved, That a General Committee of not less than twenty-five (25), with the President as Chairman, and the other officers of the Association as members *ex officio*, with power to add to their number, be appointed by the Chair to take charge of the raising of funds and the erection of a new building.

Resolved, That from this General Committee an Executive Committee of five (5) be appointed by the Chairman, to have the entire management of the details of the whole subject, and report regularly to the General Committee.

Resolved, That a Special Committee of three (3) be appointed to consider and report upon the question of a site for the new building.

The President: I call upon Dr. George B. Shattuck, who is the editor of our medical journal, and familiar with all periodical literature.

Dr. Geo. B. Shattuck: I fear I shall have to ask the indulgence of the company. I think it is one of the disadvantages of youth (and I believe I may classify myself as one of those young men to whom the President referred, who were to be called upon to speak later), that youth has to glean where age has harvested, and I do not know exactly what I can say to you that has not been already said. Moreover, I feel the disadvantage of exhorting too vigorously in this matter, for I remember the precept that the exhorter should not prove to be a castaway (laughter), and it seems to me that the subsequent action might be expected to be in proportion to the vigor of the exhortation (laughter). I think that in everything that has been said to you, gentlemen, to-night there has been no exaggeration of statement or of appeal. I believe unquestionably that the profession should try to do all it can itself in this matter, and I have no doubt that if we set a good example ourselves we shall be able to preach to the laity with a more fruitful result. Then as to the means of doing that, it seems to me there is no stronger argument of our needs than to come here to the library itself. It speaks for itself. If any one asked, Where are your needs and what are your necessities? — if we could get him down here we should simply reply: Circumspice (Look about you). And it would be enough. Although classifying myself among the younger men here, I can still recall the beginnings of the library in Hamilton Place. I can look back and see stage by stage what has been accomplished since that day. I can recall the great need and want of just such an undertaking as was then started, and, seeing what has been accomplished, I am impressed with the feeling to-day that the outlook for our doing still a great deal more than has been done is certainly more hopeful than it was at that time for accomplishing what we have accomplished up to the present moment. I have no doubt if the men who are to-day of about the same age and period that those men were who took up this matter at that time will take it up with the same interest and vigor they did then that we shall be able to push our aims forward to a most satisfactory conclusion.

There is one point which has come home to me as a trustee of the Boston Athenæum and a member of the Library Committee there, and that was the transfer of all the medical books of the Boston Athenæum to this library. It is a fact that in 1826, I think, perhaps seventy odd years ago, the books of The Second Social or Boston Medical Library, which was started in 1805, were transferred, after a somewhat languishing period of existence of that body, to the Athenæum, and formed the nucleus of what subsequently became the medical department of the Athenæum. Now the Athenæum has gone on since that time purchasing a certain quantity of medical books up to within a few years, and Dr. Cheever referred to the fact that he used to go to the Athenæum — that was one of the sources of medical books at one time for him. Now it is only within a year or two that the Athenæum has transferred all its medical books to this medical library, recognizing that this was the depot and centre of medical literature for this State, for this neighborhood, and they have given up buying any more medical books. In the same way they are carrying out the same method with reference to books on law. They consider that the library of the Bar Association should be the depository for a special class of books of that kind. Now that shows what the general feeling in the community is getting to be. There are to be special literary centres, and we are being recognized as the custodians and guardians of medical learning. I think we can present ourselves now to the community in that way; that is already becoming recognized. We have duties; we have responsibilities in that direction, and it is right and proper that we should be aided and helped by the community in discharging those duties and responsibilities now that the public itself puts such duties and responsibilities upon us. We can go to men and state our position from that point of view and I think it will be listened to.

Dr. Holmes in that delightful address which he delivered when we inaugurated this building, some seventeen years ago, told us that it was our duty to offer the widest and largest hospitality to medical literature of all kinds, and we certainly have endeavored to live up to that injunction; but the result of our trying to live up to that injunction is that we have outgrown these premises by our accumulations, even in these seventeen years, and at that time apparently we considered that we were pretty well fixed for a long time to come. He also, I remember, spoke of its being one of our duties by our collection of books on medical learning to illuminate all the dark places, and in that way to antagonize those pseudological fancies which had, and I regret to say still have, a tendency to flourish in this community. We may do our best to illuminate all the dark places, but as fast as we unhorse one pseudological fancy another leaps into the saddle and rides more recklessly, so that if we are going to carry out that injunction we shall certainly require all the accommodation for learning and literature that we can possibly attain unto. I think Dr. Warren's suggestion to you — that this library should be regarded as a post-graduate medical school — was also a very good one, and I think that is another argument with which we can go to the people outside of the profession, and which ought to prove effective.

In closing I would merely give expression to one thought which perhaps is sometimes overlooked, that is, that we may regard this library as a sort of medical literary storage-warehouse. It does relieve all of us of a great burden in that respect. I don't know but that point comes home to me perhaps a little more strongly than to most of you, but my main object is to get rid of books and periodicals rather than to acquire them, and it is quite as much a question with me of the advantage of being able to put books and periodicals into the library as of the advantage of being able to take them out. That is rather a homely consideration but a practical one, and one we ought to take home to ourselves in considering the many things that the library does for us.

The President: I am sure that we have received some new ideas. I hope they will germinate. We do not, however, wish to confine ourselves only to native talent, but we want to think of other places. There are other cities than Boston in America. Some of them have fine libraries, and in some of them the medical profession is in a very flourishing condition. We are fortunate, I think, in having with us now a gentleman who has seen a good deal of other places, and who can tell us what he thinks had better be done to help us on here in Boston. I would ask Dr. Councilman if he would say a few words.

Dr. W. T. Councilman: I feel in Boston not as one coming from a strange city, Mr. President, but already as one of the oldest inhabitants. With regard to the medical library, I can only speak of the enormous service the library has been to me and to the men working in the laboratories here. The special value of the library is in its sets of journals and monographs; those are absolutely necessary for any one doing scientific work, and very necessary frequently to have them almost immediately at hand, and we have found this library really invaluable to us. I am very much in sympathy with the idea of a new home for the profession, because I understand that the new building which it is proposed to erect will not only be a library but serve as a medical centre of the profession in the city, will be more or less of a medical home where the various societies can meet and where the men can go, and I feel sure also that the medical profession will do a great deal towards raising the amount of money necessary for the building. I don't think that they should be called upon to raise all, but certainly the medical profession themselves should contribute very largely to that building, because the success of the men in the profession is very largely due to this library, and I believe that the profession will recognize that.

The President: We must have in this movement the co-operation of what Dr. Henry J. Bigelow used to call the "active young men," and I would ask you to listen for a moment to a statement of one of the younger members in regard to the value of this library and what the younger members can do for it. I will ask Dr. Frederic J. Cotton to speak.

Dr. Frederic J. Cotton: I can only give my testimony as to the actual working efficiency of the library. This has impressed itself on me, especially in comparing the conditions here with those in Vienna. While there, in the preparation of a paper, I had to look up with some care the literature of a special subject. First, I went to the hospital library, a subscripton reading-room, much used, which contains the current numbers and files of the standard periodicals. The French literature is, however, poorly represented, the Italian hardly at all, and the English and American by one periodical, the *British Medical Journal*, I think. Consequently, there were many references I did not get.

After that I went to the University, and found the books there rather difficult of access, and the cataloging rather unhandy for the stranger. I finally got, after two or three visits, only two or three volumes I wanted.

The best library in Vienna is that of the Gesellschaft der Aerzte, but that is not open to the general public. I therefore submitted my list through a friend who is a member of the society, but got nothing I had not previously seen. The Hof-Bibliothek I did not try, as this same friend told me I should find few or no periodicals there.

In the end, I had to publish with a comparatively faulty knowledge of the work previously done on the subject, and my bibliography was confessedly incomplete. I do not know that I could have gotten all my references at the medical library here, but I do know that I should not have had to spend a week or more hunting for them, and if they were not here I could have gotten them from Washington through the medical library at little expense of time or money.

Among the men whose work here I know, I recall but one case where a man has not in some way gotten what he wanted by asking Dr. Brigham. That is a case where he could not get a volume from Washington — it was too large to send.

This comparison of our facilities with those of such a medical centre as Vienna is certainly gratifying, and it seems to me we should not forget, in using the library, to take a certain pride in its efficiency.

Dr. Warren: Dr. Chadwick alluded to the other libraries, instancing the one at Washington, the College of Physicians and Surgeons in Philadelphia, and the Academy of Medicine in New York. I think any one who has visited those institutions will see at once the immense advantage of having a medical centre in a large city. The College of Physicians and Surgeons is a very old and highly respected institution and the rallying point of the profession in Philadelphia and perhaps of the whole State of Pennsylvania. The Academy in New York is a most luxurious place, where all kinds of society meetings can be held, gatherings of medical men of whatever nature, and has every comfort and convenience, and it seems to me that not only from the educational point of view but, to a certain extent, from a business and perhaps also a social point of view they are of incalculable advantage. I can see how a house like that would be a gathering point where the physicians of the city and those of the suburbs, who are so numerous as Dr. Cheever has pointed out, could meet. Men coming from distant parts of the State would come here and make their purchases, have their purchases perhaps sent to this place, stop and read the latest literature and see many of the men. I can see how the library could conduct a series of educational lectures open to the profession at large — medical smoke talks. The field enlarges very greatly when one begins to see what the possibilities of such a building are.

Dr. Chadwick: I think perhaps it ought to be explained what this Committee on Site means. We have a site on the corner of Garrison and Botolph Streets which we have held nearly ten years. When we bought it we believed, and most of us still believe, it is a very good site, probably as good a site as this Association can afford. There are, however, quite a number of men who have thought the site was not worthy of the Association, and that it would not be convenient, so we have thought it better at the outset not to have it supposed that we were wedded to that site. There are changes taking place. It is possible that a better site may be obtained which will be within our means. We therefore wish it understood that while we have had sketches made for the building on the lot on Garrison Street, we are not wedded to it, and wish the committee to go over the ground and see if a better site can be secured. That is the reason for the appointment of that committee.

The President: Are you ready for the question? Those in favor of the passage of these resolutions will please raise their hands. Contrary minded. It is a unanimous vote. In accord with the resolutions the President is called upon to announce the committee, which consists first of the officers of the Society, the Executive Committee, and the following gentlemen: Drs. J. C. Warren, J. C. White, H. P. Bowditch, Clarence J. Blake, F. C. Shattuck, A. T. Cabot, G. W. Gay, Harold Williams, H. L. Burrell, A. K. Stone, W. N. Bullard, M. Storer, J. A. Tanner, E. H. Stevens, H. F. Hewes, making with the Executive Committee and the officers of the Society, twenty-five. The appointment of the gentlemen who are to serve as an executive committee of five can very well come later; but it is important that the President should announce the committee of three on the site, so that they may be busily at work looking about to see if they can find any better location, as Dr. Chadwick says, *within our means.* The Committee on the Site will consist of Drs. J. B. Ayer, Arthur H. Nichols and W. L. Burrage.

Recent Literature.

Materia Medica, Pharmacy and Therapeutics. By W. Hale White, M.D., F.R.C.P., Physician to and Lecturer on Pharmacology and Therapeutics at Guy's Hospital, London. Edited by R. W. Wilcox, M.A., M.D., LL.D., Professor of Medicine and Therapeutics at the New York Post-Graduate Medical School. Fourth American edition. Philadelphia: P. Blakiston, Son & Co. 1898.

This book is a model of its kind. It gives a concise and thorough review of the subject of materia medica, just such an one as should be of most use to the physician in practical work. The therapeutics is thoroughly modern, and quite as practical as the conditions of a work upon therapeutics pure and simple allow. The text includes chapters upon the antitoxins and preparations of animal tissues.

The classification of the drugs is simple and thoroughly scientific. In some features it is entirely original. In the first section of the work the drugs are grouped in accordance with their physiological action. In this section the drugs which have an action capable of being utilized in medicine upon a certain organ or function are grouped together. These groups are then subdivided in accordance with the specific nature of their action upon the functions affected, whether stimulant or depressant, for instance. Then a brief review of the therapeutic action of each sub-group, as diaphoretics and anhidrotics, etc., is given.

In the second section, which comprises the bulk of the work, the drugs are classified on the basis of their chemistry, and each drug fully described. In this section the materia is first divided into the inorganic and organic substances, and the latter then divided into drugs of vegetable origin and drugs of animal origin.

Finally, the book is provided with a very accurate and thorough index.

Manual of the Diseases of Children. By John Madison Taylor, A.M., M.D., Professor of Diseases of Children, Philadelphia Polyclinic; Assistant Physician to the Children's Hospital and to the Orthopedic Hospital; Neurologist to the Howard Hospital; Consulting Physician to the Elwyn and to the Vineland Training Schools for Feeble-Minded Children; Fellow of the College of Physicians of Philadelphia, etc., and William Wells, M.D., Adjunct Professor of Obstetrics and Diseases of Infancy, Medical College of Philadelphia; Fellow of the College of Physicians of Philadelphia; Member of the Philadelphia Pediatric Society, etc. Illustrated. Philadelphia: P. Blakiston, Son & Co. 1898.

The authors, as they state in their preface, do not claim that their book is a treatise on the maladies of childhood.

They have written a concise book of seven hundred and twenty-eight pages, quoting largely from other writers and not offering much that is original. The illustrations are especially clear and good.

The book is valuable in that it presents, in a not too condensed form, as a rule, the latest views on the subject of disease in children written by authors who are both modest and exact in their statements.

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DR. T. CLIFFORD ALLBUTT AND NINETEENTH CENTURY MEDICINE.

COMING as it does at the very close of a century, the last half of which has been so rich in the acquisition of exact medical knowledge, Dr. Allbutt's recent brilliant lecture[1] before the Johns Hopkins University is most timely and valuable, and should meet with universal attention and consideration on the part of American physicians. It represents the thoughts of the ideal type of medical mind, broad, judicial, widely-cultivated, and is most happily free from those uniformly eulogistic tendencies ordinarily so characteristic of an address on the subject chosen. Dr. Allbutt has preferred not to proclaim loudly our triumphs, but to suggest the lines along which these triumphs may be extended. This he has accomplished by a comprehensive and diversified exposition of our natural limitations.

From beginning to end of the discourse the broadly philosophical attitude of the speaker toward his subject is manifest, and his plea for the conservation of dialectics must come somewhat in the nature of a surprise to those medical scientists who pride themselves on their strict adherence to so-called fact as opposed to theory.

Altogether there are so many interesting topics discussed that it is impossible to comment upon all. The one which is of most interest is that which deals with the education of the physician. On this subject Dr. Allbutt is peculiarly qualified to speak and his views are in refreshing opposition to the headlong utilitarianism of the present day.

Starting with the idea that our calling should not concern itself solely with ministration to the carnal body — "a higher kind of farriery" — he outlines the course of training, preliminary and other, best adapted to fit a youth for a medical career. By the boy destined to become a surgeon, manual dexterity should be acquired by training in a mechanical art. Another useful means of education in early life is that of measurement. Youths should learn to measure accurately to thousandths of an inch and to hundredths of a grain; "thus the eye is taught with the hand, and, what is of more importance, the mind is trained to know what accuracy means."

Of the sciences Dr. Allbutt selects, as best adapted to the natural proclivities of the youthful mind, those of memory and observation. Imagination rather than abstract thought should be cultivated. To this end the youth should be encouraged to collect natural objects, since thus he is drawn into the haunts of animals and the habitations of plants. An education limited to abstract science is, in Dr. Allbutt's opinion, not the ideal thing it is now so generally thought to be. Like Rousseau, he would not teach children the sciences, but give them the taste for science. For breadth of mind we should fortify instruction in the humanities and in letters. As man still spends the greater portion of his life in the expression of his thoughts and in converse with mankind, he should learn "to handle the ideas which concern himself and his fellows not only in their *material* conflict with nature but also in those higher spheres of history, ethics, politics and social aspirations for which alone man can be said to properly live." For such a degree of cultivation mere polytechnic institutions cannot suffice; it must come from the university.

To Dr. Allbutt the uses of learning Latin and Greek lie in this — "that in those studies, more than in any others, the ideas that concern man in his highest endowments of mental, spiritual and social life are manifest, and not only so, but are manifested in languages the most virile and beautiful the world has known." To the utilitarian's objection that they are dead languages, his answer is: "If so, the Hermes of Praxiteles and the Venus of Milo are corpses." His attitude toward the man of one language reminds us of the Italian saying concerning the man of one book — *guardati da colui che non ha letto che un libro solo.* Even with his great love for the classics, he does not fail to render due homage to the other shrines of letters, not only from the point of view of beauty but of common usefulness.

On the lecture system Dr. Allbutt says much that is worthy of attention. He does not consider it an unmixed evil. On the contrary he believes that — "In lectures we may still find the virtues which flow from living converse with thoughtful men who have been over the field of our studies before us, who can show us how their minds worked, how they systematized their knowledge, how they came to see it in the light of other researches, how they inspired it with human interest." To fulfil the requirements, however, the lecturer must not be "a mere retail dealer in knowledge." For beginners he must be the leader in his faculty; demonstrators can best handle older men and advanced work.

The remainder of the speaker's views on the general subject of education lead up to this final spirited expression of his medical ideal: "The physician, then, is more than a naturalist; he is the minister not only of humanity at large, but of man himself. Thus it is that the humblest of us, and he who labors in the darkest and most thankless parts of our cities, is never a drudge; in the sight of the angels he is illustrious by the light of his service to men and women. The man of science can tell us delightful things about birds, flowers and wild life, for all life is various and touching; he can tell us queer and uncomfortable things about our insides, amazingly useful things about steam and electricity, but at bottom, when the marvel is over, or the material gain is won, all this grows stale. Ideas concerning the harmony of the spheres, concerning cosmic evolution, concerning the inhabitants of Mars, are prodigious; they may uplift us sometimes with a sense of the greatness of man's inheritance, but alone they are cold and unsatisfying. The child of his age feels that a sonnet of Wordsworth, a flash of Browning's lamp into a man's heart, an idyll of Tennyson give us thoughts worth more than all the billions of whirling stones in the universe. In strengthening and cherishing this inner life of his brother and sister, happily, the physician has many fellows, but the physician alone among them all holds sacred the lamp of the personal life for its own individual sake; he alone forgets Church, State, nay, even the human race itself, in his tender care for the suffering man and for the suffering woman who come to him for help."

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[1] Philadelphia Medical Journal.

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TENDENCIES IN MEDICAL JOURNALISM.

[We have asked several members of the JOURNAL's staff and others to furnish contributions in editorial form on this subject. The ideas and opinions advanced will necessarily vary somewhat in form and substance. We desire to see the question put from different points of view, and while not necessarily going as far as each writer in every statement made, the general positions taken will be such as may be regarded as tenable. These communications will be signed with the writers' initials. — Ed.]

That we are in a transition stage in many things is sufficiently self-evident to one who follows the trend of medical thought. By degrees we are emancipating ourselves from old ideas, and coming to realize that changes, however unwelcome at the time, are, on the whole, beneficent. One idea, to which certain persons are still clinging, is that specialism is a mushroom growth, which is to be tolerated, but not encouraged. We still hear faint voices raised at annual dinners and similar gatherings urging upon the young aspirant for medical fame that he will do well to wait ten valuable years before taking up his specialty; that no specialist can really succeed unless he be first a general practitioner, whatever that may mean. Such post-prandial talk is often entertaining, but, so far as we can see, never corresponds to facts, and is quite out of keeping with the spirit of the time. When all is said, the hard fact remains that, for good or evil, specialism is here to stay, and that he who is to make any mark in his day and generation must not delay too long in plunging into the intricacies which every special subject offers.

If this be the case, it is clear that medical journalism must be undergoing a similar change, for a journal merely represents the dominant tendencies of the time, and is the permanent expression of such tendencies. A most superficial analysis then makes one thing clearly evident, and that is, that when men are working in special fields they must have a special channel of expression for their work, and that channel inevitably lies in the so-called special journal. The multiplication of such journals during the past few years in America is sufficient demonstration of the correctness of the fact. The reasons that a man rightly gives for seeking a special journal for the publication of his researches are, first, that his work will there be appreciated and read by those men who alone have an intelligent interest in it, namely, his co-workers in the same field; and in the second place, because his work is, as a rule, more conscientiously published by a journal of special character. No doubt there are many less fundamental reasons which exert their influence in any given case, but, in general, a man who knows he is doing good work is inherently desirous that his labor should be appreciated, and such full appreciation is only gained by proper publication both as to place and form. It must be published in the right journal, and it must be published well.

Not long since it was our privilege to take part in a discussion with several investigators of distinction, on this very point. They insisted that it was eminently desirable that the results of investigation should always be published in the same place, and in a periodical which was known to be confined essentially to that given line of work, whatever it might be, whether physiology or anatomy or neurology or anything else in the broad field of specialized subjects. In this way ease of reference is attained, which is an inestimable advantage. For this reason, we find the special journal growing constantly in favor. A new one appears almost every year in America, and in spite of the protest that we already have more than enough, it meets with favor in the group of men to whom it is primarily addressed, and at once secures a firm place for itself. It is interesting to note how few good special journals are failures. They succeed for the reason that the specialist succeeds, because there is the same need in the community for the one as for the other. The old adage is true here, as always, that "There is room at the top," and the special journal represents the acme of journalistic enterprise. Until each field of research has its separate publication we may be sure that there is something lacking in the enthusiasm of workers in that field. One of the most hopeful signs of the times, on the other hand, is the increase of such periodicals, provided only they are excellent both in form and matter.

The other point worthy of comment is the fact that the presswork, illustrating and mechanical part generally, are better done in the more exclusive journal. The reasons for this are not far to seek: first, they are not conducted as business enterprises, and their success, therefore, depends solely upon the character of their work, and the quality of the papers offered them for publication. To get the best that is written, they must publish a journal pleasing to the eye and esthetic sense generally, for, whatever may be said to the contrary, the writer requires that the product of his labor shall be offered to the reading public in the best possible form.

All this has encouraged careful research work, and the writing of monographic papers, which, again, is an absolute necessity of real medical progress. The progressive special journal does not stick at length provided only the quality be of the best.

Accepting, then, the fact of this perfectly apparent tendency in medical journalism, we may well ask ourselves what is to be the future of the weekly journal, which has so long held sway among physicians of whatsoever line of practice? Not many years ago these journals were the sole organs of medical opinion. To them went communications of all sorts, which they were glad to accept and publish. Their field has been gradually curtailed, as has that of the so-called general practitioner of medicine, until now they find themselves cut off from much that a few years ago would, as a matter of course, have come to them. This should be welcomed as a sign of growth; it does not for a moment mean that the weekly journal is losing its influence or being thrust to the wall, but merely that it is assuming its proper place, and the place which, from the first, it would have occupied had it been allowed. The weekly journal, from its very scope, can not and does not wish to publish lengthy articles, which have only a special interest. It cannot afford the space for monographs, nor for the elaborate illustrations and tables which form so essential a part of the value of such productions. On the other hand, such a journal disclaims the commonly made distinction between scientific and clinical. It wishes scientific work of a proper sort always, whether it be the product of a laboratory investigation or observations at the bedside. There is no conflict here between the special journal and the general journal; it is simply a natural parting of the ways, in which each might and should be of benefit to the other — and surely there is material enough for all.

To our mind the weekly journal has another and even more important function to perform than the publication of original papers, and one which is of continually growing importance, not only to the medical profession but to the community at large. We refer to the power it has, or should have, in influencing public opinion toward high standards of ethics in medical matters and hygiene in the broad sense. This is the sole prerogative of the weekly medical journal, and one of the directions toward which it is more and more tending. Here we have a field of usefulness which is quite unlimited and which may, no doubt, be cultivated much more assiduously than it has been up to this time. A good sign in this direction was the active participation of our leading weekly medical journals in the discussion growing out of the medical management of the army in the recent war with Spain. Acrimonious as certain of these discussions were, they all tended toward a good end, namely, a clear expression of opinion on a point of public importance. As most of our religious contemporaries have left the bounds of the strictly churchly and entered a larger sphere of human interest, so may we look for an expansion of the scope of the medical journal to include matters of public concern which are in any way associated with the progress of medicine. The tendency in the future will be toward a closer scrutiny of the editorial pages and a demand for a definite expression of opinion on topics of general public concern. Here lies the opportunity of the weekly journal, and its success will depend upon the clear appreciation of this fact by its editors. If we can rise to this opportunity we shall never lack for readers, and we shall be offering to them matter of extreme practical importance, which they will find nowhere else.

In addition to the publication of suitable papers and editorial matter of public interest, the weekly journal undoubtedly has an important function in the dissemination of medical news. Our readers will always want to know what is going on elsewhere, what is being written, and who is writing it. We should be cosmopolitan and not local.

These, to our minds, are certain visible tendencies of the times; first, the growth of the special journal, and secondly, the expansion of the weekly journal in a direction of general, broad-minded usefulness in all matters relating to the practical and less technical fields of medicine. The ideal is a high one, but in its attainment we think will lie the strength of the weekly medical journal in the years to come.

E. W. T.

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MEDICAL NOTES.

DYSENTERY IN JAPAN.— Reports to the Surgeon-General of the United States Marine-Hospital Service state that during the period from October 21 to November 17, 1898, there were 9,746 cases of dysentery and 2,856 deaths. The entire Empire now seems to be saturated with the poison of this disease, and its annual recurrence may be fairly anticipated.

THE PROGNOSIS IN ALOPECIA. — A dermatologist began a paper on alopecia as follows: "Faith is usually pictured as a maiden clinging convulsively to the rock of ages. I think a more impressive representation would be that of a bald-headed patient rubbing vigorously into his scalp the remedy prescribed by the bald-headed specialist in skin diseases." — *Medical News.*

FAITH CURIST DIES OF BURNS.— From Omaha it is reported that a female "Faith Curist" was so badly burned by the explosion of boiling turpentine on a stove that she died from the effect of her injuries. Her husband and two sons were also slightly burned. The members of the family are Christian Scientists, and refused medical assistance. Great reticence has been observed, and only members of the Christian Science faith were admitted to the residence.

Lectures on Teratology and Antenatal Pathology. — On the recommendation of the Medical Faculty and Senatus of the University of Edinburgh, and with the permission of the University Court, Dr. J. W. Ballantyne, Lecturer on Midwifery and Gynecology in the Medical College for Women, Minto House, will deliver a series of Six Lectures on Teratology and Antenatal Pathology at the University.

Medical Journalism as She is Conducted.— One of our contributors has forwarded us a letter which he has received from a so-called medical journal published in a Southern State, complimenting him upon an article which has appeared in the Journal, and offering a complimentary subscription for three years, if he will send an article within a month on one of several specified subjects. Special literature will be furnished by the manufacturers, also unlimited quantities of their products for clinical trial. Comment on such a proceeding is superfluous!

The Revision of the United States Pharmacopœia. — The committee on United States Pharmacopœia of the Medical Society of the State of New York have issued a circular asking aid in its efforts to stimulate a greater interest in the approaching revision of that book, and have formulated six propositions upon which they request comments. The following are the propositions: (1) that all drugs and preparations not now prescribed to any extent by physicians be dismissed; (2) that all chemical drugs necessary to other preparations, but which are not directly prescribed, be placed in a list apart from the body of the work; (3) that doses be included in the next revision; (4) that doses be placed in the index rather than in the text of the book, in order to secure reference and to avoid making them official; (5) that a section be devoted to giving reliable information concerning new remedies, without in any sense making them official: (6) that an annual supplement of a few pages, for the purpose of continuing similar disinterested information concerning new drugs, be issued.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, January 4, 1899, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 52, scarlet fever 18, measles 136, typhoid fever 3.

A Farm for the Massachusetts School for the Feeble Minded. — The State of Massachusetts has purchased a farm of 1,660 acres in Baldwinville, Mass., which is to be used as an addition to the School for the Feeble Minded, at Waltham. The adult inmates of the school who are able to perform physical labor will be given useful employment on this farm, an object which has long been aimed at by Dr. Walter E. Fernald, the superintendent of the school. The completion of the work upon the present property left a large number of inmates without useful employment, and the wisdom of the State in providing employment for them is shown by the fact that they have, by performing the rough work on the present school grounds in Waltham, saved the State a large sum of money.

Ice and Typhoid Fever. — The *Woburn Journal*, Friday, December 30th, thus comments: "In the marked editorial in the *Boston Medical and Surgical Journal*, December 23d, from which the above is clipped, many other causes of typhoid fever are enumerated, but as they do not directly concern this community only that of ice is named. A large part of what is written and said about disease germs is mere theory unsupported by actual facts, with a good deal of humbug worked into it. To sustain this view of the case it can be stated absolutely and substantiated by proof that no town or city in the Commonwealth has less typhoid fever than Woburn, and all the ice consumed by its people comes from Horn Pond. It is probably true that other places are as exempt from that disease as we are. We state a fact, an important one, and it is worth more than all the theories under the sun. All of Woburn's water and ice come from Horn Pond, and nowhere can a healthier city be found. Theories are well enough for those who like them, but facts are better."

In the next column of the same paper we find the following note which is of interest in connection with the above: "Crowds of people improved the good skating on Horn Pond last Monday and everybody had a rollicking good time."

We have no doubt some members of the crowd expectorated bacteria and tobacco juice freely on the surface of Woburn's Ice Supply.

NEW YORK.

A Government Medical Supply Depot. — The government has leased for a term of ten years and seven months a recently constructed six-story building, at the corner of Washington and Hubert Streets, for the use of the Surgeon-General's Department as a medical supply depot, under the supervision of Lieut.-Col. J. Morris Brown.

Enforced Idleness and Insanity. — On December 23d six convicts from the King's County Penitentiary, Brooklyn, were transferred to insane asylums, two of them, Federal prisoners, being sent to the National Insane Asylum at Washington, and the other four to the State Hospital for Insane Criminals at Matteawan, Dutchess County. It is said that the men were rendered insane by enforced idleness, and that during the past year more than a dozen inmates of the penitentiary have become insane from the same cause. One of the officials of the institution makes the statement that until the passage of the law doing away with convict labor there had not been a case of insanity among the prisoners for years, and this, too, during a period when there were twice as many men in the prison as at present.

Death at the Age of One Hundred and Eight. — Patrick Haggerty died near Malone, N. Y., at an unusual age. Mr. Haggerty had the good luck to be born on St. Patrick's day, and if he had lived until March 17th next would have completed his one hundred and ninth year.

Death of Dr. F. A. Bottome.—Dr. Frank Archer Bottome died in Harlem on December 20th, of pneumonia, in the thirty-third year of his age. He was a son of the late Rev. Francis Bottome, and was born in Bridgeport, Conn. He studied medicine both in Germany and the United States, and was graduated from the College of Physicians and Surgeons, New York, in 1889.

Death of Dr. Robert B. Baisley. — Dr. Robert B. Baisley, an old practitioner of East Rockaway, Borough of Queens, died on December 17th. He was born in Flatbush, Brooklyn, and was a graduate of the College of Physicians and Surgeons, New York. He settled at East Rockaway in 1850.

Death of Dr. C. H. McNeil. — Dr. C. Holmes McNeil, who had been a member of the Jersey City Board of Health for three terms, died at his home on Jersey City Heights on December 18th, of cardiac disease. He was graduated from the Medical Department of the University of the City of New York in 1861.

Influenza in New York. — Influenza began to be prevalent in November, and during that month twelve deaths were attributed to it in the records of vital statistics, which is, in fact, the largest mortality from the disease for any November since 1891, when there were thirteen deaths reported. It was not, however, until the third week of December that it became generally epidemic and attracted the attention of the daily newspapers. In the Boroughs of Manhattan and the Bronx there were reported on December 18th 7 deaths from influenza and 20 deaths from pneumonia: on December 19th 5 from influenza and 16 from pneumonia; on December 20th 9 from influenza and 24 from pneumonia; on December 21st 11 from influenza and 21 from pneumonia; on December 22d 10 from influenza and 30 from pneumonia; and on December 23d 10 from influenza and 17 from pneumonia. Since the latter date the mortality has progressively diminished and the number of cases of influenza, as far as can be ascertained, has rapidly fallen off. The aggravation of the disorder seems to have been due mainly to specially unfavorable atmospheric conditions, and the amelioration followed immediately upon the advent of clear, dry weather. It is stated that as many as 45,000 children were kept away from the public schools by sickness last week, and on Saturday the Board of Health ordered, as a matter of precaution, that during the Christmas holidays all the school buildings should be thoroughly cleansed and disinfected.

The Increase in the Colored Race. — Among the numerous scientific bodies holding their annual meetings in Christmas week were the Association of American Anatomists, the American Physiological Society, the American Psychological Association, the American Chemical Society, and the Anthropological Section of the American Association for the Advancement of Science. At a session of the latter, held December 27th, Dr. Ales Hrdlicka, of the New York State Pathological Institute, read a paper on "The Present and Future of the Negro Race in America," in which he stated that statistics show that for every thousand childbearing women in the country there are sixteen more children born among the blacks than among the whites, the exact figures being 120.73 to 104.20; though this difference is more or less offset by the greater mortality among the blacks. He expressed the opinion, however, that with the advance of knowledge and a more frequent resort to proper medical treatment the average life of the negro would be lengthened.

Physical Culture at our Colleges. — The second annual meeting of the Society of College Gymnasium Directors was held at Columbia University on December 30th, and among the papers read were the following: "Hygienic Value of Strength Tests," by Dr. D. A. Sargent, of Harvard; "The College Athletic Trainer," by Dr. J. W. Seaver, of Yale; "What Do We Mean by Physical Training?" by Dr. J. B. Crenshaw, of Johns Hopkins; and "Some Tangible Results of Gymnastics," by Wm. G. Anderson, of Yale.

Male Births Increasing. — The statistics of the Health Department show that there has of late been a marked increase in the relative number of male births, but whether this is due to the influence of the recent war must be left to conjecture. During the last two days of October and the thirty days of November there were 2,055 male births and 1,896 female births reported, and in the first seventeen days of December, 1,259 male births and 1,138 female births in the Boroughs of Manhattan and the Bronx. This is a ratio of 53 boys to 47 girls, while the normal ratio is 51 boys to 49 girls.

The Society of Medical Jurisprudence. — At a meeting of the Society of Medical Jurisprudence held December 12th the paper of the evening was by Judge John Woodward, of the Appellate Division of the Supreme Court, on "Medical Expert Testimony; A Defence of the Present Procedure." In it he contended that the abuses which have been noted were due not to the system itself but to the public lassitude that allowed the abuses to continue uncorrected. A radical change, he thought, was neither desirable nor possible. Every system of evidence must admit expert testimony, and all expert testimony was subject to human limitations. The medical profession ought to exalt the expert by investing in him as their representative all the dignity of his order. The law should see that no fee was dependent upon an opinion, and that no man or corporation should have power over the subsistence of another. If an absolute but moderate fee could be established, he believed that the State should pay on both sides in criminal cases. Theoretically, the appointment of a public expert or of an expert commission looked well, but he feared that in our political system such appointments would soon be made for party service and through political favoritism.

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THERAPEUTIC NOTES.

A Mouth Wash for Aphthæ in Children.[1] — The ulcerations are to be touched four or five times per day with a brush rubbed in the following:

℞ Sodium biborate . . . . ʒ i
Tinct. myrrhæ . . . . ʒ ii
Blackberry syrup . . . . ℥ x

According to Radestoek,[2] the generally accepted dosage of potassium iodide in syphilis is rather too small. In one case he administered as much as 375 grains in one day, and has frequently given daily doses ranging from 150 to 225 grains. When well dissolved the salt becomes perfectly harmless for the stomach. In view of the high price of the salt, he thinks that iodine could be administered diluted in a syrup or wine. He recommends for this purpose Brown-Sequard's solution:

℞ Iodini . . . . gr. vi
Potass. iodidi . . . . ʒ ss
Aq. destil. . . . . ℥ iss
M. Sig. A teaspoonful three times a day in a glass of wine before meals.[3]

Removal of Warts. — Widal recommends in the *Journal de Médecine de Paris* a very simple method for the removal of warts, namely, a flannel over which is spread some sapo viridis, placed over the wart for a period of fourteen days, by the end of which time the wart will become so soft as to be easily shelled out.[4]

Treatment of Favus of the Hairy Scalp. — As far as prophylaxis is concerned, general cleanliness, and especially as regards the head, is of very great importance. As treatment O. v. Petersen[5] considers it necessary first to soften the scabs with a one-per-cent. carbolated vaseline ointment, which renders their removal very easy. This repeated several times makes the head clean, after which the diseased area is painted over with iodine tincture. In view of a possible strong reaction after the application of the iodine, the intervals between the applications are lengthened. Epilation is not necessary.[6]

Hamm[7] is very enthusiastic over the application of the ether spray in the treatment of neuralgia and localized headaches, claiming to have obtained with it very good results. One application is usually sufficient, and only when a recurrence is apprehended is a repetition of the procedure called for. The ether is atomized and spreads over in a thin layer, without ever causing any deleterious effect on the surrounding skin. It is, however, not necessary to continue the spray long.[8]

For Cocaine Poisoning.[9]—

℞ Amyl nitrite } āā . . . . ʒ i
Spir. vin. }
M. Et sig. Inhale the vapors thus produced.

Correspondence.

VENEREAL ARTHROPATHIES.

Boston, December 25, 1898.

Mr. Editor: — In the December ('98) number of the *Annals of Surgery* an article appears by Stewart LeRoy McCurdy, of Pittsburg, entitled "Venereal Arthropathies," which it seems to me is likely to give an incorrect idea of the importance of gonorrhea and syphilis as etiological factors in the causation of adult joint diseases. The writer states as his belief that a great majority of the men who went through the Civil War contracted syphilis, and in consequence of that the writer thinks it not improbable that a great many cases of Pott's and hip disease in children, which we have been in the habit of considering tubercular affections, if not wholly due to syphilis, are at least mixed infections of tuberculosis and syphilis. There can be no doubt that both gonorrhea and syphilis are concerned to some extent in the production of certain of the adult arthropathies, but I am sure that many of the statements made in the article referred to cannot be proven.

The citation of a few cases of undoubted gonorrheal joint affections is a fallacious way of proving its very great frequency in causing the arthropathies of adults.

Judging from the observation of a considerable number of adult joints coming to the Orthopedic Clinic of the Carney Hospital and the Boston Dispensary, I feel very sure that those in which gonorrhea is a cause would form a small proportion of the whole, whereas those caused by syphilis would be very much less. The great bulk of such cases is produced by tuberculosis, osteo-arthritis or rheumatoid arthritis.

Pathological findings afford the only real ground for diagnosis.

If the author of the article in the *Annals* holds the correct views it could not be otherwise than that a certain number of these syphilitic joints should come to excision through mistaken diagnoses. If that were the case it would seem probable that the operator as well as the pathologist would have called attention to the error, for there is no resemblance between the lesions of syphilis, tuberculosis and gonorrhea, at least not if a fair opportunity of examination is afforded the pathologist.

The evidence brought forward to substantiate the claim that inherited syphilis is concerned in the production of, the diseases of children now classed as Pott's and hip is even less convincing. The reports of Cases V, VI and VII are inadequate for the purpose. No mention is made of previous history, which ought to show a syphilitic taint in the family — it is not even apparent that the father went to the war. There is no symptom mentioned which could not go with a purely tubercular hip or Pott's disease, neither is there any reference to any sign or symptom which would suggest a syphilitic affection. When it comes to treatment, all three of these cases had appliances and were given at the same time antisyphilitic drugs, and it does not appear that they were any better off at the end of the treatment than are many cases that do not get iodide of potassium.

From the point of view of diagnosis, the substitution of a therapeutic test, especially when backed by such inconclusive evidence, for a pathological one seems a very hazardous undertaking, in the light of our present knowledge.

From the point of view of treatment, it is extremely illogical to attribute to a drug an amount of improvement which is to be expected, and does occur, under mechanical treatment alone, when both methods of treatment are applied simultaneously to the same cases. And, finally, from the etiological point of view, some weightier evidence than the assumption that an opportunity was afforded the soldiers in the Civil War to contract syphilis, of which a majority availed themselves, must be brought forward before this disease can take rank with tuberculosis as the etiological factor in the causation of about 25 per cent. of all surgical affections.

C. F. Painter, M.D.

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[1] Bulletin Général de Thérapeutique, November 15, 1898.
[2] Ther. Monatsheft, 10, 1898.
[3] Münch. med. Woch., November 29, 1898.
[4] Münch. med. Woch., No. 48, 1898.
[5] Arch. f. Dermatologie u. Syph., 43 Bd., 1898.
[6] Centralblatt f. d. ges. Therapie, December, 1898.
[7] Therap. Monatsch.
[8] Centralbl. f. d. ges. Therapie, December, 1898.
[9] Centralbl. f. d. ges. Therapie, December, 1898.

METEOROLOGICAL RECORD

For the week ending December 24th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...18	29.91	38	43	33	83	68	76	W.	W.	10	11	O.	C.	
M..10	30.30	30	38	21	49	47	48	N.	N.E.	15	6	C.	O.	
T...20	30.05	32	39	25	95	100	98	E.	N.W.	12	11	T.	R.	.34
W..21	29.94	34	38	29	97	95	96		N.E.		3	G.	G.	.03
T...22	29.99	40	46	34	96	100	98	W.	E.	4	9	O.	G.	
F...23	29.82	42	48	36	93	56	74	W.	W.	7	10	O.	C.	.48
S...24	30.14	40	48	33	72	57	64	S.W.	S.W.	10	8	C.	O.	
☞	30.02	37	43	30	84	75	79			8	8			.11

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, December 24, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup
New York	3,438,899	1446	390	6.37	23.94	.56	.84	2.80
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	233	56	7.31	20.21	.43	2.15	2.58
Baltimore	506,389	248	69	6.40	18.40	1.60	1.60	3.20
Cincinnati	405,000	120	—	5.95	7.65	—	5.10	.85
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	96	36	21.84	20.40	5.20	7.28	2.08
Washington	277,000	115	30	3.48	21.75	—	2.61	.87
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	66	14	1.52	21.28	—	—	—
Nashville	87,754	35	5	5 72	17.16	5.72	—	—
Charleston	65,165	37	3	2.70	13.50	2.70	—	—
Worcester	108,240	37	13	13.50	2.70	2.70	—	2.70
Fall River	95,919	38	16	5.26	26.30	5 26	—	—
Cambridge	89,724	23	7	13.05	4.35	4.35	4.35	4.35
Lowell	88,641	32	5	—	56.34	—	—	—
Lynn	66,703	15	—	6.66	—	—	—	—
New Bedford	66,340	11	3	—	9.09	—	—	—
Somerville	61,101	—	—	—	—	—	—	—
Lawrence	57,263	22	13	16.60	12.45	—	—	16.60
Springfield	56,501	24	4	4.16	12 48	—	—	—
Holyoke	43,424	13	3	—	12.58	—	—	—
Brockton	37,278	7	0	—	—	—	—	—
Salem	36,883	8	1	—	—	—	—	—
Malden	34,613	5	2	20.00	—	—	—	—
Chelsea	33,468	—	—	—	—	—	—	—
Haverhill	32,022	9	4	22.22	33.33	—	11.11	—
Gloucester	30,589	—	—	—	—	—	—	—
Newton	29,716	9	1	22.22	11.11	—	11.11	—
Fitchburg	29,438	4	3	25.00	—	—	—	—
Taunton	28,167	14	2	7.14	7.14	—	7.14	—
Everett	25,338	9	0	—	—	—	—	—
Quincy	23,549	6	4	—	66.66	—	—	—
Pittsfield	22,643	—	—	—	—	—	—	—
Waltham	21,812	7	2	14.28	—	—	14.28	—
North Adams	20,971	4	1	—	—	—	—	—
Chicopee	17,842	5	1	—	20.00	—	—	—
Medford	16,511	1	0	—	—	—	—	—
Newburyport	14,915	6	1	16.66	16 66	—	16.66	—
Melrose	14,032	4	0	—	25.00	—	—	—

Deaths reported 2,740; under five years of age 695; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 189, acute lung diseases 568, consumption 189, diphtheria and croup 65, typhoid fever 45, diarrheal diseases 25, scarlet fever 18, cerebro-spinal meningitis 14, whooping-cough 14, measles 7.

From scarlet fever New York 12, Pittsburg 2, Boston, Malden, Newton and Fitchburg 1 each. From cerebro-spinal meningitis New York 6, Boston and Worcester 3 each, Lynn and Springfield 1 each. From whooping-cough New York 7, Pittsburg 4, Providence and Haverhill 1 each. From measles New York 6, Pittsburg 1.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DECEMBER 29, 1898.

Wheeler, W. A., surgeon. To proceed to Cairo, Ill., and assume command of Service. December 28, 1898.

Kalloch, P. C., surgeon. Upon being relieved by Surgeon **W. A. Wheeler**, to proceed to Gulf Quarantine Station and assume command. December 28, 1898.

McIntosh, W. P., passed assistant surgeon. To report to the director of the Hygienic Laboratory for a course of instruction. December 27, 1898.

Smith, A. C., passed assistant surgeon. Upon being relieved by Surgeon **P. C. Kalloch**, to proceed to Norfolk, Va., and assume command of Service at that port. December 27, 1898.

Eager, J. M., passed assistant surgeon. To report to director of Hygienic Laboratory for a course of instruction. December 23, 1898.

Nydegger, J. A., passed assistant surgeon. Granted four days' leave. December 24, 1898.

Stewart, W. J. S., passed assistant surgeon. To rejoin station, Washington, D. C., immediately. December 29, 1898.

Hastings, Hill, assistant surgeon. Upon being relieved, to report to director of Hygienic Laboratory for a course of instruction. December 27, 1898.

Russell, H. C., assistant surgeon. Upon being relieved by Assistant Surgeon **D. E. Robinson**, to proceed to Louisville, Ky., for duty and assignment to quarters. December 27, 1898.

Billings, W. C., assistant surgeon. To report to Surgeon **J. H. White**, Immigration Depot, New York, N. Y., for duty. December 27, 1898.

Kerr, J. W., assistant surgeon. To report to medical officer in command at San Francisco, Cal., for duty and assignment to quarters. December 27, 1898.

Robinson, D. E., assistant surgeon. To report to medical officer in command at Chicago, Ill., for duty and assignment to quarters. December 27, 1898.

Corput, G. M., assistant surgeon. To assume command of Egmont Key Detention Camp. December 27, 1898.

Stevenson, J. W., acting assistant surgeon. To assume temporary charge of Service at Cincinnati, O. December 28, 1898.

APPOINTMENTS.

To be assistant surgeons:

Billings, William Chester, of Massachusetts, December 23, 1898.

Kerr, John Walter, of Ohio, December 23, 1898.

Robinson, Dana Elihu, of Ohio, December 23, 1898.

Corput, Gustave Maximillian, of Georgia, December 23, 1898.

RECENT DEATH.

Thomas Henry O'Connor, M.D., M.M.S.S., of Clinton, died in Nice, France, January 1, 1899, aged forty-one years.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Orthopedic Association, Twelfth Session, held at Boston, Mass., May 17, 18 and 19, 1898. Volume XI. Philadelphia: Published by the Association 1898.

The Relation of Suppuration to Shortening of the Limbs in Tuberculous Diseases of the Hip Joint; A Study of One Hundred and Six Cases. By Russell A. Hibbs, M.D. Reprint. 1898.

A Further Account of the Treatment of Aneurism by the Conjoint Use of Galvanism through Introduced Coiled Wire, Report of Cases. By D. D. Stewart, M.D., Philadelphia. Reprint. 1898.

Nursing: Its Principles and Practice for Hospital and Private Use. By Isabel Adams Hampton, Graduate of the New York Training School for Nurses attached to Bellevue Hospital; late Superintendent of Nurses and Principal of the Training School for Nurses, Johns Hopkins Hospital. Baltimore, Md., etc. Revised and enlarged. Illustrated. Philadelphia: W. B. Saunders. 1898.

On the Origin and Progress of Renal Surgery; with Special Reference to Stone in the Kidney and Ureter, and to the Surgical Treatment of Calculous Anuria, being the Hunterian Lectures for 1898, together with a Critical Examination of Subparietal Injuries of the Ureter. By Henry Morris, M.A., M.B., Lond., F.R.C.S., Senior Surgeon to the Middlesex Hospital; Examiner in Surgery in the University of London; Hunterian Professor of Surgery and Pathology, Royal College of Surgeons of England. Philadelphia: P. Blakiston, Son & Co. 1898.

Lecture.

PYONEPHROSIS, NEPHROLITHIASIS, HEMATURIA, PYURIA; SUBSEQUENT NEPHROTOMY; NEPHRECTOMY; RECOVERY.

A Clinical Lecture Delivered at the Good Samaritan Hospital, Cincinnati, November 1, 1898.

BY JAMES T. WHITTAKER, M.D.,
Professor of Theory and Practice of Medicine in the Medical College of Ohio.

The diagnosis in this case is manifest from the symptoms as given in the history.

History. — B. J. P., politician, age forty-two, entered the hospital October 31, 1898. Family history good. Never had any serious sickness except his present trouble. When eighteen or twenty years of age he was struck with a club over the region of the kidneys. Since that time a slight strain from exertion or catching cold would bring on attacks of pain in the kidneys, loins, testicles and ureter, followed by vesical irritation and frequent urination with bloody urine. Two years ago small calculi were found in the patient's urine. Three years ago the urine was found to contain pus. Last August he was seized with pain in the left kidney, radiating down the ureter to the testicle, the bladder also being tender and sore and urination very painful. During the night he passed a quart of red blood; on the second morning following a large amount of black blood clots was passed. On the third morning one-half gallon (?) of reddish-brown pus was passed. Since then his condition has been one of alternate improvement and relapse. He has gradually become very weak and is now subject to fainting spells, having lost twenty pounds.

Present condition. — He is weak and emaciated. He lies in bed all the time, for the most part on the right side, with the legs flexed on the abdomen. The face is thin, the eyes deep sunken, surrounded with a dark halo. The voice is feeble and husky. The temperature ranges from $99\frac{1}{2}$° in the morning to 101° or 102° in the evening. There is pain over the site of the left kidney, following the course of the ureter, and tenderness over the area of the bladder.

The urine is turbid, muddy and gray with detritus. The reaction is neutral or faintly acid. The following is the report of the microscopical examination made by Dr. Malsbary: (1) Pus cells, large number; (2) pus casts; (3) small granular casts; (4) tailed cells, a few. No crystals found.

The salient points in this history are, first, a contusion of the abdomen. Just what importance to lay upon this accident it is difficult to say, but whether *post hoc* or *propter hoc* symptoms set in afterwards which were not present before. The blow may have caused hemorrhage. The pain attending the passage of kidney stones is so severe as to be unmistakable where there is no account to be taken of hysteria. But if there was any doubt about the pain, there could be little about the passage of blood, and none about the passage of the stones. It is always a matter of regret that the patient does not keep the stones and bring them to the physician, and this fact is to be especially lamented in this case because the examination of the urine shows no crystals. It has been a long time since any blood has been discharged, but pus flows now freely all the time. When the blood does not appear to the naked eye it is sometimes evident under the microscope, and we are led to make this search all the more thoroughly because the presence of blood corpuscles in the urine has been emphasized, especially by my colleague Professor Ransohoff, as a point of especial value in the diagnosis of stone in the kidney. You can understand, however, that blood would be present only when the pelves of the kidneys or ureters were being fretted or torn by a rough stone. A perfectly smooth stone, a sacculated stone, or a stone embedded in pus would not scratch the kidney and would not show blood.

But whether there is a stone present or not, there is pus in quantity and it is necessary to discover its source, that is, whether from the kidney or the bladder. If the pus belonged to the urethra it would appear with the first discharge of urine, preceding the urine, almost, and could be expressed at any time; if from the prostate it could likewise be expressed, especially with the finger in the rectum, where the large mass of the prostate could be felt, usually with manifestations of pain. The difficulty arises as between the bladder and the kidney. My old teacher, Oppolzer, used to maintain that the reaction of the urine would decide it, for if the pus came from the bladder it would be alkaline, if from the kidney acid. This view, however, is no longer tenable, as pyogenic microorganisms may decompose the urine in the pelvis of the kidney and make it alkaline. Then it must not be forgotten that pyelitis and cystitis may coincide; they usually do in the course of time.

If from the kidney, which kidney? In a woman we may catheterize the ureter to find out. Bergmann, after washing out the bladder in man, makes pressure upon the diseased kidney, and finds that pus is emptied into the bladder and may be discharged from it quicker than after pressure upon the sound kidney. We are led to locate the source of the pus in the kidney in our case because there is so much pain in this region. The patient spares this side in decubitus, and though we can discover no tumor there is considerable tenderness to pressure, both before and behind.

The microscope reveals unmistakable pus cells in great abundance.

Mention is made in the report of tailed cells. These cells belong to the kidney and not to the bladder. However, we lay not too much stress upon the presence of these cells. We have not been helped much by the presence or absence of these cells. All the best modern authorities, especially Ebstein and Fürbringer, declare emphatically that no cells are characteristic of pyelitis and that in the majority of cases of pyelitis no cells are to be found. The cells with tails and multiple nuclei are anyhow not confined to the pelvis of the kidney, but occur also in the bladder and in the anterior portion of the urethra, as well as in the vagina and cervical canal. The pain in the kidney, the tenderness, the continuous fever, the previous attacks of kidney-stone colic with hematuria, fix the disease in the pelvis of the kidney, and in the left kidney.

It is necessary always to eliminate tuberculosis. There is no evidence of tuberculosis elsewhere, and Dr. Malsbary was not able to find the tubercle bacillus in the urine in a two hours' search. He did turn out some diplococci, a few of which seemed to be embedded in the cells, but there are so many diplococci as to make the differentiation of any particular species difficult. But to make assurance doubly sure, I gave this patient a test injection of tuberculin, which did not in any way disturb the diurnal range of temperature. I think, therefore, that we may consider the diagnosis to be pretty clearly established as a pyelitis or a pyonephrosis with nephrolithiasis. The disease began probably with a pyelitis, that particular kind of pyelitis which results in the continuous formation of kidney stones. These stones, or the cause which produces them, lead finally to suppuration, and this suppuration has in turn involved the substance of the kidney, so that the disease, beginning with a simple pyelitis, a pyelitis calculosa, has become a suppurative pyelitis, pyonephrosis or pyelonephritis. In the course of time the flow of pus, with the bacteria which produced it, has also irritated the ureter and finally the bladder. The chief complaint which the patient now makes is the burning of the urine and the frequent desire to pass it. Last night, for instance, he was compelled to pass water twenty times — the tally was kept with strokes — so that his night's sleep was broken up.

The pain is characteristic, but by no means pathognomonic, as just as severe attacks of colic occur in a simple pyelitis without stones or blood clot. A marked increase in the acidity or alkalinity of the urine is enough of itself to produce pain as severe as that caused by like conditions in the stomach. The fever is more characteristic of pyuria; but it must not be forgotten that many cases of chronic pyelitis, even though attended with suppuration, run a course without fever. It is not so much the pyelitis as the pyonephrosis which is responsible for the fever. Fever, more or less continuous or remittent, interrupted by chills, and profuse sweats, are signs of great value in the diagnosis in pyonephrosis. The picture is, then, one of sepsis, and the patient succumbs to marasmus with the symptoms of hectic fever, as in the course of advanced tuberculosis. These symptoms are seen more especially after perforation of the kidney substance with the formation of a peri- or para-nephritic abscess.

The urine does not always show this purulent appearance. It may be perfectly normal at times. Thus it may be heavily loaded with pus at one time and perfectly normal and clear at another. This condition occurs with especial frequency in pyelitis of calculous origin, and finds explanation in occlusion of one ureter.

What we want to know now is the condition of the other kidney. Where suppuration exists for any length of time it is liable to induce a parenchymatous nephritis in the second kidney, and, in any event, a long-continued suppuration may lead to amyloid change. This amyloid degeneration, when of long duration, may be appreciated by enlargement of the spleen and liver. We find nothing of this kind here, but an obstinate diarrhea has set in of late which might speak for an amyloid degeneration of the mucous membrane of the intestinal canal.

Having eliminated tuberculosis, the diagnosis rests between a pure pyelitis or a nephritis or the coincidence of both. It is by no means always easy to settle this question. The implication of the kidney usually imparts the graver signs of sepsis, and the profuse pyuria, the emaciation and the great prostration speak for suppurative nephritis in this case. The fact that there is more albumin in the urine than the pus would account for would indicate also involvement of the kidney. The presence of granulated casts lends additional testimony. A peri- or para-nephritis usually shows a high temperature. The pain is also more constant in these conditions, and sometimes there is edema of the surface indicative of the suppuration beneath.

Where there is a tumor the question may be solved by aspiration, though the presence of pus would not necessarily differentiate a nephritis from an abscess in the vicinity of the kidney, as sometimes the kidney itself is hollowed out to a mere shell or sac of pus.

At the request of the patient an x-ray examination was made by Dr. Taylor, a skilful skiagrapher of this city. Such pictures are usually extremely unsatisfactory, and this is no exception. It is difficult or impossible to secure penetration of the whole body to the x-ray, but in this case penetration was easily secured on account of the emaciation, the body in the region of the kidney being not as thick as the thigh of an ordinary man. Sometimes these stones show as a light spot in the picture. I pass the plate about. You may make out without difficulty the arches of the iliac bones and with difficulty a few of the lower ribs. There is something of a smirch or smudge which might be interpreted as a foreign body, but I would not be willing to accept it as the picture of a kidney stone. Neither does the skiagrapher in this case.

As to the prognosis, it is plain to see. The patient has postponed an operation to the last possible moment. All the remedies of medicine have long since been exhausted. The indication now is to make an exploratory incision and drain the pus sac, wherever it is. The operation may be a success, or it may be too late already. We cannot tell exactly what is the condition of the other kidney, but the quantity of the urine voided, notwithstanding the weak action of the heart, would indicate a pretty sound kidney on the other side.

The patient having finally consented, two weeks after the clinic, my colleague, Dr. Ransohoff, with his assistant, Dr. Freiberg, and with the assistance of the internes, in my presence, opened the abdomen in the loins posteriorly, and soon came upon a kidney enlarged to three times its natural size, whose pelvis was distended with pus, of exceedingly offensive nature, which was evacuated to the amount of perhaps six ounces by incision. It was now seen that the kidney substance had suffered injury. The cavity of the pelvis extended in anfractuosities in every direction. The kidney itself was found so deeply congested and dark that it was deemed advisable to remove it. It had the appearance of the small lobe of the liver — lobulated. The entire mass was accordingly withdrawn from the abdominal cavity, ligated at the pelvis, clamped and exsected, after the manner of treating an ovarian tumor. On section of the kidney it was seen that the parenchyma was greatly riddled by suppuration and reduced. In one of the anfractuosities a stone was found about the size of and twice as thick as an ordinary coat button. It was perfectly smooth. Near it was found a smaller stone of the size of a small pea. This stone was also smooth. It was apparent that neither of these stones had done the mischief.

The patient passed urine freely on the night of the same day. The urine was still turbid, but the quantity of pus was notably lessened and decomposition did not set in so rapidly. Urotropin, seven and one-half grains every four hours, was now prescribed, whereupon the urine became perfectly sweet and free from pus in the course of twenty-four hours. There was no fever after the operation, and the patient partook of food and drink so soon as he had recovered from the effects of the anesthetic, and is now, ten days after the operation, doing so well in every way that we may predict a restoration to perfect health in two weeks.

Dr. Ransohoff promises to detail the particulars of the operation in this case in a report including a number of similar successful cases. The great amount of effort necessary to deliver the kidney, that is, to withdraw it bodily through the wound to the outside of the body, was a surprise to me. I have since seen a comment to this effect made by Dr. Ben Johnson in his report on the Surgery of the Kidney at the recent session of the Mississippi Valley Medical Society.

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Original Articles.

VARIATIONS IN PATHOGENIC ACTIVITY AMONG TUBERCLE BACILLI.[1]

BY THEOBALD SMITH, M.D., BOSTON.

In the production of states of disease due to infection we should recognize two main modifying factors — the pathogenic activity or virulence of the infecting organism, and the resistance[2] of the infected individual.

Variations in the pathogenic power of bacteria are probably the result of prolonged sojourn in slightly different environments. If, for instance, a given tubercle bacillus had successfully invaded a vigorous adult, and had successfully passed from this person to a second, a third, or a long series of vigorous adults, and had then after this prolonged contact with tissues of a certain vitality invaded the body of a child, we are justified in assuming that the virulence of this bacillus with reference to the child has been increased by its successful invasion of vigorous, naturally more resistant adults. Again, if a tubercle bacillus, vegetating in a tuberculous lesion of the skin, through a favorable combination of accidents had produced a series of infections of the skin, we may assume that differences, however slight, between this bacillus and one infecting a series of lungs would become eventually established. A continuation of such series, through fortuitous circumstances, might finally produce two varieties of tubercle bacilli, each incapable of taking the other's place successfully. It is probably in some such way as this that varieties are produced which become restricted as to the territory they are capable of infecting, while at the same time they become especially adapted to infect this restricted territory. The bacillus of bovine tuberculosis illustrates another phase of the same problem. Does it by its continued passage through the bovine body become more virulent to human beings, or does it thereby lose largely its power to graft itself upon the human system? Either alternative may be true, but neither is proven.

I cite these illustrations to emphasize the relativity of the term virulence and its dependence on the character of the host, as well as the relativity of the term resistance, as it depends more or less on the bacterium. These two terms, virulence and resistance, may be compared to the two opposite sides of the same shield. They are, as mathematicians would say, functions of one another. They are, however, none the less real when we come to deal with given species, races or types of individuals whom the tubercle bacillus may infect. It takes a long time to modify bacteria, and for the short space of life of the individual their characters are practically fixed. We need here a certain sense of perspective to enable us to appreciate the slow change during long periods of time and the temporary fixity. The evolution of new characters is going on in all living organisms, but all our information concerning them is anchored, as it were, to their temporary stability.

In the laboratory we are able to modify experimentally both the virulence of certain bacteria and the resistance of the host. By passing these bacteria through a long series of susceptible animals of the same species a greatly increased potency of the bacteria, with reference to that species, is noticed at the end. By treating susceptible animals with certain bacterial products or cultures killed by heat or chloroform, the resistance may be increased. Different degrees of induced resistance lead to different clinical and pathological types of the same inoculation disease, so that the etiological relationship between them would hardly be surmised without a definite knowledge of the experimental details.[3]

Variations in the pathogenic activity have been demonstrated for a considerable number of disease-producing species. In fact, it seems to be the rule to encounter slight variations in the study of series of cultures of the same organism obtained from different sources. I might cite many illustrations in support of these statements, but I shall limit myself to one of general interest. The diphtheria bacillus, which is so well characterized by the production of a specific toxin, may vary in the power to produce this toxin from case to case. Thus bacilli from one source have produced for years just three times the amount of toxin produced by bacilli from another source, when cultivated in bouillon of the same composition. Other numerical relations in the power of toxin production may be cited, but the fact I wish to emphasize is the constancy of the variation under identical conditions.

In their contact with infectious diseases physicians have laid the emphasis now on virulence, now on resistance. With diseases having a rapid course, like cholera, the plague and diphtheria, the relative resistance of individuals is in the background, and the virulence of the infecting agent receives more attention. With diseases of slow progress, like tuberculosis, attention is centred upon the resisting capacity of the individual as expressed by heredity, bodily conformation and environment — the soil, in other words, of which we have heard so much. It may be that the instinct of the experienced physician is quite correct in attributing to the resisting capacity of the individual in the more prolonged chronic infections a more conspicuous influence than in the acute infections, because in the former the latent forces of resistance have had time to develop in the course of the disease. Of these two conceptions, virulence and resistance, I shall confine my remarks to the most neglected one — not for the purpose of bringing to light startling hypotheses or unlooked-for facts, but to call attention to virulence as an element not to be ignored in our study of tuberculosis.

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[1] Presented, by invitation, at the meeting of the American Climatological Association, September 1, 1898.

[2] This term figures in medical writings chiefly as immunity, although the term is merely relative, since there is no absolute immunity.

[3] I have expressed this relationship between the type of disease on the one hand and the virulence and resistance on the other by the simple equation $d = \frac{v}{r}$ where v = virulence, r = resistance. Increasing v or diminishing r we augment the severity of the disease (d). Increasing r or diminishing v we diminish its severity.

Variations in pathogenic activity among bacteria specifically related may be due to artificial cultivation, or they may be found spontaneously, and they are then due to a natural cultivation in the human or animal body through long periods of time. There are on record some statements concerning the weakening or attenuation of the tubercle bacillus after prolonged artificial cultivation, which I may pass over here, as it is the fate of all bacteria to become reduced in virulence in this way. There are also some statements concerning artificial attenuation with disinfectants, like iodoform. These do not bear on the main question before us, which is concerned with the discovery of varieties of tubercle bacilli as they actually occur in the diseased body. These may be found infecting different species of animals, or they may be looked for in individuals of the same species. These distinctions will be better understood if we glance for a moment over the large field occupied by this formidable organism.

It is now a widely-known fact that, besides man, the lower animals are the victims of tuberculosis. Tuberculosis of cattle is a widespread evil, increasing year by year. Through the food products derived from cattle swine have become extensively infected in some countries. Carnivora and especially monkeys contract it. It is rarely found in horses. Poultry in European countries is subject to it. Mafucci has shown that the bacillus producing tuberculosis in fowls has certain characteristics which distinguish it from the human bacillus, and which give it the rank of a variety or race. Investigations which I have been carrying on during the past three years have revealed certain constant differences between bacilli obtained from human sputum and those from cattle, sufficient, in my estimation, to make the bovine bacillus a race by itself.[4] It is probable that the tubercle bacillus has become modified, through a long series of transfers, from one animal to another of the same species into a number of varieties, which may be considered more or less adapted to their respective hosts, but whose relation to other hosts is at present obscure. The relation, for instance, in which the bovine tubercle bacillus stands to the human race is of the utmost importance, in view of the wide dissemination of this disease and the difficulties encountered in coping with it.

Passing to the disease as it is found in the human subject, we are confronted by the problem of variation in a narrower sense. It is evident that differences in pathogenic power are much less likely to become evolved in bacteria which are parasitic upon individuals of the same species because of a close uniformity of soil, and if they occur at all, the differences are probably less appreciable than those occurring in different species.

In weighing the probabilities in favor of the existence of varieties among human tubercle bacilli, we find a strong argument in the wide divergence of occupation and environment into which the life of the human race has become differentiated. This is not so with domestic animals, cattle for example, which, with slight variations in food and the amount of indoor confinement, are doomed to the same monotonous existence. In the human race the great differences in the condition of individuals have provided for infectious agents a variety of soils in which to vegetate. If through chance several given bacilli should invade series of the different types of individuals, slight differences in the bacilli might eventually be looked for. Such differences may, however, be too slight to be apprehended with our present crude methods. In the paper referred to above I called attention to the probable modifying influence upon the tubercle bacillus of a prolonged multiplication in the necrotic material and the bronchial exudation in cases of mild, long-standing pulmonary tuberculosis. Here a contact with living tissue, endowed with bactericidal properties, does not occur, and the tubercle bacilli live a saprophytic existence, which must sooner or later modify their aggressiveness towards living tissue.

Speculations and hypotheses are, however, of little value, often positively injurious unless in part supported by demonstrable facts. Hence they must be tested by experiment upon animals and observation of animal diseases in which secondary influences are less numerous and preponderant than in man. The broader and more varied these experiments and observations are, the safer the conclusions when applied to human diseases. A survey of the field of experimental medicine shows that but little has been as yet accomplished in the study of variations of the tubercle bacillus, mainly because it seems to have been taken for granted that varieties do not exist. In his investigations upon the new tuberculin Koch[5] had occasion to have a number of cultures studied by his assistants, and in his report he briefly states that there was considerable variation in the virulence.[6]

To Arloing of Lyons belongs the credit of having called attention to this subject more than ten years ago. He and his pupils have been experimenting with the products of various forms of tuberculosis in man, and as a result of their experiments they claim that with rare exceptions the bacilli of pulmonary tuberculosis are more virulent than those of the scrophulous or surgical forms of tuberculosis.[7] Arloing bases his claim upon the fact that bacilli from visceral tuberculosis are much more pathogenic towards rabbits than those of the scrophulous forms. When, according to this author, bits of tuberculous tissue or sputum are placed in the subcutaneous tissue of the thigh of rabbits, those from the pulmonary disease invade the lungs of rabbits, where tubercles may be detected after two months. Those from the other types of tuberculosis fail to reach the lungs and remain localized. In guinea-pigs both produce eventually a generalized disease.

In a recent paper, Courmont and Denis,[8] two of Arloing's pupils, continuing his work, have shown that the pulmonary form of tuberculosis may now and then harbor quite attenuated bacilli.

Arloing has encountered considerable opposition, mainly because the method he employed is not above criticism. It is a well-known fact that the course of the disease, artificially induced in animals with tubercle bacilli, depends largely upon the number of bacilli introduced. Inasmuch as they greatly vary in number in different lesions, and as the staining does not tell us whether they are living or dead, the inoculation of the products of disease is a rather uncertain factor upon which to base conclusions.

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[4] The Journal of Experimental Medicine, iii (1898), No. 4.

[5] Deutsche med. Wochenschr. 1897, No. 14.

[6] Since the completion of this paper this work has been published in detail by Vagedes (Zeitschr. für Hygiene).

[7] Leçons sur la Tuberculose et Certaines Septicémies. Paris, 1892.

[8] De la Tuberculose Pulmonaire à Bacilles Atténués, Rev. de la Tuberculose, v (1897), p. 289.

In order to test Arloing's work, Auclair[8] recently undertook, under Grancher's supervision, the study of cultures from four cases of tuberculosis — a rapidly progressive tuberculosis of a gland of the neck and a case each of true scrophula, slow phthisis, and acute meningitis. On guinea-pigs the intra-abdominal injection of the cultures had nearly the same effect. Hence, the author does not hesitate to regard them as identical in virulence. Auclair in failing to test the cultures upon rabbits did not improve much upon the method of Arloing, for with the aid of these animals we are enabled to determine degrees of virulence not recognizable in the very susceptible guinea-pig. The views of Arloing are therefore still to be disproved. They are, however, quite in harmony with facts obtained experimentally with other pathogenic bacteria to which I have already referred. It is quite impossible, from our present standpoint, to consider the great variations in the localization of the tubercular virus, and in the course taken by it in the human body, as merely fortuitous. Undoubtedly the factors of virulence and resistance play a prominent part. We are in a much better position to-day to undertake investigations into the relative virulence of tubercle bacilli from different sources than into the much more complex factor of resistance to their invasion and multiplication. Any light thrown on the subject of virulence will indirectly illumine that of resistance or susceptibility.

My own studies of human tubercle bacilli, though somewhat limited in range, lead me to believe in the existence of minor variations in the form of the bacillus, the appearance and character of the cultures and the virulence, whose significance needs still to be deciphered. Among seven cultures of bacilli from sputum, one differed from all the rest in refusing to grow satisfactorily upon dog's serum. Of other forms of this disease only one culture has been under observation. The patient, sixty-five years old, had a large swelling on the left side of the neck, which broke and discharged much pus. It continued discharging through sinuses until death, which took place about five months after the appearance of the swelling. When first seen by the pathologists of the Boston City Hospital, to whom I am indebted for the material, the discharge contained a very large number of bacilli. It was supposed that these were of more than the average virulence, but the cultures which I obtained through guinea-pigs proved rather the opposite. They were less virulent than the sputum cultures studied, both toward rabbits and guinea-pigs. This case illustrates the uncertainty of our deductions, when the pathogenic agent is not studied independently of the many modifying influences at work in the human body.

It would be presumptuous on my part to dilate upon the practical value of a more accurate knowledge of tubercle bacilli. Those who are engaged in pathological, etiological and therapeutic studies of tuberculosis will promptly discern how such information will serve their special purposes. To the student of etiology the search for the bovine variety of the tubercle bacillus in the human body will for a time be the most important problem. To the pathologist, the variation in the lesions produced by the tubercle bacillus will need renewed study by comparing the bacilli which are responsible for divergent tissue changes. The physician will desire better information upon the possible differences between bacilli producing tuberculosis of the integuments, of the bones and joints, and of the viscera. He will wish to know any demonstrable differences between a rapidly fatal case and one that is protracted over years. He will above all wish to interpret his therapeutic successes and failures.

The outcome of studies of the pathogenic power of tubercle bacilli upon animals must, however, not be taken too literally. It should be borne in mind that results are at best only comparative. Thus increased virulence toward certain species of animals, as tested in the laboratory, must not be interpreted to mean necessarily increased virulence towards the human organism, although this may eventually be proved to be the case. The only positive information we may safely accept are the accurately ascertained degrees of difference among tubercle bacilli from different sources, as expressed in terms of bacteriology. Thus I have calculated approximately that the virulence of sputum bacilli to bovine bacilli is as 1 to 20 or 1 to 30 when tested on rabbits. No one will venture to assert with these figures in mind that when these races are implanted in the human body this great difference will be wiped out and the resulting disease be the same. Such differences signify certain unknown differences in behavior in the human body, which must be studied by the clinician and the pathologist before they can become available as positive knowledge.

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NEURALGIC AFFECTIONS OF THE HEAD.[1]

BY GUSTAVUS ELIOT, A.M., M.D., NEW HAVEN, CONN.,

To-day improved methods of examining the various organs, and the physiological and pathological products obtained from the body, enable the physician to form more exact opinions in regard to most diseases than was possible twenty years ago. It is not strange that those functional disorders which furnish few data for exact conclusions are somewhat neglected. In this class an important place is occupied by painful affections of the peripheral and central nervous systems, which are not associated with well-understood pathological changes. Many of these functional nervous disorders, which are characterized by pain, are classed as neuralgia. This term implies a painful affection of a nerve. In every part of the body nerves abound, and consequently it is natural that neuralgia should be of universal distribution. But experience teaches that certain nerves are affected with especial frequency. Those forms of neuralgia which are considered most typical are observed in certain superficial nerves — the supraorbital, the intercostal and the sciatic. The nerves supplied to the deeper organs — the heart, stomach and intestines — are, however, not infrequently affected.

Of the different uncomfortable sensations of which our patients complain to us general practitioners none is more common than pain in the head, or headache. Not only is it a symptom of many general and local diseases, but it frequently occurs, so far as can be easily determined, independently of such diseases, and these cases come to be regarded, practically at least, as examples of an independent disease. The truth of this statement is confirmed by the facts that several independent treatises have been written upon headaches, and that in many text-books on practical medicine and neurology special chapters are devoted to the description of various forms of headache.

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[8] Recherches sur la Virulence des Bacilles Tuberculeux Humains provenant de Sources Cliniques Diverses, Arch. de Méd. Exp., ix (1897) p. 1124.

[1] Read at the Fifteenth Annual Meeting of the New York State Medical Association, in New York City, October 19, 1898.

In my student days, twenty years ago, the descriptions of the different varieties of headache were extremely confusing, and it cannot be asserted that the subject has, even at this late day, been entirely cleared up. In certain directions indeed considerable light has been shed, but the elucidation of these varieties of the affection seems to have left the others in an obscurity which is more pronounced by contrast with them. For instance, incalculable relief has been afforded to many sufferers by the correction of abnormal conditions of the eyes. So striking have the results been in some of these cases, that the only advice many practitioners give to patients who complain of chronic headache is to have their eyes examined. It would almost seem that these physicians consider that headache belongs to the domain of ophthalmology, rather than of neurology. A feeling of this kind has led to the neglect of these cases by many physicians, so that, if treatment of the eyes does not benefit such patients, they are likely to be neglected, and to be allowed to endure their sufferings unaided. These cases offer to the general practitoner a rich field for careful study and observation, with the object of clearing up some of the uncertainties and difficulties with which they are surrounded.

There are three forms of headache of which we hear a great deal, and of which much has been written: one is the headache from eye-strain, another is migraine, and a third is neuralgia of the various nerves about the cranium. Certain examples of each of these classes are more or less closely related to the other classes. For instance, certain cases of migraine are unquestionably aggravated by defects of the eyes, and are greatly relieved, although usually not entirely cured, by overcoming these defects. Other cases of migraine partake more or less of the character of neuralgic affections at certain periods in their course. For instance, a patient who is subject to occasional attacks of migraine may, under certain physical conditions, become subject to frequently recurring attacks of neuralgic pain in certain branches of one of the cranial nerves. Of course these three more talked of varieties do not embrace all, or nearly all, the varieties of headache observed in practice. It is to the more strictly neuralgic forms that these remarks will be limited.

Neuralgic affections of the head are of almost infinite variety. They include both those which are, according to our present views, the most typical forms of neuralgia, and those whose neuralgic character it is exceedingly difficult to determine with absolute certainty. The common forms of supraorbital neuralgia are the most frequent, and usually present those symptoms which are generally regarded as most characteristic of neuralgia. These are the remissions, the pain lasting a few hours and then ceasing, the periodicity, the pain recurring at approximately the same hour on successive days, and the tenderness on pressure at certain parts of the nerve. Less common forms are those in which the temporal, posterior auricular or occipital nerves are affected.

The various forms of neuralgia which are limited to one or a few branches of the cranial nerves are easy of recognition. But on the other hand there are several kinds of headache which seem to present some of the characteristics of neuralgia, which cannot properly be classed with the more typical forms of the disease.

Anstie regarded migraine as a form of neuralgia, but this view has not been generally accepted. There are several reasons why it is untenable. Perhaps the most important is that the paroxysms of migraine ordinarily occur at tolerably long intervals during many years, whereas neuralgia, during an attack, is present every day for a number of days or weeks, and then disappears entirely, although it may return after intervals of varying lengths, perhaps months or years. At the same time, it must be remembered that, as Dr. J. J. Putnam, of Boston, has pointed out, some cases of supraorbital neuralgia seem to change gradually into true migraine.

The question naturally arises, whether the pain in the head due to ocular troubles is a form of neuralgia. It seems to me that it ordinarily is not, although there undoubtedly are a few cases in which the pain is so definitely limited to a particular nerve that it is impossible to deny the neuralgic character of the affection. The chief element in headache due to errors of refraction and accommodation is fatigue. The general appreciation of this fact is indicated by the common expression, eye-strain, used in referring to these cases.

Two important factors are concerned in the etiology of a large class of the neuralgic affections: one is a depraved condition of the blood, the other is a condition of exhaustion of nervous force. Anemic persons and those who have been exhausted by overwork, worry, dissipation or disease are predisposed to attacks of neuralgia. Both of these conditions are present in many of the patients who suffer from so-called eye-strain. But the facts that in these cases the pain is diffuse, and is obviously due to prolonged use of the eyes, lead to the logical conclusion that most of these cases are not true neuralgia, although it must not be forgotten that occasionally a latent tendency to neuralgia may be brought into prominence by this cause.

The headaches due to constipation and dyspepsia are not, as a rule, entitled to be classed as neuralgic, because of their lack of persistency when the functions of the digestive organs are restored to their normal condition, and because they show no tendency to limitation to particular areas of nerve distribution. Those due to catarrhal inflammation of the mucous membranes also should not be included among the neuralgic disorders, because they are constant, and are not limited to particular nerve areas. Obviously the headaches which accompany fevers and inflammatory affections are also to be excluded from consideration in this connection.

Between the most typical forms of neuralgia affecting single superficial nerves, on the one side, and headaches due to migraine, eye-strain, disordered digestion, catarrhal inflammation and febrile disorders, on the other side, most general practitioners occasionally meet cases of a more less persistent pain in the head, which do not seem to deserve to be classed with either of these groups, but which, after careful observation, will be found to have some of the characters of typical neuralgic affections. Such atypical forms of neuralgia affecting the head, although occasionally seen by most physicians, are inadequately described by most text-books, and are certainly deserving of more careful consideration than has generally been given to them. By studying such cases at different stages in their progress, and comparing their symptoms with those of more typical cases, it is possible to discover certain characteristic features which are common to both classes of cases, and which afford valuable assistance in determining the nature of atypical forms.

The histories of a few cases will illustrate my meaning.

I. CASE OF TEMPORAL AND SUPRAORBITAL NEURALGIA.

Mrs. S., forty-eight years old, had neuralgia twenty-four years ago, and has had it several times since. The last attack was eight years ago.

July 22, 1898. For over a month she has had severe pain in the left temple and over the left eye. For the last three days it has been very severe. The left eye becomes red, and there is profuse lachrymation. The pain extends down into the teeth.

July 23d The pain has been constant since eight o'clock yesterday morning. Some days the pain comes at nine o'clock in the morning, and some days later. Five-twelfths of a grain of morphine sulphate was injected subcutaneously. This afforded considerable relief, but the pain did not entirely cease.

July 25th. There was some pain from nine to eleven o'clock in the morning. On the next day the pain was a great deal better in the morning, but at noon there was a little sharp pain in the left temple, which was more severe between one and five o'clock in the afternoon. On the following day also there was considerable pain from one to seven o'clock in the afternoon.

July 28th. There was some pain from noon to three o'clock, and also from five to ten o'clock in the evening.

July 31st. There has been no pain during the last two days.

This is unquestionably a case of neuralgia, and closely resembles the most typical examples. The localization of the pain to particular nerves on one side of the head, the recurrence of the attacks at intervals of years, the remission of the pain, and its exacerbation at certain parts of the day are characteristic features.

II. CASE OF GENERAL NEURALGIA OF THE HEAD.

Mrs. W., seventy-five years old, has suffered from organic disease of the heart for many months.

May 14, 1898. For almost two weeks she has had pain all over the head, which has been constant and severe for the last two days. The pain is "all around the head," and in the neck, and down the left arm to, but not below, the elbow. The tongue is coated and the bowels are constipated. One week later there had been no improvement as regards the extent and severity of the pain.

May 30th. The pain in the head is still severe. It is worse toward evening and during the night. The pain also persists in the neck and left arm, and she cannot raise her arm.

June 5th. There is still some pain through the head back of the ears, and sometimes in the forehead and eyes. It comes and goes. From this time the pain gradually became less constant and less severe, but did not entirely disappear until the middle of July, when she declared that her head felt better, and did not trouble her much.

In this case there was no history of previous attacks, but the facts that the pain showed a tendency to extend from the head in the direction of certain nerves, that the pain was not constant, that it was worse at certain hours of the day, that it changed from one part of the head to another, and that it entirely disappeared after ten weeks, indicate positively that the pain was neuralgic in character.

III. CASE OF GENERAL NEURALGIA OF THE HEAD.

Mrs. C., thirty years old, was delivered of her third child on September 16, 1898. Four weeks later she stated that she had had neuralgia in her head more or less for two weeks. The pain is all over the head, and in the throat and back of the neck, and also in the teeth. The head feels sore. The pain is generally worse during the forenoon. It becomes severe after she has been about the house for a time, and then gradually diminishes toward four or five o'clock in the afternoon. She has not generally felt the pain on waking, but during the whole of the preceding night it had been so severe that she could not sleep, nor even rest her head upon the pillow, and it still continued in the morning. She has the pain nearly every day, and sometimes it comes on after she has retired. In the evening of this same day it was reported that the patient had suffered with severe pain since eleven o'clock in the morning. At first it had affected the entire head, but later it became more severe on the right side, and especially in the lower jaw on the right side, in the right temple, and in and back of the right ear. The sulphate of morphine was prescribed in doses of one-sixth of a grain, to be repeated every hour until relief was obtained, and on the following morning the patient, having taken four doses of the medicine, felt very much better. After a few days the pain entirely disappeared.

The exacerbations of pain, its extension to the face and neck, the tenderness of the scalp, and the prompt disappearance of the pain after active treatment was commenced, indicate that this also was a neuralgic affection.

Briefly, the conditions which point to the neuralgic character of a painful disorder affecting the whole or part of the head are the absence of fever and circulatory disturbances, the absence of catarrhal and digestive disorders, the occurrence of exacerbations of pain on successive days, a tendency of the pain to extend along certain nerve tracts, and to change from one part of the head to another, tenderness of the scalp in certain parts of the areas of pain, ultimate complete recovery from the attack, and in some cases a repetition of it at intervals of considerable length. Such attacks are not necessarily confined to the branches of a single nerve, nor even to one side of the head, but may involve the entire head, or may include both sides of the frontal, parietal or occipital regions.

With regard to treatment little need be said. If the neuralgic character of the disorder is recognized, the treatment which usually proves efficient in other forms of neuralgia will be found useful. If the patient is seen while the pain is severe nothing will afford so great and so prompt relief as the hypodermatic injection of sulphate of morphine. For continuous use the sulphate of quinine and gelsemium are of great value. The former may be given in five-grain doses repeated every fourth hour, or in ten-grain doses at night and in the morning. The tincture of gelsemium may be given in fifteen-drop doses every fourth hour, or the fluid extract, in five-drop doses at the same intervals. Rest and hot applications to the head are valuable palliative adjuncts to medicinal treatment. All the organs should be encouraged to perform their functions as perfectly as possible, so as to promote the general nutrition of the body, and this should also be aided by the administration of such blood and nerve tonics as arsenic and iron.

AN INVESTIGATION AS TO THE FREQUENCY OF TYPHOID FEVER IN INFANCY.

BY JOHN LOVETT MORSE, A.M., M.D.,
Physician to Out-Patients at the City Hospital and at the Infants' Hospital, Boston; Assistant in Clinical Medicine, Harvard Medical School,
AND HARTLEY WALES THAYER, A.B.,
Student of Medicine.

THIS investigation was undertaken because one of us had a feeling that typhoid fever might be more common in infancy than is ordinarily supposed. It was thought possible that on account of the mildness of the symptoms and their resemblance to those of the ordinary gastro-intestinal disturbances of infancy, the disease might often be unsuspected or overlooked. The recently discovered method for the diagnosis of typhoid fever, based on the action of the blood of typhoid patients on cultures of the typhoid bacillus — Widal's serum reaction — seemed to offer a means for determining whether these suspicions were well founded or not.

This test was accordingly made in fifty cases during the past summer. The babies were all under two years of age, out-patients at the Infants' Hospital. The ages of the patients by months were as follows:

Months.	Cases.	Months.	Cases.	Months.	Cases.	Months.	Cases.
2	1	7	4	11	6	15	1
3	3	8	7	12	3	17	1
4	3	9	3	13	3	19	2
6	3	10	2	14	4	23	4

No attempt was made to pick cases of any especial clinical type or severity, but rather to take cases of all types and of various grades of severity. The clinical diagnoses were:

Simple diarrhea	2
Fermental diarrhea	45
Ileo-colitis	3

With the exception of the case detailed below, only one test was made in each case.

The day of the disease on which the test was made was as follows:

Day of Disease.	Cases.	Day of Disease.	Cases.
3	1	18	2
4	1	20	1
5	4	21	3
7	5	28	1
8	3	30	2
10	1	31	2
11	2	33	2
12	3	35	1
14	4	42	2
15	6	58	1
16	2		

In carrying out the test a twenty-hour-old bouillon culture of an actively motile, virulent organism, grown at room temperature, was used. Ten parts of this culture were mixed with one part of fresh blood serum and examined between slide and cover-glass. Only distinct clumping of the organisms was accepted as positive. The limit of time allowed was one hour. In only one case was a positive reaction obtained. This case is reported more fully below.

The question of a previous attack of typhoid in the mother was investigated in thirty-nine cases. Thirty-three had not had the disease, while six had had it at some time in the past. The number of years since the attack were twenty-four, twenty, fifteen, ten, seven and four. Among these latter cases was the mother of the child whose blood gave the positive reaction.

The history of this case is as follows: The mother had a "slow fever" ten years ago. Since that time she had not been ill. Her blood on July 16th gave a positive serum reaction in fifteen minutes. There was no typhoid fever in the neighborhood, as far as known. The child was fed on the breast for three months, and then on an uncooked mixture of cows' milk and water. Its illness began on July 8th. When seen on July 12th it was seven months old, and only moderately sick. It had lost its appetite, had pain in the abdomen, was vomiting a good deal, and had six or eight large, watery, greenish, slightly foul movements, containing curds, but no mucus or blood, daily. Under treatment the vomiting soon ceased, and the movements were normal in every way on July 21st. At no time was there any abdominal tenderness or distention. There were no rose spots and no splenic enlargement. The temperature ranged between 38° and 39° C. until July 19th, after which it remained normal. A positive serum reaction was obtained on July 12th — fifth day of the disease — in fifteen minutes, and another on July 16th — ninth day of the disease — in twenty minutes.

If it were not for the positive serum reaction of the mother, this case could only be considered as a case of infantile typhoid. The marked reaction in her, however, suggests the possibility, if not the probability, that the serum reaction of the child may have been inherited from her or imbibed from her through her milk. The fact that the reaction was so marked on the fifth day of the disease lends some color to this conception. The absence of the reaction in the children of the other women who had had typhoid would count against it if they had themselves shown the reaction. The fact that the course of the disease was mild and not accompanied by the usual signs of typhoid cannot have much weight, as we know but little regarding the course of typhoid in infancy, and what little we do know teaches us that it runs a very mild course. On the whole, therefore, we are inclined to think that the reaction was due to the mother, and not to the disease.

The following conclusions seem to a certain extent justified:

(1) Typhoid fever, as has been commonly believed, is an unusual disease in infancy.

(2) It is possible that women whose blood gives a positive Widal reaction, even though it be years after the occurrence of the disease, may in some way transmit this to their infants.

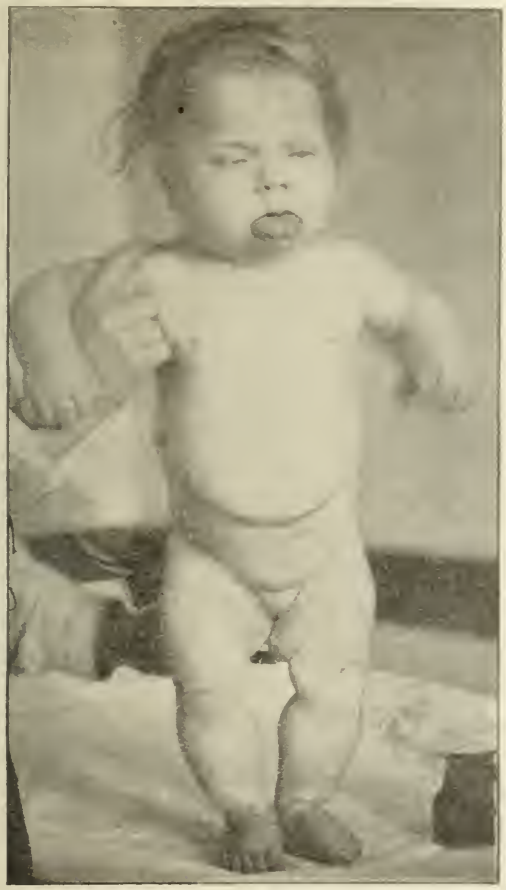
A CONVALESCENT HOSPITAL AT NAGASAKI.— It is reported that Surgeon-General Sternberg has recommended to the Secretary of War that a military hospital for convalescents from the army of the Philippines be established at Nagasaki, Japan.

Clinical Department.

A CASE OF CONGENITAL CRETINISM.[1]

BY C. W. TOWNSEND, M.D., BOSTON.

This child came to my service in the Out-Patient Department of the Children's Hospital some two weeks ago. I sent it into the house, where it is in the service of Dr. Morrill, who kindly permitted me to show the case to-night. The child is two years and five months old and shows the characteristic appearance of cretinism, although it has already begun to improve under treatment by thyroid extract. In the first place, you see it is very much dwarfed — twenty-four and a half inches tall — about the size of a baby of a year. A baby of this age ought to be at least thirty-three inches tall. Not only is it small in general growth, but the extremities are all stunted. The characteristic things about the face are the flattened base of the nose and the protruding tongue. The tongue has already begun to go into its mouth; it was sticking out much more two weeks ago, before treatment was begun. The tongue then measured one and one-half inches in breadth. Another thing the child has already lost, under treatment, is the waxy pallor. There is already color in its cheeks. The skin was also very dry, especially on the hands and feet. You can still feel the semi-edematous condition of the skin, which does not pit on pressure, but the roughness is to a large extent gone. It has an umbilical hernia, which is not uncommon in cretins. Pads of fat can be felt above the clavicles. The general condition is one of mental as well as physical torpor, although the child has already begun to show a little more intellectual brightness than when it was first seen. It cut its first tooth at eighteen months and now has eight teeth. It cannot stand alone yet. The thyroid gland cannot be felt.



The treatment consists of thyroid extract, beginning with a dose of one-half a grain three times daily. I hope to show the child again at the end of the year, markedly improved.

It is interesting to compare with this another case, the photograph of which I have here. It came to my service two years ago and shows the remarkable results of treatment. The child was then four years old and was only twenty-eight inches tall — not much taller than a normal child of a year and a half. The child was unable to stand, had the stupid expression and the characteristic features of this child here to-night — the depressed nose, large protruding tongue, stunted arms and legs, and a condition of complete idiocy. In both of these cases the thyroid glands could not be felt. In 60 cases collected by Osler, and presented by him in Washington a year ago, there were only seven in which the thyroid gland was felt or was enlarged. This case was put on thyroid treatment, beginning with one-half grain of the extract and increasing to one and a half grains three times a day. At times it was necessary to diminish the dose owing to the nervous excitability it produced in the child. The temperature in both of these cases was subnormal when first seen, and in this case and in the other it became normal or a little elevated under treatment. This child when four years old had no teeth at all, and the teeth cropped out in the most remarkable way during treatment. Four months after treatment the child had cut seven teeth and grown two inches in height, and the circumference of its head was increased one-half inch. Six months after treatment had begun the child had twelve very good teeth, had grown another inch and a half, and the circumference of the head had increased another one-half inch. The mental improvement was marked. It began to notice strangers and would be shy in their presence, like a normal infant. It became brighter, smiled, and began to say a few words.

I will pass around two other photographs. This case came to me at the Children's Hospital in 1891, before we knew of the treatment by thyroid extract, and the child was not treated and died a few months later of some intestinal disease. I reported the case in the *Archives of Pediatrics*. This other case was a most remarkable one, a cretin thirty-eight years old, at the Lying-in Hospital. She was seven months pregnant, and weighed, with her clothes and the seven-months fetus, sixty-five and a half pounds. I reported the case before the American Pediatric Society.

"The Practitioner" to be Enlarged. — *The Practitioner*, edited by Malcolm Morris and published by Cassell & Company, will be increased in size after January 1st. The price, which up to the present has been twenty-five cents, will be doubled. More portraits and illustrations will be introduced, and the value and attractiveness of the already excellent journal will be increased.

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[1] Shown before the Boston Society for Medical Improvement, November 7, 1898.

A CASE OF GANGRENE OF THE LUNG.[1]

BY W. H. SWAN, M.D., BEVERLY, MASS.

G. H. C. is an oil-clothing manufacturer, thirty-six years old, and father of two healthy children. His family history is not important. Has been subject to attacks of asthmatic bronchitis for the past six years, otherwise has always been well, except for a debilitating siege with peri-tonsillar abscess in early November, 1896. He regained his usual health and vigor slowly after this attack.

In the early morning of December 13, 1896, he awoke with a chill, cough, and pain in the left chest. I found him suffering pretty severely — temperature 99°, pulse 100, respiration 25. There was a dry friction rub a short distance outside the left nipple, chest examination otherwise not abnormal.

In the evening his chart showed temperature 102°, pulse 120, respiration 32; but he was largely relieved of his pain and the cough was less troublesome.

In the next two days the temperature had gradually fallen to 99°, with disappearance of the friction sound and no evidence of effusion.

On the afternoon of December 16th, the third day of his illness, he had another chill, with more cough, rusty sputum, elevated pulse, temperature and respiration. Examination showed an area of consolidation, apparently about the size of the palm, in the left axilla, extending into the back.

The temperature began to fall next day, and December 19th reached 99.5°.

From this time till December 25th the temperature remained a little elevated — around 99°, pulse about 100, and respiration somewhat elevated.

Subjectively he was feeling pretty well, except for considerable sweating and a continuance of the cough, with a little yellowish tenacious sputum. The area of consolidation was less distinct and showed numerous coarse and medium moist râles — as is usual in the resolution of a pneumonia.

From December 25th the temperature gradually rose till it reached 103° on December 28th, and during this time he coughed up a good deal of dirty brown sputum, with an extremely offensive odor. The appearance of tympanitic resonance in the upper part of the chest with flatness below, and a well-marked *succussion sound*, coincident with profuse sweating, great prostration and beginning delirium, made it evident that there was now a *pyo-pneumothorax*, secondary to gangrene of the lung, which had sloughed into the pleural cavity.

On December 28th nearly two quarts of brownish, offensive pus were drawn from the left chest by aspiration.

Next day he was given chloroform, Drs. Torrey and Manchester assisting, and after excising some three inches of the seventh or eighth rib in the posterior axillary region an opening was made into a cavity containing, by estimate, three quarts of the sanious stinking pus, with some shreds of sloughy tissue. Just opposite the opening was a softened, gangrenous portion of lung, with a clearly defined hole the size of the little finger, through which could be seen a bubbling during respiratory movements. The ragged, loose sloughs were scraped away with the finger, the cavity flushed with sterile water, two large drainage-tubes stitched in place, and the external wound partially closed. There was a good deal of shock following the operation, but the patient rallied in a few hours, and during the next week there was a marked improvement in his condition — less sweating, mind clear and free discharge from the tubes. This was followed by more sweating, more delirium, irregular temperature, increasing prostration and diminished discharge from the tubes, till January 9th, when he was again given chloroform, Drs. Torrey and Shatswell assisting. The wound was enlarged by a long semicircular incision, and another rib hurriedly excised to give easy access to the inside of the chest. Some three inches above the original opening a constriction was found, the dilatation of which allowed the escape of a large amount of foul pus, and disclosed a cavity extending upwards beyond the reach of a urethral steel sound, but apparently not extending very far laterally.

After thorough dilatation of the narrowed outlet, and flushing the cavity, two large rubber drainage-tubes, the shorter one fenestrated, were carried up some six and ten inches respectively, and stitched in place *inside* the chest wall, thus giving an opportunity for repeated flushings of the whole cavity.

During the next twelve hours the patient was in a precarious condition — one bordering on collapse — then he began to rally and had a violent chill. From the day following the second operation till the early part of February his condition was that of profound sepsis — more or less delirium, some sweating, irregular temperature and rapid, irregular pulse, which required a good deal of stimulation.

During this time, as throughout his illness, he was able to take and assimilate an extraordinary amount of nourishment, which undoubtedly saved his life.

Cough was often troublesome while the tubes were in place, and required more or less morphia and codeia for relief. There was a good deal of sputum — often six to eight ounces in twenty-four hours — at times having a very foul odor, and sometimes containing blood in streaks and occasionally one or two ounces clear blood. Odor is last recorded on February 18th and blood on March 23d.

Examination of the sputum by Dr. Sargent showed numerous staphylococci, streptococci, pneumococci, and on one or two occasions tubercle bacilli. There was more or less delirium till the middle of February.

Patient took his first meal in the dining-room February 19th.

The discharge from the wound lost its odor a few days after the second operation. The cavity was irrigated daily for three or four weeks, then every second day till about March 1st, after which time it was done only occasionally, as each irrigation was followed by a rise of temperature, as shown by the chart. The fluid used for irrigation was at different times sterile water, boracic solution, Labarraque's solution, creolin and permanganate of potash in weak solution.

On two or three occasions, soon after the first operation, the irrigation caused severe coughing, the patient detecting the taste of the Labarraque's solution used in the irrigation. The discharge was pretty free till about the middle of April, and from that time the longer tube was gradually shortened, till both were entirely removed about June 1st.

The patient spent the summer inland, and by autumn considered himself as well as ever. His weight is now two hundred and ten pounds — some twenty pounds more than he ever weighed before.

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[1] Read before the Essex South District Medical Society, April 12, 1898.

In order to show more plainly his present condition he has kindly consented to come here to-night, and will remove his clothing, that those who care to may examine the chest.

The amount of respiration and expansion of the affected side seem to me to be very satisfactory. Measurement shows a scant inch difference in the circumference of the two sides.

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Medical Progress.

REPORT ON DISEASES IN CHILDREN.

BY T. M. ROTCH, M.D., AND A. H. WENTWORTH, M.D., BOSTON.

THE DIAZO REACTION IN THE URINE OF INFANTS. — UMIKOFF.[1]

UMIKOFF gives the results of his examinations of the urine from one hundred and forty-seven infants. The infants varied in age from four days to four months. The diazo reaction is never present in normal urine. Elevations of temperature do not favor the production of the reaction. The same is true of catarrhal pneumonia, diphtheria, varicella and various diseases of the respiratory and gastro-enteric tracts, the skin, etc. In erysipelas and measles the diazo reaction can almost always be obtained. The intensity of the reaction increases with the severity of the erysipelas and measles. In a majority of diseases which terminate fatally the diazo reaction can be obtained a day or two before the infant's death. The test has, therefore, considerable prognostic value in those cases in which the reaction is intense.

A NEW DIAGNOSTIC SIGN OF MEASLES. — KOPLIK.[2]

Koplik calls attention anew to a pre-eruptive sign of measles which he first described in 1896.[3] Further experience has convinced him of the pathognomonic value of this sign at a time when a positive diagnosis of measles is impossible, that is, from twenty-four to seventy-two hours before the appearance of the exanthem on the skin. This phenomenon consists in an eruption of minute bluish-white specks, surrounded by a reddish area upon the mucous membrane of the cheeks and lips. These minute specks are but lightly attached to the mucous membrane, and may become rubbed off if the mouth has been washed. In some cases only a few red spots with their central bluish specks are observed, but in other cases the whole lining membrane of the cheeks and lips may be covered. As distinguished from other deposits upon the oral mucosa, these bluish specks never become white and opaque, like "sprue" spots, nor do they coalesce and become plaque-like in form, but always retain their punctate character. As the exanthem on the skin appears and spreads the eruption on the mucous membrane of the cheeks and lips becomes diffuse, and the character of a discrete eruption or spotting disappears, leaving an intense general redness simply dusted over with myriads of the bluish-white specks. When the skin eruption is at its height the buccal eruption begins to fade, and gradually disappears, even while the exanthem is still out. In the later stages of the fading skin eruption the phenomenon is no longer seen. The great value of this sign of measles lies in the fact that its early appearance in the pre-eruptive stage enables the physician to isolate cases much earlier than has previously been possible, a proceeding that must be of inestimable value in hospitals and institutions where epidemics of measles are justly dreaded.

In differential diagnosis also this sign is of value in distinguishing measles from other eruptive diseases and from skin diseases resembling it. Among these are rötheln, scarlet fever, beginning influenza, forms of erythema multiforme, and some efflorescences from drugs.

This sign can be seen only in very strong daylight falling from a window directly on the mucous membrane. It is necessary to evert the lips and cheeks either with a spatula or with the finger.

[We can confirm the existence of this sign in the pre-eruptive stage of many cases of measles, and have come to attach great value to it as an aid to early diagnosis. If detected early it furnishes a most reliable means of distinguishing measles when the early eruption assumes the maculo-papular form so suggestive of variola.]

THE VALUE OF KOPLIK'S SIGN IN THE EARLY DIAGNOSIS OF MEASLES. — LIBMAN.[4]

Libman has been able to confirm, by the examination of fifty cases of measles, the diagnostic importance of the bluish-white spots upon the mucosa of the cheeks, signalized by Koplik as a constant phenomenon of the period of incubation.

One of these observations is particularly instructive as to the value of Koplik's sign in permitting early isolation of cases of measles in children's hospitals. The case was that of a boy, age six years, who for three days had complained of cough, with fever and pains in the chest. At the time of admission he had no trace of coryza or of conjunctivitis. There were only the signs of a slight bronchitis, with a mitral murmur and hypertrophy of the left ventricle. The temperature was 101.8° F. The diagnosis was at first doubtful, but the mouth revealed Koplik's sign. The child was at once isolated, and two days later the eruption appeared.

Since this experience Libman has made a point of daily examining the mouth of every patient in his service. A few days after this precaution was adopted he found the sign in another child, and later in nine others. These ten children were immediately isolated. All of them developed the eruption twenty-four to forty-eight hours later. On the other hand, no child failing to show the sign in the mouth subsequently developed measles. The author has never found the spots in other affections than measles. In a case of erythema nodosum and in one of tertiary syphilis somewhat similar spots were observed, but they were clearly distinguished by their larger size and by the absence of the zone of peripheral congestion.

BRONCHIAL STENOSIS RESULTING FROM THE PERFORATION OF PERI-BRONCHIAL LYMPH GLANDS INTO A BRONCHUS. — NACHOD.[5]

Nachod reports the case of a six and a half year old boy who had been ill for five days with cough.

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[1] Jahrbuch f. Kinderheilk., Bd. xliv, p. 335, w. Bd. xlvi, 1897; Fortschritte d. Med., August 15, 1898, No. 16.

[2] Medical Record, April 9, 1898; American Journal of the Medical Sciences, vol. cxvi, w. 2, h. 248, 1898.

[3] Archives of Pediatrics, December, 1896.

[4] Medical Record, June 11, 1898; The American Journal of the Medical Sciences, vol. cxvi, w. 320, h. 723, 1898.

[5] Prager med. Woch., No. 33, 1897; Jahrbuch. f. Kinderheilk., Bd. xlviii, Ht. 2 u. 3, 1898.

hoarseness and constantly increasing difficulty in respiration. At the time of his admission into the hospital there was cyanosis of the cheeks, well-marked inspiratory and expiratory stridor and retraction of the intercostal spaces and lower ribs. The voice was clear and there were no movements of the larynx with respiration to indicate obstruction in the larynx. There was a diffuse bronchitis with evidences of an emphysematious condition of the lungs. There was no elevation of temperature, the pulse was strong, and the urine did not contain albumin. Intubation increased the difficulty in respiration and the tube had to be withdrawn. The cyanosis and dyspnea varied in intensity at different times but were never entirely absent. There were no attacks of complete cessation of respiration. During the night and following day the condition remained the same. The respiratory sounds were somewhat diminished over the right lung. The percussion sounds were resonant. A diagnosis was made of obstruction of the right bronchus and tracheotomy was performed. The operation brought no relief. Small particles of softened material were removed from the right bronchus by means of forceps. The insertion of a tracheal canula was followed by a sudden and complete cessation of respiration, intense cyanosis and contractures of the extremities. Artificial respiration was resorted to and resulted in the expulsion of two caseous masses almost as large as a walnut. The symptoms immediately subsided. The examination of the eliminated material showed it to be a caseous lymph gland. Tubercle bacilli were not found. The expulsion of the caseous material was followed by a right-sided pleurisy, from which the patient recovered.

ABSCESS OF THE BRAIN IN INFANTS. — HOLT.[6]

Holt reports five cases of abscess of the brain in infants, together with a summary of twenty-seven collected cases, in infants and young children. His conclusions are as follows:

(1) Abscess of the brain in children under five years is rare.

(2) The principal causes are otitis and traumatism.

(3) It rarely follows acute otitis, but most often neglected cases, and is usually secondary to diseases of the petrous bone.

(4) In the cases occurring in infancy without evident cause the source of infection is probably the ears, even though there is no discharge.

(5) The development of abscess after injury to the head without fracture of the skull is extremely rare. In nearly all of the traumatic cases definite cerebral symptoms show themselves within the first two weeks after the injury. In cases with falls, as remote as several months, there is probably some other cause, such as latent otitis.

(6) In a large proportion of the cases only general symptoms are present, and these in very great variety.

(7) Focal symptoms may be misleading unless they are constant, and even then they may depend upon associated lesions, such as meningitis. Motor symptoms only can be trusted, since the sensory symptoms are difficult or impossible to determine in infants or young children.

(8) Rapid progress, fever, and a history of injury or otitis generally make a diagnosis from tumor easy. In the slower cases with little or no fever valuable assistance may be obtained from lumbar puncture.

(9) From acute meningitis the diagnosis is more difficult, and in the cases in which there are only terminal symptoms the diagnosis is impossible. In the more protracted cases the distinctive points with reference to abscess are the slower and more irregular course, and, as a rule, a lower temperature.

(10) On account of the great amount of shock attending brain surgery in very young children operation should not be urged unless definite localizing symptoms are present, the principal one being hemiplegia.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

REGULAR Meeting, Monday, November 7, 1898, the President, DR. R. H. FITZ, in the chair.

DR. CHAS. W. TOWNSEND showed a case of

CONGENITAL CRETINISM.[1]

DR. ROTCH: It is very important to recognize this class of cases, sometimes they are overlooked. Very remarkable results have been obtained in quite a large number of instances by treatment. Cases in this apparently idiotic condition have, under the use of thyroid extract, gradually developed mentally and physically. I recall a case in another city where the child was even worse looking than the one you have just seen, and which rapidly recovered. I was about to include this in a report of some of these cases, when I received a telegram requesting me not to do so, as the patient had become a belle in the city in which she lived.

AN INVESTIGATION AS TO THE FREQUENCY OF TYPHOID FEVER IN INFANCY.[2]

This was the title of a paper by DR. J. L. MORSE and MR. H. W. THAYER.

DR. ROTCH: There is nothing more to be said. The Pediatric Society discussed this question very thoroughly, and the conclusion they came to was that it is very rare in early life. There is a specimen in the Pathological Museum at Washington of a child of two years who died of typhoid fever, and the bacillus and pathological conditions were found. I think these investigations are exceedingly valuable, as they confirm bacteriologically what has long been believed from clinical observations.

THE TREATMENT OF CLEFT PALATE, OPERATIVE AND BY THE USE OF OBTURATORS.

DR. BEACH: Dr. Warren, having been called away, asked me to present for the inspection of the Society these instruments, which now have an historic interest. The first set was made by his father's direction and used by him in his operations upon the palate.

The name of J. Mason Warren was associated with cleft-palate operations early in his career, he having published his important modification of the accepted operation in 1843.

His new operation provided for a division of the attachments of the soft palate to the tonsil and posterior pillar of the pharynx, and included a section of the tensor and levator palati muscles.

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[6] Archives of Pediatrics, vol. xv, Nos. 2 and 3, 1898.

[1] See page 37 of the Journal.

[2] See page 36 of the Journal.

Sufficient relaxation of the tissues was gained in that way to admit of an easy approximation by sutures of the freshened borders of the fissure. These are the curved scissors and double-edged knives with which Dr. Warren carried his dissection from the tip of the uvula to the incisor teeth.

The second set is that devised by Baron von Langenbeck, who made a special feature of the instruments for separating the mucous membrane of the hard palate from the bone. The exceptionally beautiful result in the case presented by Dr Porter supplies a strong argument in favor of the protective plate of vulcanite used after these operations. The best results as shown by speech that I have ever seen after operation have been those exhibited by Dr. Porter in the past few years. So far as I have been able to judge of them, their explanation is in the marked flexibility of soft parts obtained by free dissection, the adaptability of the cases by their anatomical conformation to operation, and the use of the vulcanite plate in protecting the line of union from tongue pressure in healing.

My interest in the vulcanite plate began in student days as an assistant to Dr. H. J. Bigelow. It was my fortune to see a number of these cases before, during and after their operation by the hospital staff. It had then become the custom to unite the edges of the soft palate, leaving the hard-palate fissure to be filled by an obturator in many of the cases.[2] Failure of union was of such common occurrence that in considering the reasons for it I contrasted it with the success then obtained in vaginal surgery. This suggested the use of silver wire, with the objection that it would prick the tongue in swallowing. To prevent this, and to diminish the pressure of the tongue on the line of union while swallowing, a plate, fastened in place after the operation, appeared to be a natural expedient. Upon inquiry of Dr. Bigelow if the plan would be practicable, he very kindly approved of it and proposed to operate and use it.

The patient had a cleft that extended from the tip of the uvula to the incisor teeth. The plate was made by Professor Shepard, of the Harvard Dental School, and was tied in place after Dr. Bigelow had finished the operation.

At the end of a week the plate and sutures were removed and the union found complete.[3]

Later on, the evolution of obturators, and their advantages over operations in the improvement of speech in average cases, led to their general adoption. The operation had become of secondary importance in many instances, and with it the plate devised for the protection of the wound in the healing process.

Dr. T. Fillebrown: I am very happy to be here to-night and respond to the kind invitation given me to say a word in behalf of an operation which I think is very useful, and important because of its usefulness. We all know, as the speaker has said, that about twenty-five years ago it fell into discredit on account of its being so infrequently successful, surgically or physiologically. Dr. Kingsley perfected the obturator so that it seemed to supply the wants of patients, and the operation fell into disuse. Dr. Porter, however, has continued to have more or less faith in it, and has operated from time to time, even from the days of Bigelow, so that it has been kept in public notice somewhat, and within a few years the interest in it has been revived, and I, for one, believe that its usefulness is now well established. I have had considerable experience within the last few years, and have taken a great deal of interest in the subject, and I now believe the operation can be made as uniformly successful as are other operations of like magnitude, and I think the method I use accomplishes it. My methods of operating are a little different from those described by Dr. Porter and by Dr. Beach, and they are such that no necessity for a guard plate exists, and consequently I can do the operation at an age too young to wear a guard plate. Wire sutures and discs will resist any pressure that will be made with the tongue. If one finds a guard plate necessary there is certainly no objection to its use. It fell to my lot to make the first guard plate that was made in the Harvard Dental School. In 1869 Dr. H. J. Bigelow did an operation, and I made the plate for the case. The result of the operation was an almost complete failure. On another point I am obliged to differ with Dr. Porter, and that is in regard to the age of the patient. It certainly is possible and reasonable, and I believe best, to do it much earlier than six years old. Dr. Brophy, of Chicago, has had unusual opportunities and good courage, and has done the operation for very young patients, even babies less than twelve months old. The youngest that I have had an opportunity to operate on was eighteen months old, and in that case I had just as good success as with the older patients.

I have here a few models which will give a more intelligent idea of what I have accomplished. One is of a child two years old. The operation was a hard one to do; it was the first small mouth I had operated on and my needles did not curve to suit the case. This made it difficult. The baby has a perfect mouth to-day. When he went home there was a little opening at the union of the hard and soft palates, but after a few weeks it filled up by granulations.

There is a great disinclination on the part of nature to unite the parts at this point. I hope to see this reluctance overcome entirely.

I have here several models of the mouths of patients on which I have operated quite recently: one eighteen months old, two two years old, one five years, one eight years, one seventeen years, and one thirty-five years of age. Here are two models of mouths on which I shall do the operation in the immediate future. One patient is eight years old, the other twelve years. The mouth of the younger is quite easy to close, although the fissure extends quite far forward, because it is comparatively narrow. The fissure in the mouth of the twelve-year-old is difficult to close because of the excessive width of the fissure at its apex, opposite the first temporary molar. I commence at the upper border of the cleft and dissect off the tissue, including the periosteum, with a hoe-shaped instrument, nearly down to the teeth. To hold the parts in position, I insert wire above the flaps, coming through them and fastened with silver discs. The edges in the middle line are held in close apposition by fine interrupted silk sutures. I ordinarily use four sets of the discs in a mouth, which render it proof against any force the tongue will exert in swallowing.

The physical conditions resulting from the operation are very gratifying. The patients breathe better, eat better and sleep better, and, as a consequence, gain in flesh. The physiological results are also very satisfactory. One patient, six years old, could not do an errand except he had a written note. A few months after the operation he entered the public school and got along perfectly well, yet he had no special training. Another, twenty-four years old, is in business, and customers notice no peculiarities of speech. Another, six years old, speaks perfectly plain, and can whistle with the rest of the boys. He lives so far from town it did not seem reasonable to ask his parents to bring him here. One patient, seventeen years old, whose mouth I operated on five months ago, has kindly consented to be present to-night, and will show what has been done surgically, and in some degree the physiological results that may be obtained. His inability was so complete that only intimate acquaintances could understand what he intended to say. He has had excellent drill in articulation from Mrs. Carolyn Proctor, and in the near future all remaining peculiarities of voice and speech will disappear. (Patient speaks.)

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[2] Surgical Observations, 1867, J. Mason Warren.

[3] Clinical Lecture on Cleft Palate by Professor Bigelow, Boston Medical and Surgical Journal, February 4, 1869.

To show the results of an early operation in after life a young lady has responded to my invitation to be here to-night. Her mouth was operated on by Dr. S. C. Gordon, fourteen years ago, when the patient was three and one-half years old. She moved to Boston nine years ago and no one of her acquaintances here has ever mistrusted she ever had any deficiency in her speech. (Patient reads.)

I believe the operation for cleft palate ought to be done just as the child is beginning to talk. It may be done so early that the child will never realize it had any deformity.

DR. P. W. MORIARTY: I came here to-night supposing our patients would talk, not ourselves, and I have promised some of my patients who live out of town that they can leave at 9.45 o'clock. I will reserve any remarks I may have until after you have heard my patients. Dr. Baker, I believe, has some patients also, and they are anxious to get home. The first patient is a lady from Lowell, for whom I inserted the appliance two or three months ago. (Patient talks.) I have here a little boy for whom I inserted the appliance at the age of three and a half years The appliance that the lady wears is a hard-rubber appliance; the boy wears a soft-rubber appliance. None of my patients have had any training. (The boy talks.) The next patient is a patient who has been operated upon — a child for whom I inserted an appliance at the age of three and a half. The cleft was a very narrow one, and if any operation should have been successful, it ought to have been successful. Dr. Richardson advised the mother not to allow another operation. This child is in a boarding-school, and does not have the training that the other boy has. The next patient is a young man who has had an appliance in about eight or ten months.

DR. H. A. BAKER: I received an invitation to come before this meeting this evening, but do not bring a long, tedious paper, nor do I think it would be of interest to you to give a detailed account of the way I construct my appliances for cleft palate, but simply give you a practical demonstration of the improvement in speech produced by wearing them, and I have a few patients with me who I trust will do credit to themselves as well as the appliance. I will leave you to be the judge, and will simply add that I have used many different kinds of appliances of various forms, but the one I present to you to-night I have found the most desirable of any, and unhesitatingly say have obtained the best results from it.

CASE I. The first patient I present to you is a man for whom I am about to construct an appliance, for I consider it a typical case of cleft palate. It is a good illustration of how well a patient can enunciate before wearing an appliance. I do this for the reason, that, after a patient's speech has been corrected by wearing one, he speaks better without it than he did before he ever wore one.

CASE II. I made an appliance for this man several years ago. As he did not acquire speech as rapidly as in most cases, we thought it advisable to have him take a few vocal lessons, which he did, and received some benefit. As Dr. Langmaid said, the improvement was quite marked; but if he had continued with his teacher the improvement would have been very satisfactory. This is the only case that I present where the patient has had any training for the improvement of the voice. All of the others have acquired speech naturally.

CASE III. This woman has worn an appliance about seven years, and, as you see, has of her own accord acquired very good speech.

CASE IV. This man has had the appliance about eighteen years. As objections have been made in regard to the appliance wearing out, this proves that the facts are quite the reverse, for he now is wearing the original appliance.

CASE V. This case has quite an interesting history. After this appliance had been worn about fifteen years the patient came to me with one of the clasps broken from the plate and the other one slightly fractured. He wished the clasps replaced. I took the plate and broke the other one off. I could not attend to it at once, so told him to come in in a few days, and he would have his plate as good as new. His reply was, "It is absolutely impossible for me to go without it." I said if he could wear it in the condition it was he was welcome to it, feeling at the same time that it was impossible to keep it in place. He put it in his mouth and went out. I did not see him again for years, until recently I met him on the street. Much to my surprise, he was still wearing the appliance with no inconvenience whatever. It is remarkable that he could wear so much in his mouth without its being attached to the teeth. It therefore proves the perfect adaptation to the parts.

CASES VI and VII. I think you will agree with me, if you did not know that these patients had cleft palates you would never suspect but that they had perfect organs of speech, and I think that was well proven in the following: Last winter one of these patients came into my office when a teacher of voice culture was present. After being introduced and talking some time together, the teacher was informed that the patient was wearing one of my appliances, whereupon the teacher remarked that not the slightest defect in speech had been detected.

If I believed that we could get good results from a surgical operation I would recommend it every time, for it would be preferable to having anything in the mouth. Although I have had only two reports of inconvenience from wearing the appliance, still I have had between one and two hundred cases come into my hands, and I have seen but one case in that number where I thought an operation was advisable. That one I referred to Dr. Warren. I do not know whether it was operated upon or not. It certainly was an excellent case for surgical interference, and I believe good speech would have followed. One of the cases presented here to-night, that had been operated upon by Dr. Gordon, was a similar one. It is my opinion that not one case out of five hundred could be operated upon surgically and obtain such results.

One case out of ten that have come to me for treatment has been operated upon surgically with no beneficial results.

Dr. Gordon's case is the first one I have ever seen that approached success in speech from a surgical operation. I think nearly as good result could have been obtained without any operation.

I understood this was a meeting to show results, not to talk about the good results we have accomplished for patients who are not present. I have simply endeavored to try to present a fair average. As I said before, I leave you to judge.

Dr. Langmaid: I happen to know this young man of Dr. Baker's very well, and have known him a couple of years, and I would say the improvement in his speech is very marked. I wanted to ask Dr. Baker if he did not think the apparatus he first put in, which was outgrown, rather hindered his acquiring as good speech as he has now. If I remember correctly, Dr. Baker put in an apparatus when the patient was much younger. He seems to have outgrown that, and afterwards he put in the apparatus the patient now wears, and certainly with the instruction, and this new apparatus, the speech is improved very much.

Dr. G. F. Grant: I have no patients to exhibit. As I understand it, the point to be established is the efficacy of mechanical appliances. I am very sorry that Dr. Porter and Dr. Warren were obliged to leave, because as long ago as 1869 or 1870, when I was in the Harvard Dental School, I took up that work, and while I do not wish to claim any great credit for converting Dr. Bigelow, I think some of the work I did at that time had a great influence on his mind — at least he told me so. There are one or two points in regard to these operations for cleft palate that I have not heard touched upon, which seem to me might have a great influence in determining an operator as to whether a surgical operation should be performed. The general idea seems to be with surgeons and others, who do a great amount of operating for this defect, that all these clefts are alike. Now it is very often the case that the palate is not only defective by lack of union but it is also defective by being short, and it is a physical impossibility to get contact if you operate under the most favorable circumstances on a short palate. I have seen perfectly normal palates that were short, and speech was no better than you find in these worst cases that are presented. In fact, I think Dr. Baker will agree with me, and I think the surgeons will agree with me on this point, that as a rule a cleft simply of the soft palate is quite often accompanied by a much worse articulation than where the cleft is entire and extends forward to the incisor teeth, even sometimes where the intermaxillary bones are missing. I do not know that I can offer any explanation of that. Another thing is also true, and that is that those cases which appear the worst to look at on the cast are almost always the easiest to treat by mechanical means. Arguing on the side of the desirability of inserting mechanical appliances, I have only this to say: You have all seen that physiologically it is successful. If you operate and it fails, you make the mechanical operation, if not a failure, at least greatly inferior to what it would have been if it was not touched. I have seen a great many cases which have been operated on where the union appeared to have been perfectly complete, just as complete as the one Dr. Fillebrown operated on, or that case of Dr. Gordon's, and I wish to remark that Dr. Gordon's case is the first and only one I have seen among over a hundred which had a good articulation as a result from surgical treatment. That is a very small percentage, and I attribute the success of that operation not so much to the perfect union that was obtained, but merely to the accident that there was plenty of material there, so that after the formation of the cicatrix there was still enough left to produce contact with the pharyngeal wall. If you do not get it you cannot get articulation. If you get it mechanically you are sure of it. It does not matter what kind of appliance. As Dr. Baker says, we have worked upon this thing to bring it to its very highest point of development, and it seems that if an artificial appliance can be inserted without pain and without risk, and can be worn twenty-five or twenty-eight years, as some of mine have been worn, it ought to result in a very careful selection, at least, of the cases on which it is attempted to perform a surgical operation.

Dr. Beach: I would like to ask Dr. Fillebrown how essential he considers the silver button he uses as a part of his operation.

Dr. Fillebrown: I consider it the essential point.

Dr. Beach: That has already been used. You will find in Dr. J. Mason Warren's instrument case leaden buttons perforated, I should think, by three or four holes. There are two plates that I have taken out and laid on the top of the case. They were used more or less in his time in cases where there was great tension.

Dr. Fillebrown: That was on the soft palate?

Dr. Beach: Soft and hard palate.

Dr. Fillebrown: I was not aware they were used on the hard palate, — yes, David Prince, of Illinois, used them ten years ago.

Dr. Beach: There are the buttons. They are not shaped quite like Dr. Fillebrown's, but answer the same purpose in preventing the separation of the united flaps by the pressure of the tongue.

Dr. Fillebrown: It is another application of the quill suture. I use nothing original except the combination and the incisions in the sides of the throat, and the way I combine them gives these uniformly good results. The flaps do not draw apart.

Dr. Moriarty: As the hour is getting late I will say but a few words. I think that the surgeons ought to inform the patients whom they meet of what the dentist can do. If a child has a cleft palate the parents naturally go to the family physician, the family physician refers the parents to some surgeon, the surgeon says an operation must be performed. The father and mother see that there is an opening and imagine that all that is necessary is to close that opening. The surgeon says that is all that is necessary and the result is that they have an operation performed. Now there is a class of cases which cannot afford to pay for an appliance who can have it done at the Harvard Dental School; we cannot in fact get patients enough. I do not yet admit that the surgeon can perform this operation successfully and enable the patient to speak correctly. If he could, I would be only too glad to advise any patient who came to me to go to the surgeon. At the present time I would advise the father or mother who asked me for advice to wait until assured that an operation would be a success; in the meantime for the child to wear an appliance and the articulation will be so much improved; that he will have an advantage that less fortunate children do not have, will have learned to articulate with an appliance before having an operation performed. I have seen many operations, I have made many guard plates for the Massachusetts Hospital; I have never interfered with the surgeon's work by advice or otherwise, and I am only looking for the best methods of treatment. The dental profession has established a good reputation for this sort of work, and as one of the profession I should be sorry if, by my silence, I seemed to acknowledge that the surgeons were doing this work better than the dentists can do it. I hope I may be able to do so some day.

Dr. Beach: It seems to me that Dr. Moriarty has presented the question fairly, and that he is in accordance with the experience of many of the surgeons who have to do with these cases. Now and then you will see a case with a good result where a patient has satisfactory speech afterwards, but it is a rare occurrence. I can recall but very few. The experience and judgment necessary for the selection of suitable cases for operation must be drawn from a large amount of operating. The very best of the cases operated upon that I have ever seen compare well with some of the best I have heard speak to-night with the assistance of apparatus. The annoyance of having an appliance in the mouth, taking it out, cleaning it, as one must an artificial plate for teeth, might prove very disagreeable to some people. On that account, undoubtedly, some will choose the operation, in spite of the advice that an obturator may supply better speech. I remember last year at the hospital a man whom I sent to the dentist for the purpose of having appliance made. He finally decided that he would prefer to have an operation, and re-entered the hospital for that purpose. My operation was successful in closing the fissure, but I believe that an obturator would have supplied better speech. When parents have to decide this point for a child it seems only fair to let them know exactly what the great advantages are of apparatus; also the uncertainties of operation, which, owing to the deficient amount of plastic material supplied in some cases, prevent anything but a rigid line of cicatrical tissue as a result; also, that the best results from obturators are not likely to follow unsuccessful operations.

Dr. Fillebrown: I have no contention here to-night with artificial appliances. They are good. I have made them myself, have been successful with them, and I know them to be excellent. It is not every patient who wants an operation performed; many will not submit to it, and it is a good thing they can have their deficiencies supplied by the artificial means. I rather think I am in a minority of about one in New England as to confidence in the value of the surgical operation. It has been said that the surgical operation does not succeed, and this one patient is all that has been seen that is perfect. If I could command my patients I could show you more; one a young lady who talks just as plain as that one to-night, but she could not be here. The boy seven years old that I mentioned talks as plainly as either of these patients. It was not reasonable to ask him to come in to-night. Now this thing will settle itself. If this surgical operation is successful it will prove itself so. It has been tabooed for many years, and it has been only lately that I have seen my way clear to make the operation a success. Our friends with artificial appliances have the advantage of twenty years' start. When my patients have grown up and are old enough, you will, I believe, find them able to speak with the best. Training is not all obtained from professional teachers. The boy I spoke of has not had a particle of training outside his own home, but has had a good example there and has learned to talk well. I have another boy I operated on, whose mother is dead, and he has an aunt to mother him; she is very deaf, so he has not had much of a chance for training or example, yet he has made good progress. The young lady I spoke of had not a particle of training outside her own home, and yet she spoke before a society in this city and the members pronounced her speech perfect. Let the matter rest. If a surgical operation is good it will sustain itself; if not successful it will make its failure evident. The value of mechanical appliances has long been established and needs no defence. I believe in the near future the physiological results of the surgical operation will be as fully recognized.

Recent Literature.

Practical Uranalysis and Urinary Diagnosis: A Manual for the Use of Physicians, Surgeons and Students. By Charles W. Purdy, M.D., LL.D., (Queen's University); Fellow of the Royal College of Physicians and Surgeons, Kingston; Professor of Clinical Medicine at the Chicago Post-Graduate Medical School. Fourth revised edition. With numerous illustrations, including photo-engravings and colored plates. In one crown octavo volume, pp. 365, bound in extra cloth, $2.50 net. The F. A. Davis Co.

This work has a well-established reputation as a practical text-book upon the chemical analysis of the urine. In this edition the author has made several important additions and changes, bringing the subject of the chemistry of the urine well up to date.

The book contains full details in regard to the application of the centrifugal methods to urinary analysis. For the successful utilization of these methods in practical urinary work the profession is indebted to Professor Purdy. Their inception has marked a most important advance in this work. These methods have now been in general use for several years, and the value of the centrifugal process for collecting sediments, or for making approximate quantitative determinations of albumin, chlorine, phosphates, etc., is attested by all who use them.

In the chapters upon albuminuria the author rightly criticises the heat test for albumin as generally applied, as wholly unreliable. The modification of this method which he offers seems to us a good one. We have not, however, been able to convince ourselves of the advantage of the author's test for sugar over the Fehling test.

The excellence of the subject matter in the section of the work dealing with the Chemistry of the Urine leads one to expect an able treatment of the subject of the second section, Urinary Diagnosis. In this, however, one is disappointed. The chapters upon diagnosis seem to us wholly superficial and incomplete. One looks in vain for any thorough effort to associate the clinical symptoms and urinary findings in the separate diseases with the pathological changes in the tissues which underlie them. Such a failure is fundamental as regards the usefulness of this part of the work. Also it has led to groupings of clinical urinary symptoms which would tend to cause confusion when used in the application to practical work. Thus in the description of the sediment of acute nephritis no mention is made of the fatty elements which occur when, as is usual in the course of this affection, the process of fatty degeneration is superimposed upon that of granular degeneration of the renal epithelium. This is but one instance of several open to the same criticism.

To study urinary diagnosis from a work developed upon these lines is to reverse the modern method of learning.

An Introduction to Pathology and Morbid Anatomy. By T. HENRY GREEN, M.D., F.R.C.P., Physician and Special Lecturer on Clinical Medicine at Charing Cross Hospital, etc. Revised and enlarged by H. MONTAGUE MURRAY, M.D., F.R.C.P., Physician to Out-patients and Lecturer on Pathology and Morbid Anatomy at Charing Cross Hospital. New (eighth) American edition, thoroughly revised from the eighth English edition by WALTON MARTIN, Ph.B., M.D., Assistant Demonstrator of Anatomy, College of Physicians and Surgeons, Columbia University, etc. Philadelphia and New York: Lea Brothers & Co. 1898.

As its name implies, this book is a rather unpretentious volume. The subject matter is perhaps as well treated as can be expected in a book of its scope and size. It is evidently written for medical students, and from the fact that eight English and American editions have been published, it must clearly have had a popularity among such students. The book, however, is much inferior to certain other text-books on pathology, and its sole recommendation now is its comparatively small price.

A Hand-book of Hygiene and Sanitary Science. By GEORGE WILSON, M.A., M.D., LL.D. Eighth edition, pp. 798. London: J. & A. Churchill. 1898.

This well-known work has now reached its eighth edition, and up to the publication of the present edition it had maintained a fair degree of harmony with the progress of preventive medicine. The chapters on food, air, water and soils have been carefully revised, and the treatment of these subjects has been brought up to date.

It must be confessed, however, that the work fails to represent the present status of public hygiene. Its extremely insular character forces itself upon the reader, and one is surprised to find in it so little appreciation of the great work accomplished upon the continent. Under the head of Sewage Irrigation we find no allusion whatever to the results obtained upon the great sewage fields at Gennevilliers with the sewage of Paris, nor upon the 20 000 acres under cultivation at Berlin. Nor is any reference made to the results obtained by the treatment of consumptives in sanitaria devoted to that class of patients.

The management and control of infectious diseases is the most important department of preventive medicine, and yet we find the author referring to the "lesson taught by the dismal failure of Koch's tuberculin" as though the question of its therapeutic use was alone worthy of consideration. He also condemns in unmeasured terms Pasteur's antirabic treatment, as well as the use of diphtheria antitoxin.

A work which is so diametrically opposed to the views of the most advanced experts of the present day cannot be regarded as a safe and reliable book of reference either for the student or the practitioner.

Therapeutics of Infancy and Childhood. By A. JACOBI, M.D., Clinical Professor of the Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York; late President of the Association of American Physicians; of the New York Academy of Medicine; of the Medical Societies of the County and of the State of New York, etc.; Foreign member of the Medical Society of Würzburg; of the Obstetrical Society of Berlin; of the Association for Internal Medicine of Berlin; of the Royal Medical Society of Buda-Pesth, etc. Second Edition. Philadelphia: J. B. Lippincott Co. 1898.

In the second edition of his book Dr. Jacobi has been somewhat more explicit in the discussion of doses than in the first edition. It would be well for the general practitioner, who so often makes the mistake of using, without sufficient care, cold water as an antipyretic in infants, if Dr. Jacobi had been more explicit as to the temperature of the water which should be used in special cases.

With this exception, the article on pneumonia is worthy of great praise and should be carefully read by those who are treating this disease in the early months of life. Many of the articles have been carefully revised, and especial attention has been paid to the subjects of diphtheria, general therapeutics and the mouth and throat. There are about one hundred more pages than in the first edition.

Contributions to Orthopedic Surgery. By A. SYDNEY ROBERTS, M.D., with a brief biographical sketch by JAMES K. YOUNG, M.D. Philadelphia: W. J. Dornan. 1898.

It was a happy thought on the part of Dr. Young to collect the various medical essays of the late Dr. Roberts, and publish them as a testimonial to his memory, on the behalf of one who was both a friend and a pupil. As Dr. Young says in his introductory notice, it would be well if the medical profession more frequently followed the custom common in the legal profession, and took notice of the death of prominent physicians.

The articles of Dr. Roberts represent him as an excellent writer, and although their value was greater when they were written than at present, owing to surgical advances in the last few years, yet they serve, as was intended by Dr. Young, as evidence of a clear, energetic mind working earnestly in the branch in which he had interested himself.

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CONCUSSION OF THE BRAIN.

A COMPARATIVE examination of the chapters on head injuries in text-books of surgery leads the critical mind unerringly to the conclusion that the term "concussion of the brain" takes a long time in passing. Even the most recent contributors — with one or two notable exceptions — to the subject of cranio-cerebral traumatisms cling to the expression with deathless tenacity, and apply it to a series of conditions varying from slight vasomotor perturbations to extensive laceration of the cerebral substance.

In ancient times, when the cranial injury was the all-important question to the surgeon, it was excusable to class cases as concussion where there was no discoverable bone lesion and the patient recovered, but in the present era of advanced pathological views the retention of such a crude and meaningless expression as concussion of the brain is a tacit admission of utter ignorance with regard to the entire subject of brain anatomy, physiology and pathology. In the minds of some surgeons the human species is such a rattle-brained race of bipeds that when it receives a stunning blow on the head, the result is a rattling about of nerve cells and neurons similar to that frequently referred to of dry peas in a pod. Such views as this we find current in the books as late as 1887.

To lend additional darkness to the subject, we find writers, even in the last few years, indulging in elaborate differential diagnoses between concussion (sic) and compression. In this connection it may be stated that the average conception of compression is only a trifle less vague than that of concussion, and it is not unfair to say that in the minds of many men the term compression is synonymous with unconsciousness; the deeper the coma in a given case, the greater the existing compression — and this in spite of the teachings of post-mortem examinations.

From the data already furnished by experimental pathology and from the findings on early exploration of the cranial cavity in cases designated concussion in its simplest sense, we know perfectly well that the underlying pathology in these cases is a vasomotor paralysis. We see the blood-vessels engorged and pulsations often absent. The result is an anemia of the brain substance; hence the loss of consciousness, the vomiting and the tossing about of the patient. The whole picture is an exact counterpart of that observed in animals when brain anemia is produced experimentally. If the circulation rights itself before nutritive changes take place in the vessel walls, the patient soon recovers; if it does not, macroscopic lesions are early discoverable.

In the face of these facts the retention of the term concussion by surgeons denotes a lack of appreciation of scientific progress, and yet this does not prevent our constantly hearing it used in medical discussions and find it in hospital records.

Among the mass of medical writings on the subject of head injuries which have appeared in very recent years there are at least two notable exceptions to the general treatment of the subject under consideration. In "A Treatise on Surgery by American Authors," Vol. II, p. 38, Roswell Park handles the matter in the following very succinct manner: "The immediate effect of severe injury to any part of the body is reflex vasomotor spasm, which constitutes the essential feature of the condition known everywhere as 'shock.' It is this condition with its strong local expressions, which used to be known as *concussion of the brain*. When studied upon its merits, it is found to be indistinguishable from shock produced by injuries to other parts. It will be correct, then, to make the general statement that the condition for so many years taught and recognized as concussion is but shock following injury to the head."

In a more recent work, "Traumatic Injuries of the Brain and its Membranes,"[1] the author has established a precedent which may well be followed by succeeding writers on this branch of surgery. He simply dismisses the subject of concussion as too fanciful for serious consideration.

Having, then, no *raison d'être*, why should concussion still be allowed to drag its senseless way through medical writings and retain its position in hospital records? Is not the light of modern pathological knowledge sufficiently strong to dispel the darkness of ignorance which for so many years has hovered over this phase of brain injury?

Traditions are well enough if founded on exact observation,— for exactness of observation is the key to medical progress,— but if we would show that we are progressive we must cut loose from all that are inadequate for the requirements of the present day. Our emancipation from concussion has been slow and tedious. At least let us see that it is complete and lasting. Let us not inflict the term and the confusing mass of incongruities it has been made to connote upon the century to come.

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[1] By Chas. Phelps, New York, 1897.

BREVITY.

Brevity as "the soul of wit" is a sufficiently old adage, but brevity as the essence of effectiveness in other branches of literary endeavor is not sufficiently appreciated. Whether the physician is particularly prone to the error of diffuseness we do not know, but that he is frequently its victim is sufficiently self evident. In three respects we see this defect: first, in the titles of his literary efforts; second, in their substance; and third, in the discussion of the literary productions of others.

We think we are not wrong in noting a growing tendency to crowd too much into the title of a paper; to make of it, as it were, a résumé of what is to follow in detail. Such a title, besides being a cross of the worst sort to the cataloguer, inevitably loses in effectiveness, and does not conduce to a careful reading of the paper as a whole, which naturally is what the writer most desires. To choose a fitting title for a paper is not always an easy task, but other things being equal, we are confident that its strength is in direct proportion to its brevity.

A second error undoubtedly lies in redundancy of words and details in the substance of a paper itself. A paper, particularly when read to others, should, in general, give results, and not the laborious methods by which results are reached. To do this successfully is a high art rarely attained. Its cultivation is eminently desirable, and were it more cultivated no doubt our medical meetings would reassume their somewhat lost prestige.

More important still is the question of discussion. This is a wholly unknown factor; names occasionally appear on programmes, of men who are expected to take part in the discussion. The audience assembles, the paper is read, and the discussion begins, with no limit to discursiveness. It goes without saying that the remarks made are frequently excellent and to the point, but when they are not, the feeling which comes over the hearers is a real menace to attendance in the future. There is a sense of imposition, which conduces to bad temper. Why should not discussion, except in unusual cases, be limited to five minutes? It would help attendance, and be no worse for the speakers.

REPRINTS.

It has become a reckless and almost too universal habit to send out reprints of journal articles. This is done from various motives. It may be from a sincere desire to tell the world something, or merely a polite desire to return a favor received from previous authors, or from vanity — for it is a popular belief that all men enjoy seeing their names in print — or from all these motives conjoined. Whatever the motive the author cannot lose all interest in his article when he has seen it in the mail, and he waits with some anxiety, or possibly with curiosity, to see how great a wave his little pebble makes.

The acknowledgments of a reprint reach usually in number about four per cent. of the reprints sent out, and they come in various dresses. One of the earliest to arrive is a printed postal card, which acknowledges the receipt of a copy of "your valuable paper," with the title and the date neatly written in the spaces left for the purpose, with the autograph of the sender at the bottom. One wonders if the sender ever scratches out the "valuable" and whether he acknowledges all the reprints he receives with the same printed formula, or whether, perhaps, he has different postal cards, which express a varying degree of pleasure. A very fair proportion of the acknowledgments are printed, usually requiring on the part of the sender simply the direction, and one or two awaken the suspicion that all pamphlets are acknowledged as a matter of routine by a secretary. Among these an extremely handsome engraved card, in which Dr. Blank "returns his best thanks for the article kindly sent by you," deserves especial mention as useful in acknowledging printed articles as well as articles from the farm and factory. The official acknowledgments from the libraries are impressive, one might say immense, and encourage the modest man, who has hesitated to impose himself upon shelves already crowded, to send once more if he reaches the glory of a second edition.

But the acknowledgments which he truly values fall far below the four per cent. They are among the written, but do not embrace them all. In the first place, several gentlemen, as compared with the total, return thanks for the receipt of the article; a few make the statement that they have read with interest the pamphlet so kindly sent; a few express the pleasure they expect to have — and this small number embraces the author's personal friends.

Interest reaches a height almost dizzy when a gentleman who was among the first to send his printed card sends a second, on which he has written his thanks for the wider range of vision which is opened to him since he has read your pamphlet.

But the acknowledgments of individuals make but half the fun. The editors, who are constantly searching after some new thing, write a little compliment and an invitation to contribute still further to the enlightenment of the world through their columns. One or two journals write for a copy of the pamphlet, that they may be able to give it proper notice.

Occasionally one reaches the dignity of being made the subject of an editorial in some medical journal. Really such an honor would seem sufficient for any mortal, but the pleasure is half pain when one finds his own words used as a means of castigating a doubter whom there had been hitherto a hope of converting.

But the greatest enjoyment is reached when one finds retranslated into English the condensation of his own article, which has been taken not from the original but from some second- or third-hand notices and one realizes then that it is not well to take one's self too seriously.

MEDICAL NOTES.

Professor Stricker's Successor. — It is announced that Philip Knoll, Professor of Experimental Pathology at the German University of Prague, is to succeed Professor Stricker in the chair of Experimental Pathology in the University of Vienna.

Medical Department, Kentucky University. — The Annual Session of the Medical Department of Kentucky University began on January 2, 1899, under unusually favorable auspices. Kentucky University on January 1st celebrated the one hundredth anniversary of its foundation, it being originally Transylvania University.

The Ninth International Congress of Ophthalmology. — This Congress will meet at Utrecht, August 14–18, 1899. English, French and German will be the recognized languages. There will be three sections, a section of anatomy, pathological anatomy and bacteriology, a section of optics and physiology, a section of clinical and operative methods.

Campaign Against Charlatanry. — A committee has been appointed by the *Aertzekammer* of Brandenburg and Berlin to devise measures to educate the public to the dangers of consulting quacks, and the benefit to be derived from scientific medical attendance. The committee offers a prize of 300 marks for the best pamphlet on the subject by a physician of Germany, which is to be distributed broadcast among all classes of society. Schwalbe and Eulenburg are among the ten members of the committee. — *Journal of the American Medical Association.*

Schleich's Mixtures for General Anesthesia Condemned. — Dr. Henry J. Garrigues writes to the editor of the *Medical News* that since he published in November 12, 1898, an article in that paper which was on the whole commendatory of Schleich's Mixtures for General Anesthesia, his views have changed, and that in the light of recent experience with five cases in which the effect on the respiration was dangerous to the patient, he does not feel warranted in using them again, and "begs to revoke the endorsement he has given it verbally and in print."

A Case of Plague at Plymouth, Eng. — A mild case of plague is stated to have been discovered on the steamship *Golconda* at Plymouth, Eng., December 24th. The *Golconda* is a British India Company's ship sailing from Calcutta, and the case did not manifest itself until Marseilles was reached, a fact which is at variance with our usual theories concerning the incubation period of plague. Due precautions were taken by the authorities and the *Golconda* was allowed to proceed to London, where she underwent the usual processes of disinfection. The patient was left at Plymouth.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, January 11, 1899, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 49, scarlet fever 24, measles 202, typhoid fever 9.

A Bequest to the Harvard Dental School. — By the will of the late Henry Clarke Warren, which was recently filed for probate in East Cambridge, the sum of $10,000 was bequeathed to the Harvard Dental School.

Birthdays of two Centenarians. — Mrs. Lydia Gale, of West Everett, celebrated her one hundred and first birthday on January 1st. Mrs. Eliza Pinkham, of Milbridge, Me., passed her one hundred and third birthday January 7th. She is probably the oldest woman now living in Maine. She was born near Eastport, and has been twice married.

The Annual Meeting of the Children's Hospital Corporation. — In the report made by Dr. Francis H. Brown, Secretary of the Board of Managers, at the annual meeting of the Children's Hospital Corporation, which was held on January 10th, it appears that during the past year there have been treated in the wards of the hospital 927 patients, including 54 who remained at the time of the last previous report. The largest number of patients in the house in any one day was 88, and the daily average for the year was 73.07. There have been treated in the out-patient department 3,568 new patients, who have made 13,988 visits for consultation and advice. Of these out-patients 356 were treated for diseases of the throat, and 130 for diseases of the nervous system. In the department for outdoor relief, 1,059 visits have been made by nurses. The actual expenses of the hospital have exceeded the income by $9,000.

The Boston Society of Medical Sciences. — A meeting of the Boston Society of Medical Sciences was held December 20th at the Harvard Medical School. Dr. John Dane gave a demonstration of the arch of the foot in early childhood. Dr. Franklin W. White gave the results of his experiments on the germicidal properties of blood serum. He found that human blood serum differs in its germicidal action on various kinds of bacteria; that normal human serum is germicidal for certain varieties of bacteria, for example, typhoid and colon bacilli, and not for others, staphylococci pyogenes aureus, or streptococci; that a weakening of the germicidal power of blood serum shortly before death favors an agonal invasion of the body by colon bacilli. Dr. Allen Cleghorn spoke on the action of thyroid extracts on the isolated mammalian heart apex. Perfusion of various doses of the extracts on the dog's ganglia-free apex gave different results, small doses tending to augment the contractions, and larger ones paralyzing the apex. Thyroid extract seemed to have a regulating influence on the rhythm of the contractions. Perfusion of iodine solution had a contrary effect. Dr. E. W. Taylor demonstrated (projection) the spinal cords from two cases, one of fracture and the other of dislocation of cervical vertebræ, in which operation had been done. In both cases the injury was extensive and wholly within the substance of the cord. The character of the internal hemorrhage was of especial interest.

Gloucester's City Physician. — Under a recent decision of the Supreme Court, in the case of the Attorney-General *vs.* Arthur McCabe, it is held that the ordinance of the City of Gloucester authorizing the appointment of the Board of Health is invalid, and that the respondent is entitled to hold his office as city physician. It appears that the respondent was elected city physician January 3, 1898, and was sworn in as a member of the body acting as a Board of Health on January 4, 1898. At that time he was an alien, but was naturalized on January 15, 1898. The Court finds that the City of Gloucester has never accepted the statute authorizing the City Council to delegate powers as a Board of Health to others, and also says that as it is not contended that an alien is not eligible to the office of City Physician when the city physician is not a member of the Board of Health the information must be dismissed.

NEW YORK.

The Medico-Legal Society. — At the annual meeting of the Medico Legal Society, held December 21st, the following officers were elected for the ensuing year: President, Albert Bach, New York; First Vice-President, Dr. F. B. Downs, Bridgeport, Conn.; Second Vice-President, Dr. G. W. Grover, Sheffield, Mass.; Secretary, Clark Bell, New York.

"Christmas and Hospital Sunday."—As "Hospital Sunday" (the last Sunday of the year) came this season on Christmas Day, the collections for hospitals were postponed to another date in many churches whose practice it has been to devote the Christmas offerings to other special objects. During the last year the associated hospitals, which are the beneficiaries of the Hospital Saturday and Sunday Fund, cared for 37,951 bed patients, of whom 26,948 were treated free. In 1897 the contributions from all sources amounted to $68,054.

A Physician Recovers for Services. — A case of interest to medical practitioners has lately been decided by the Appellate Term of the Supreme Court, which affirmed a judgment recovered by Dr. S. Olin Hardy in a suit against Clifford S. Eagle for medical services rendered the latter's wife while she and her husband were living together, and afterward during a longer period while they were living apart, and also for services in attending upon Mr. Eagle's minor son, while he was living with his mother. In pronouncing his opinion the presiding justice stated that ample evidence of the abandonment was furnished by the testimony of the wife called as a witness for the plaintiff.

The Mortality in New York during 1898. — The total number of deaths reported in the city of New York during the year 1898 was 66,073, which represents, according to the estimated population, an annual death-rate of 19.21. In 1897 the mortality in New York, comprising the present Boroughs of Manhattan and the Bronx, was 38,857, representing an annual death-rate of 19.53, and in the city of Brooklyn, 20,593, representing an annual death-rate of 17.75. In 1898 the death-rate in the Boroughs of Manhattan and the Bronx was 19.70 and in Brooklyn, 18.26. In the year 1898 there was in the entire city of New York but one death from small pox, while in 1897 there were 24 in New York, and 3 in Brooklyn. The number of deaths from influenza in Manhattan and Bronx was 248 and in Brooklyn, 112, against 195 and 170 respectively in 1897. From measles the deaths were 114 and 197, against 391 and 190 in 1897. From scarlet fever, 522 and 159 against 498 and 187 in 1897. From diphtheria, 790 and 593, against 1,370 and 795 in 1897 — a very gratifying showing. From typhoid fever, 374 and 267, against 300 and 172 in 1897. (The increase in typhoid was entirely due to returning soldiers suffering from the disease.) From pneumonia, 4,769 and 2,357, against 4,618 and 2,223 in 1897. From phthisis, 4,856 and 2,357, against 4,618 and 2,223 in 1897. From diarrheal diseases, 2,799 and 1,740, against 2,483 and 1,569 in 1897. From sunstroke, 318 and 141, against 39 and 22 in 1897. The total number of births reported in New York in 1898 was 78,932; 53,358 of these being in Manhattan and Bronx and 21,395 in Brooklyn, against 54,089 and 21,109 respectively in 1897.

Deaths from Respiratory Diseases in December. — In comparing the mortality of the four weeks ending December 24th with that of the four weeks ending November 26th it is found that the death-rate increased from 16.36 to 18.99 +. Such an increase, however, is usual at this season of the year, and it will be seen that the December death rate is less than the average for the entire year. The principal increase was in pneumonia and influenza, the weekly average of deaths from the former enlarging from 137.15 to 256, and from the latter, from 3 to 31. In the week ending December 24th there were 295 deaths reported from pneumonia and 91 from influenza.

The State Charities Aid Association. — On January 6th the annual meeting of the State Charities Aid Association was held, with Joseph H. Choate in the chair. Among the reports presented was one by Dr. George G. Wheelock on the care of consumptives in public institutions. Most patients of this class, he said, were sent to the public institutions, as the private hospitals generally refused to receive them, on account of the danger of infection. In Bellevue Hospital they were scattered through the wards, making it dangerous for other patients, and several nurses had contracted tuberculosis there. In advanced cases of the disease he thought it highly desirable that the patient should be isolated. The assistant secretary read an interesting report on finding homes for destitute children and the visiting of dependent children boarded in families by overseers and superintendents of the poor. It was stated that the mortality among foundlings in the hospital on Randall's Island having reached the appalling rate of 98 per cent., the Commissioners of Public Charities investigated the matter and made an effort to place as many of the children as possible in the care of families. The Association had secured sixty of them, and had succeeded in reducing the mortality to 60 per cent. In Massachusetts, where the system of boarding out foundlings is in vogue, it was stated that the mortality was about 58 per cent.

THE NEW OFFICERS OF THE ACADEMY OF MEDICINE. — On January 5th the new President, Dr. Wm. H. Thomson, and Vice-President, Dr. Hermann Knapp, of the New York Academy of Medicine, were installed.

A VERY SMALL BABY. — There is at present at Gouverneur Hospital a female infant said to be perfect in its development in every respect except as regards size; at the age of two months she weighs but 32¾ ounces. When born her weight was only 16 ounces.

THREE CENTENARIANS.— Mrs. Bertha Morgenstern celebrated her one hundred and seventh birthday on New Year's Day. She was born January 1, 1792, in Russia, and has been in America over fifty years. Mrs. Alice Perkins Snow died at the residence of her daughter in New York on January 2d, at the age of nearly one hundred and two. She was born at Kennebunkport, Maine, January 8, 1797. Mrs. Mary Ivins died in Flatbush, Borough of Brooklyn, January 5th, at the age of one hundred. She was born in Dublin, Ireland, and came to this country with her husband about fifty years ago.

DEATH OF DR. CHARLES F. GUILLON. — Dr. Charles F. Guillon, formerly a distinguished surgeon in the United States Navy, died in New York on January 1st, of pneumonia. He was born in Philadelphia, July 26, 1813, and was graduated from the Medical Department of the University of Pennsylvania in 1836. In 1854 he resigned from the navy to assume charge of a hospital in Honolulu, where he remained until 1867.

DEATH OF DR. WILLIAM H. DUSTMAN. — Dr. William H. Dustman, for ten years a New York practitioner, died January 4th, of meningitis. He was forty-two years of age and a graduate of Bellevue Hospital Medical College in 1886.

DEATH OF A HOSPITAL INTERNE. — Dr. Charles W. McManus, an interne of the Willard Parker Hospital for Contagious Diseases, died at that institution on January 5th, of pneumonia, at the age of twenty-two.

INFLUENZA AND DRY FEET. — Recently a correspondent, who stated that he was "something of an authority on grip," sent a communication to the *Times* saying that the only sure way to avoid taking the disease was to keep the feet dry. In corroboration of the point he mentioned that since he had been careful to do this he had not had it, while before observing the precaution he had had it four years in succession, and got it "every time through his feet." Whereupon another correspondent comes out with the staggering statement that he knows a man "who has had grip five years in succession, and he has two wooden legs."

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Miscellany.

THE INJECTION OF ANTITETANIC SERUM INTO THE SUBARACHNOID SPACE.

THE interest felt in the treatment of grave cases of tetanus by the direct application of the antitoxin to the central nervous system is further exemplified in a communication recently made to one of the French medical societies by M. Étienne Martin, a hospital interne (*Lyon Médical*, November 20th). A lad eighteen years old entered the hospital in Jaboulay's service a week after having wounded his foot by stepping on a nail. On the day before his admission he had experienced difficulty in opening his jaws and in chewing. At the time of his admission there were generalized tetanic contractions, and he could scarcely speak. The cicatrix left by the wound was excised at once. Then lumbar puncture was practised with a large trocar. About ten cubic centimetres of absolutely clear liquid escaped, and alike amount of antitetanic serum was injected. The usual treatment with chloral and morphine was begun at the same time. That afternoon the lad died without having shown any amelioration. The reporter stated, however, that, notwithstanding the failure of the lumbar-puncture treatment in this case and in two others, one of his own and one of Brissaud's, M. Jaboulay would resort to it again, but immediately after the infection. — *New York Medical Journal.*

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SANITARY ADVANTAGES OF AUTOMOBILE CARRIAGES.

IN the annual report of the licensing of public carriages which has just been issued by Sir Edward Bradford, Commissioner of Police in London, there are some interesting statements regarding the progress made by motor carriages for hire. He hopes to find in motor carriages one of the main factors in solving the problem of the congestion in the London thoroughfares. He says: "Should electric carriages come generally into use, the effect on the traffic of the metropolis will be marked, as such vehicles occupy but a little over one-half the space of that of a similar vehicle drawn by a horse. From a sanitary point of view, also, a diminution of the number of horses in the streets is a desideratum." The report points out that the number of carriages is continually increasing. Altogether there are 16,000 public carriages licensed in London, an increase of 872 over the number licensed in the previous year. In Paris further indications of the gradual substitution of mechanical traction for animal traction are furnished in the statement made by an official of the *Compagnie Générale des Petites Voitures* to the effect that they have from thirty to forty motor cabs all ready to put into use, but they are delaying bringing them out so that the drivers may become perfectly expert, the more so as the streets are at present in a condition which renders driving very difficult. — *Public Health.*

THERAPEUTIC NOTES.

Surgical Treatment of Pericarditis. — Brentano[1] reports observations of five patients treated by opening the pericardium by the aid of a resection of the ribs, which he considers as necessary, for a simple puncture will hardly admit the evacuation of the pus, and an incision without a preliminary resection is more dangerous and less efficacious. Only pericardiotomy was successful in acute cases. Two cases of purulent pericarditis terminated in death; two cases of long-standing sero-fibrinous pericarditis were only ameliorated for a time, but in the fifth case, that of a girl ten years of age, a cure followed. The pericarditis was consequent upon rheumatic endocarditis.

Professor Kocher, of Berne, published recently in the *Correspondenz-Blatt. der Schweiz. Ærzte*, September 15, 1898, a second series of 600 thyroidectomies performed by himself and his assistants. The first series of 1,000 cases was published by him in 1895. He thinks that the results of thyroid organo-therapy are not superior to those obtained by the old method of iodine treatment, and that in a general way it may be said that the number of cases requiring operative treatment does not seem to diminish perceptibly, although the statistics of the Berlin clinics tend to show that ninety per cent. of the cases can be relieved by internal medication, and only ten per cent. require urgent operative interference.[2]

Treatment of Exophthalmic Goitre. — Dr. Frank Oliphant[3] divides the method of treatment into five heads: (1) The general hygienic treatment, which consists of rest in bed for a certain period of time, and the regulation of the diet embracing non-stimulating and easily digestible foods; (2) of the drugs, belladonna in large doses does the most good, by restraining the action of the heart, and by decreasing (probably) the secretory activity of the gland. Ung. hydr. Iod. externally tends to decrease the size of the goitre; digitalis is effective as a cardiac tonic. Phosphate of soda, so highly praised by some, has been attended with no results in the author's hands; (3) electricity, so much relied upon formerly, has now given place to more effective means; (4) the author failed to obtain any results from the administration of either the thymus or the thyroid extract; the first one is probably somewhat more efficacious. Pancreatic emulsion, suprarenal gland and spleen have all been used with varying success; (5) operative treatment by Kocher consists in ligature of the thyroid arteries; other methods are: removal, by excision, of half or more of the gland, and exothyreopexy — the laying bare and bringing out of the gland, leaving it in this position, the usual result being thrombosis of the veins and shrivelling up of the gland. The most recent operation is that by Jaboulay, which consists in the division of the cervical sympathetic. The mortality in all the operative procedures being rather high — fully 12 per cent. — the tendency is making itself felt to resort to operative interference only after medicinal means have been exhausted and proved futile.

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[1] Deutsche med. Woch., August 11, 1898; Revue gén. de path. int., November 20, 1898.

[2] Russian Archives of Pathology, Clinical Medicine and Bacteriology, September, 1898.

[3] The Birmingham Medical Review, October, 1898.

METEOROLOGICAL RECORD

For the week ending December 31st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind 8.00 A. M.	Velocity of wind 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S...25	30.25	35	41	29	60	67	64	W.	N.W.	9	10	C.	O.	
M..26	30.11	28	34	22	67	54	60	N.W.	N.	9	6	C.	C.	
T...27	29 66	30	39	22	77	61	70	S.W.	S.W.	11	12	O.	F.	
W..28	29 68	22	35	†10	57	52	51	W.	W.	22	18	C.	C.	
T...29	30.04	21	40	9	68	64	66	S.W.	S.W.	10	14	N.	C.	
F...30	29.98	48	58	38	88	69	78	S.W.	S.W.	16	8	C.	O.	
S...31	30.18	37	50	24	100	94	97	N.W.	N.	9	15	R.	N.	.43
☞	29.99		42	22			70							.43

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, December 31, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup
New York . .	3,438,899	1560	370	13.62	24.30	54	.54	10.26
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	220	49	3.85	23.85	—	.90	1.35
Baltimore . .	506,389	257	74	7.02	23.90	1.56	.39	3.51
Cincinnati . .	405,000	116	—	2.58	14.62	.86	.86	.86
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	124	40	12.15	23.49	4.86	2.43	2 43
Washington .	277,000	161	33	4.88	17.69	.61	1.22	2.44
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	57	17	10.50	22.75	3.50	—	3.50
Nashville . .	87,754	34	13	5 88	17.64	2.94	—	2.94
Charleston . .	65,165	33	13	18.18	6.06	9.09	—	6.06
Worcester . .	108,240	29	5	6.90	17.25	3.45	—	3.45
Fall River . .	95,919	32	10	6.26	15.65	6.26	—	—
Cambridge . .	89,724	24	9	—	37.44	—	—	—
Lowell . . .	88,641	47	16	8.52	53.25	—	2.13	4.26
Lynn	66,703	22	5	12.45	4.15	4.15	—	—
New Bedford .	66,340	17	9	—	11.76	—	—	—
Somerville . .	61.101	20	4	5.00	25.00	—	—	5.00
Lawrence . .	57,263	32	14	21.91	18.78	6.26	—	12.52
Springfield . .	56,501	29	8	3.45	41 40	—	3.45	—
Holyoke . . .	43,424	14	6	21.42	28.56	14.28	—	—
Brockton . .	37,278	8	0	—	25.00	—	—	—
Salem. . . .	36,883	13	4	—	20.37	—	—	—
Malden . . .	34,613	6	0	—	33.33	—	—	—
Chelsea . . .	33,468	9	3	—	11.11	—	—	—
Haverhill . .	32,022	13	2	—	13.58	—	—	—
Gloucester . .	30,589	—	—	—	—	—	—	—
Newton . . .	29,716	8	3	—	12.50	—	—	—
Fitchburg . .	29,438	2	0	—	—	—	—	—
Taunton . . .	28,167	9	3	—	—	—	—	—
Everett . . .	25,338	2	0	—	50.00	—	—	—
Quincy . . .	23,549	8	4	—	25.00	—	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	4	1	25.00	—	—	25.00	—
North Adams .	20,971	12	4	16.66	41.65	—	—	16.66
Chicopee . .	17,842	3	0	—	—	—	—	—
Medford . . .	16,511	5	1	—	20.00	—	—	—
Newburyport .	14,915	5	0	—	60.00	—	—	—
Melrose . . .	14,032	5	0	—	20.00	—	—	—

Deaths reported 2,965; under five years of age 725; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 324, acute lung diseases 715, consumption 205, diphtheria and croup 207, diarrheal diseases 35, typhoid fever 22, cerebro-spinal meningitis 17, whooping-cough 15, scarlet fever 13, measles 9, erysipelas 4.

From cerebro-spinal meningitis New York 11, Boston 3, Baltimore 2, Lynn 1. From whooping-cough New York 5, Pittsburg and Providence 2 each, Boston, Baltimore, Charleston, New Bedford, Holyoke and Salem 1 each. From scarlet fever New

York 11, Pittsburg and Lowell 1 each. From measles New York 9. From erysipelas Baltimore and Washington 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,218,378, for the week ending December 17th, the death-rate was 16.6. Deaths reported 3,575; acute diseases of the respiratory organs (London) 283, diphtheria 103, measles 97, fever 60, whooping-cough 55, diarrhea 33, scarlet fever 24.

The death-rates ranged from 10.9 in Derby to 21.9 in Nottingham; Birmingham 15.7, Bradford 14.9, Cardiff 14.7, Gateshead 14.6, Hull 12.0, Leeds 16.8, Liverpool 19.9, London 16.5, Manchester 20.9, Newcastle-on-Tyne 14.3, Portsmouth 15.8, Sheffield 18.4, Sunderland 21.7, West Ham 16.4.

In the thirty-three greater towns of England and Wales with an estimated population of 11,218,378, for the week ending December 24th, the death-rate was 17.8. Deaths reported 3,830; acute diseases of the respiratory organs (London) 284, diphtheria 115, measles 104, fever 70, whooping-cough 53, diarrhea 50, scarlet fever 32.

The death-rates ranged from 10.6 in Cardiff to 30.2 in Swansea; Birmingham 19.0, Bradford 16.3, Gateshead 15.6, Hull 15.0, Leeds 17.8, Liverpool 22.1, London 17.0, Manchester 23.0, Newcastle-on-Tyne 18.9, Nottingham 20.8, Portsmouth 14.2, Sheffield 18.4, Sunderland 17.0, West Ham 14.7.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JANUARY 5, 1899.

PETTUS, W. J., passed assistant surgeon. To proceed to Norfolk and Newport News, Va., for special temporary duty. January 3, 1899.

PERRY, J. C., passed assistant surgeon. Relieved from duty at Port Townsend, Washington, to take effect upon the arrival of Passed Assistant Surgeon C. H. GARDNER, and to retain command of the Port Townsend Quarantine Station. January 3, 1899.

STEWART, W. J. S., passed assistant surgeon. To proceed to Alexandria, Va., and Hancock, Md., for special temporary duty. December 31, 1898. Relieved from duty at Bureau and directed to proceed to Vineyard Haven, Mass., and assume command of Service. January 3, 1899.

GARDNER, C. H., passed assistant surgeon. Upon being relieved from duty at Baltimore, Md., to proceed to Port Townsend, Washington, and assume command of Service. January 3, 1899.

TABB, S. R., assistant surgeon. Upon being relieved from duty at Vineyard Haven, Mass., and upon expiration of leave of absence granted by Bureau letter of November 29, 1898, to proceed to Baltimore, Md., and report to medical officer in command for duty and assignment to quarters. January 3, 1899.

HOLZENDORF, B. E., hospital steward. Granted two days' extension of leave of absence. December 30, 1898.

APPOINTMENTS.

CHAS. G. CARLTON, of South Dakota, to be junior hospital steward. December 30, 1898.

FRANK A. SOUTHARD, of Indiana, to be junior hospital steward. December 30, 1898.

JOHN PURIFOY, JR., of Alabama, to be junior hospital steward. December 30, 1898.

TREASURY DEPARTMENT, OFFICE SUPERVISING SURGEON-GENERAL, MARINE-HOSPITAL SERVICE.

WASHINGTON, D. C., January 7, 1899.

A board of officers will be convened at the U. S. Marine Hospital, Chicago, Ill., February 14, 1899, for the purpose of examining candidates for admission to the grade of assistant surgeon in the U. S. Marine-Hospital Service.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college, and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examination: (1) physical; (2) written; (3) oral; (4) clinical.

In addition to the physical examination candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography by the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature and natural sciences.

The clinical examination is conducted at a hospital, and, when practicable, candidates are required to perform surgical operations on the cadaver.

Successful candidates will be numbered according to their attainments on examination and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large marine hospitals, as at Boston, New York, New Orleans, Chicago or San Francisco.

After five years' service, assistant surgeons are entitled to examinations for promotions to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority, and, after due examination, as vacancies occur in that grade. Assistant surgeons receive sixteen hundred dollars, passed assistant surgeons two thousand dollars, and surgeons twenty-five hundred dollars a year. When quarters are not provided commutation at the rate of thirty, forty or fifty dollars a month, according to grade, is allowed.

All grades above that of assistant surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service up to forty per centum after twenty years' service.

The tenure of office is permanent. Officers travelling under orders are allowed actual expenses. For further information or for invitation to appear before the Board of Examiners, address

SUPERVISING SURGEON-GENERAL,
U. S. Marine-Hospital Service.

SOCIETY NOTICE.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, Wednesday, January 18, 1899, at 8 P. M.

At 8 o'clock. Short communications:

Dr. R. C. Larrabee, "Report of a Case of Hemorrhage into the Spinal Cord." Remarks by Dr. J. J. Thomas.

Dr. J. B. Ogden will show a specimen of "Urine of Unusual Interest."

At 8.20 o'clock. Dr. R. F. Chase, paper entitled: "The Local Treatment of Pneumonia." The profession is invited to take part in the discussion.

J. B. OGDEN, M.D., *Secretary*,
Harvard Medical School, Boston.

RESIGNATION.

CHARLES F. FOLSOM, M.D., has resigned from the position of visiting physician at the Boston City Hospital.

BOOKS AND PAMPHLETS RECEIVED.

The Sexual Instinct, Its Use and Dangers as Affecting Heredity and Morals, Essential to the Welfare of the Individual and the Future of the Race. By James Foster Scott, B.A., M.D., late Obstetrician to Columbia Hospital for Women and Lying-in Asylum, Washington, D. C.; late Vice-President of the Medical Association of the District of Columbia, etc. New York: E. B. Treat & Co. 1899.

Cerebral and Mental Symptoms in Relation to Somatic Disease, Anesthetics and Toxic Agents, Traumatic and Surgical Procedures, with a Review of the Treatment of some Cerebral and Mental Symptoms by Operation; A Thesis Presented for the Degree of Doctor of Medicine of the University of Edinburgh in 1895. By James Christian Simpson, M.B., C.M., M.D. London: John Bale, Sons and Danielsson. 1898.

Diseases of the Skin, An Outline of the Principles and Practice of Dermatology. By Malcolm Morris, Surgeon to the Skin Department, St. Mary's Hospital, London; Corresponding Member of the K. K. Gesellschaft des Ærtzte in Wien, of the Wiener Dermatologische Gesellschaft. and of the Société Française de Dermatologie. With 10 colored plates and 26 engravings. New and revised edition. Philadelphia: Lea Brothers & Co. 1898.

A Manual of Physiology, with Practical Exercises. By G. N. Stewart, M.A., D.Sc., M.D., Edin., D.P.H., Camb., Professor of Physiology in the Western Reserve University, Cleveland; formerly George Henry Lewes Student; Examiner in Physiology in the University of Aberdeen; Senior Demonstrator of Physiology in the Owens College, Victoria University, etc. With numerous illustrations, including five colored plates. Third edition. Philadelphia: W. B. Saunders. 1898.

International Clinics; A Quarterly of Clinical Lectures on Medicine. Neurology, Surgery, Gynecology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, etc., and Specially Prepared Articles on Treatment and Drugs. By professors and lecturers in the leading medical colleges of the United States, Germany, Austria, France, Great Britain and Canada. Edited by Judson Daland, M.D. (Univ. of Penna.). Philadelphia, Instructor in Clinical Medicine and Lecturer on Physical Diagnosis in the University of Pennsylvania, etc., J. Mitchell Bruce, M.D., F.R.C.P., London, Eng., Physician to and Lecturer on the Principles and Practice of Medicine in the Charing Cross Hospital, and David W. Finley, M.D., F.R.C.P., Aberdeen, Scotland, Professor of Practice of Medicine in the University of Aberdeen, etc. Volume III. Eighth Series, 1898. Philadelphia: J. B. Lippincott Co. 1898.

Original Articles.

THE HOSPITAL SHIP "BAY STATE."[1]

BY HERBERT L. BURRELL M. D., BOSTON.

On the third day of May, 1898, at the request of Governor Wolcott, a number of gentlemen whom he had invited as public-spirited citizens met in the Council Chamber to consider the question as to the advisability of the formation of a sanitary commission. At this meeting the Massachusetts Volunteer Aid Association was formed to render aid to the volunteers who enlisted in the service of the United States. At this time the suggestion was made that a hospital ship would be of use, and that a popular subscription should be started to purchase and equip a vessel as an aid association ship, under the Geneva Conference, Article XIII, which is an international agreement and provides for the recognition of aid association ships. It is as follows:

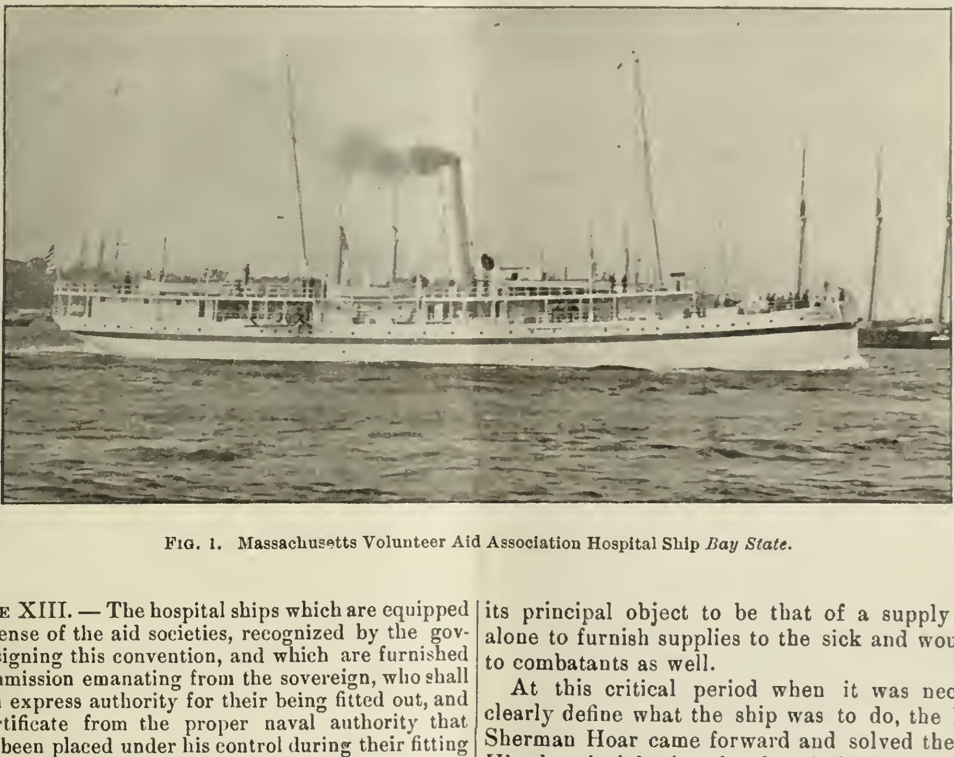

Fig. 1. Massachusetts Volunteer Aid Association Hospital Ship *Bay State.*

Article XIII. — The hospital ships which are equipped at the expense of the aid societies, recognized by the governments signing this convention, and which are furnished with a commission emanating from the sovereign, who shall have given express authority for their being fitted out, and with a certificate from the proper naval authority that they have been placed under his control during their fitting out and on their final departure, and that they were then appropriated solely to the purpose of their mission, shall be considered neutral, as well as the whole of their staff. They shall be recognized and protected by the belligerents.

They shall make themselves known by hoisting, together with their national flag, the white flag with a red cross. The distinctive mark of their staff, while performing their duties, shall be an armlet of the same colors.

The outer painting of these hospital ships shall be white, with a red strake.

These ships shall bear aid and assistance to the wounded and wrecked belligerents, without distinction of nationality.

They must take care not to interfere in any way with the movements of the combatants. During and after the battle they must do their duty at their own risk and peril.

The belligerents shall have the right of controlling and visiting them; they will be at liberty to refuse their assistance, to order them to depart, and to detain them if the exigencies of the case require such a step.

The wounded and wrecked picked up by these ships cannot be reclaimed by either of the combatants, and they will be required not to serve during the continuance of the war.

During the month of May Mr. Robert M. Burnett and Dr. C. A. Siegfried looked over various vessels which were offered, and finally decided to purchase the Boston Fruit Company's steamer *Marmion*, formerly *Bowden.* In the latter part of May a Medical Committee of the Association was appointed, consisting of Dr. Samuel A. Green, Dr. Henry P. Walcott and Dr. Herbert L. Burrell, who were asked to confer with the president, Mr. Eben S. Draper, and the secretary, Mr. Elihu B. Hayes.

At this time there was a lack of understanding on the part of those interested and responsible as to what the function of the ship should be. Many regarded its principal object to be that of a supply ship, not alone to furnish supplies to the sick and wounded, but to combatants as well.

At this critical period when it was necessary to clearly define what the ship was to do, the late Hon. Sherman Hoar came forward and solved the question. His clear insight into legal technicalities, his absolute honesty of purpose, his masterly tact and extraordinary forcefulness brushed aside all impediments and demonstrated to the Government at Washington the necessity for granting the commission of the ship. From this time on we who served on the hospital ship knew that whenever we turned to him for advice, support or assistance he gave freely. No man ever sacrificed his life to his country with a higher sense of duty, greater zeal and patriotism than Sherman Hoar.

Mr. Robert M. Burnett had practically purchased the steamer *Marmion*, which arrived in Boston on June 6th, and the Medical Committee then made an inspection of the ship. It became clear that a considerable task was before them. The problem of fitting out and equipping a hospital and supply ship was a new one.

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[1] Read before the Boston Society for Medical Improvement, November 21, 1898.

As an aid association ship it was unique, and the Massachusetts hospital ship *Bay State* is the first aid association ship that has ever been equipped under the Geneva Conference, Article XIII.

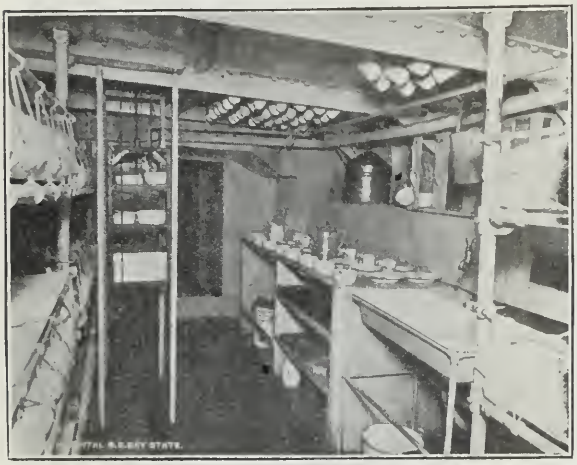

FIG. 2. Service table of ward, with dumb waiter connecting with galley above.

One of the committee went to New York and saw the *Solace*, that had at that time just been completed, and looked at the *Relief*, which was in process of equipment. The result of this journey was instructive, in that it showed that the problem was one that should be approached with a good deal of thought. The ship which was to be fitted out by the Association was to be a hospital and supply ship, and was to be used as a supplementary aid to the medical departments of the army and navy. Many things to copy and many to avoid were suggested by the inspection of the *Solace*, and afterwards of the *Relief*. The *Marmion* was a small ship, the *Solace* and *Relief* were large ships, yet into the *Marmion* it was necessary to place all the essentials of a hospital and supply ship. Here it was deemed best to ask for counsel and advice, in writing, of experts, and on June 16th the following circular was issued, requesting gentlemen to co-operate in fitting and equipping a hospital ship:

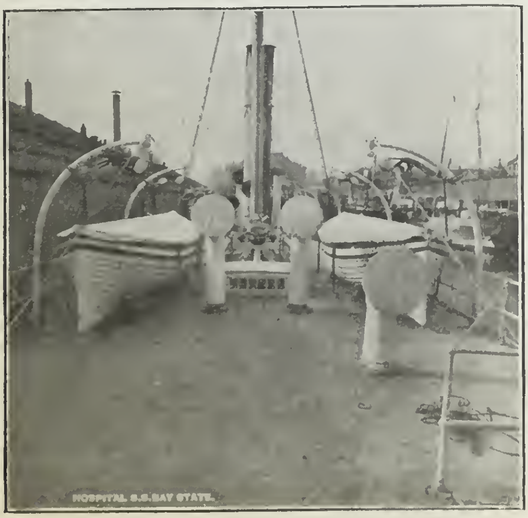

FIG. 3. Aft hurricane deck for convalescent patients.

MY DEAR SIR: — On the recommendation of the Medical Advisory Board of the Massachusetts Volunteer Aid Association, the Executive Committee thereof has appointed you, with , Chairman, to serve as a special committee on , and respectfully asks your active co-operation in fitting out the proposed hospital ship.

The steamship *Marmion* has been secured, and is now at the Atlantic Works, East Boston, being refitted for hospital service, where she will be open to your inspection at any time in business hours.

Information as to the scope of the work of your committee will be furnished by Dr. Herbert L. Burrell, 22 Newbury Street, telephone Back Bay, 219, to whom please send your letter of acceptance.

Earnestly hoping that you can give us the benefit of your advice and experience in carrying forward this work, I remain, Yours respectfully,

(Signed) ELIHU B. HAYES,
Secretary of the Executive Committee.

Each part was subdivided under special headings, and the gentlemen on accepting an appointment to the committee were requested to meet and make a written report in five days.

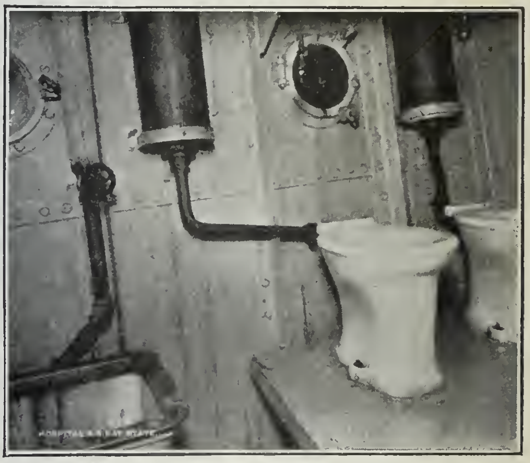

FIG. 4. Water-closets and slop-hoppers. Water-closets on raised steel platform.

The following gentlemen served on the committees:

Committee on Instruments and X-Ray Apparatus. — Drs. A. T. Cabot, F. H. Williams, Homer Gage and E. A. Codman.

Committee on Sterilization of Surgical Materials. — Drs. M. H. Richardson, W. P. Bolles and Farrar Cobb.

Committee on Clinical Laboratory. — Drs. H. P. Walcott, W. T. Councilman and J. T. Bottomley.

Committee on Photographs. — Drs. E. A. Codman and J. Bapst Blake.

Committee on Surgical Apparatus. — Drs. W. M. Conant, H. W. Cushing and C. F. Painter.

Committee on Equipment of Medicines. — Gen. R. A. Blood, Dr. W. L. Richardson and Mr. Charles A. Clough.

Committee on Water and Ice Supply. — Drs. H. C. Ernst, S. W. Abbott and Charles Harrington.

Committee on Equipment of Vessel. — Drs. E. H. Bradford, H. L. Burrell, F. G. Balch, Paul Thorndike, E. G. Brackett, J. W. Bartol and Mr. T. J. Manahan.

Committee on Nurses. — Dr. Grace Wolcott.

Committee on Equipment of Railroad Trains. — Drs. John Homans, Charles Williams, Lincoln R. Stone and Melville E. Webb.

Committee on Food Supplies. — Drs. G. H. M. Rowe, John Gray Park and Mrs. Ellen H. Richards.

Committee on Yellow Fever. — Drs. C. F. Folsom, G. A. Durgin and J. H. Wright.

Committee on Dysentery. — Drs. F. C. Shattuck, C. F Withington and W. T. Councilman.

Committee on Typhoid Fever. — Drs. G. B. Shattuck, E. G. Cutler and Richard Cabot.

Committee on Cholera. — Drs. S. H. Durgin and S. W. Abbott.

Committee on Smallpox. — Drs. J. H. McCollom and T. B. Shea.

Committee on Ophthalmic Diseases. — Drs. C. F. Wadsworth and Myles Standish.

Committee on System of Records for Patients. — Drs. R. H. Fitz, George G. Sears, Henry Jackson and John Dane.

Committee on Accounts of Distribution of Supplies. — Dr. W. N. Bullard, Mr. Henley Luce and Dr. George H. Monks.

Committee on Tents. — Drs. Myles Standish and G. H. M. Rowe.

Committee on Uniforms. — Drs. C. M. Green, Abner Post and Mr. W. W. Churchill.

Committee on Medical Inspection of Camps and Distribution of Supplies to Troops. — Gen. R. A. Blood, Drs. Morton Prince and Myles Standish.

Committee on Ventilation and Electric Lights. — Prof. W. T. Sedgwick, Mr. E. M. Wheelwright, Dr. Charles Harrington, Mr. Charles F. Adams, 2d, and Prof. I. N. Hollis.

Committee to arrange the Detail of Life aboard Ship. — Dr. E. H. Bradford, Prof. I. N. Hollis and Dr. Myles Standish.

Committee on Equipment of a Relief Station. — Drs. C. Ellery Stedman, R. W. Greenleaf and Mr. Robert M. Burnett.

It has never ceased to be to the writer a remarkable piece of co-operative work. All of the reports were valuable and they are submitted for publication. By this measure the Medical Committee were in a position at the end of seven days to start on the work, with the submitted counsel and advice of experts. The committees of experts were dismissed and the active work was started under the charge of the Medical Committee. The assistance of the gentlemen was invaluable, and is an excellent illustration of the value of commission work, supplemented by experts. Had the advice of all these gentlemen been followed, chaos would have resulted; it was, therefore, necessary that the Medical Committee should select and elect definite lines of action. In many instances this was very trying and difficult, but the dovetailing of reports together became, as time went on, very simple.

On June 21, 1898, the committees of experts having made their reports, the following circular was sent to each member of the various committees:

> Dear Sir: — On behalf of the Medical Committee of the Massachusetts Volunteer Aid Association, I beg to thank you for the provisional report received from your committee in regard to the hospital ship which is being fitted out. Your advice and assistance are very much appreciated by the Medical Committee, who may find it necessary to call upon you for further assistance in the matter.
>
> Very truly yours,
>
> (Signed) HERBERT L. BURRELL,
>
> *Secretary of the Medical Committee.*

At this time there came from a host of medical men proffers of assistance in the work which was already under way. To even enumerate the men who were interested and contributed to the success of the planning and construction of the ship is impossible. Suggestions came on every hand, and it seemed as if the whole medical profession was awake. It will always be a source of pride to the writer that he is connected with a profession which sprang into action as promptly as did the committees of experts of the Massachusetts Volunteer Aid Association. At this time the ship was swarming with experts who were all inquiring about their bit of work, and concentrating their individual efforts on the problem. While the greater part of these gentlemen were medical men, yet the other professions liberally contributed their part to the problem that was presented.

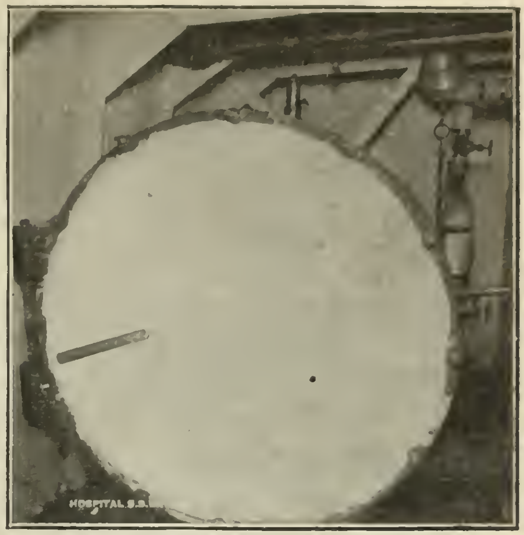

Fig. 5. Large steam sterilizer.

I am personally of the belief that the success of the hospital ship *Bay State* was due to the work done by these committees of experts. It ensured thoroughness of preparation, thought and careful consideration in planning, and was of inestimable value.

During this work the Medical Committee had the privilege of having the active co-operation of Mr. T. J. Manahan, who so thoroughly familiarized himself with the details that to him belongs the credit of the medical supervision of the work so far as construction and equipment were concerned.

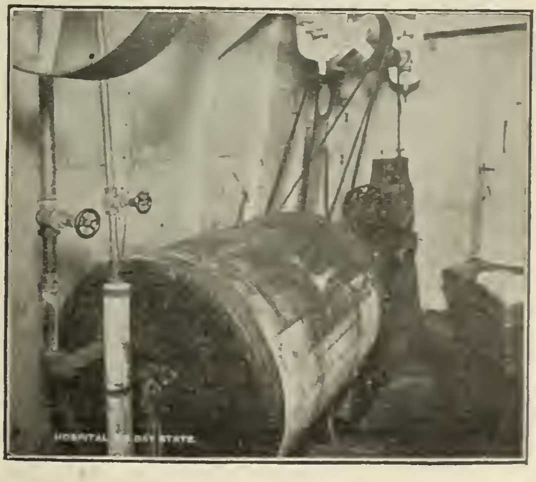

Fig. 6. Laundry machine.

The value of Mr. Boyd's services, as the consulting engineer of the Atlantic Works, in meeting and perfecting any ideas that were presented to him in the construction and equipment of the vessel, is inestimable.

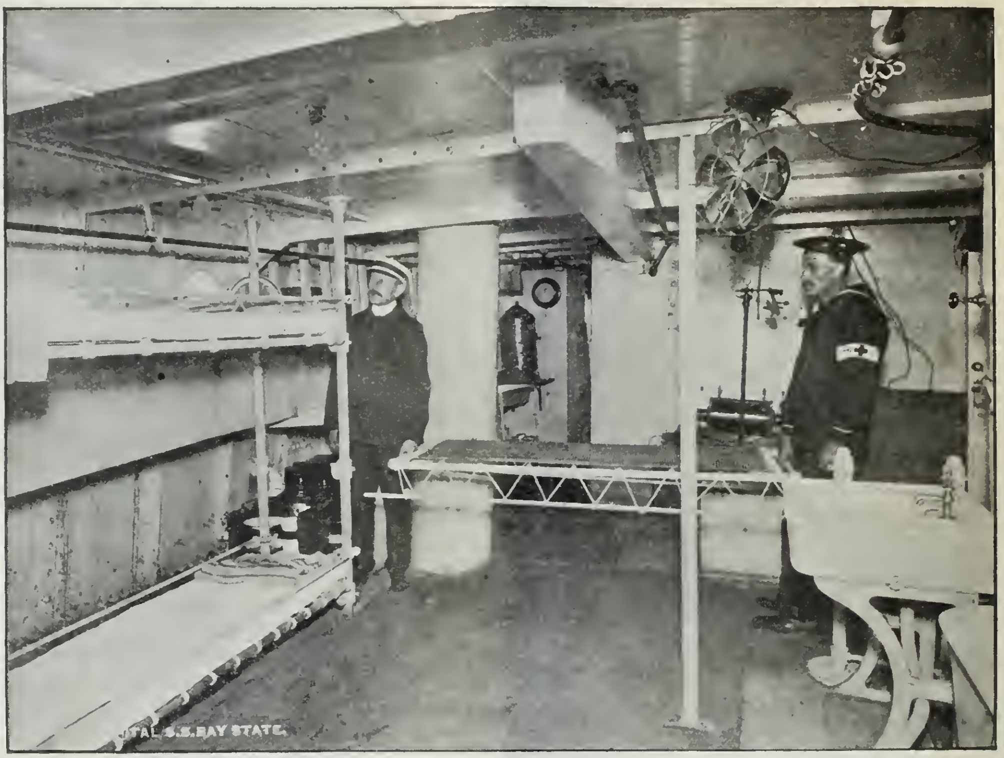

Fig. 7. Forward ward, three tiers of berths, one berth removed, showing berth used as a stretcher.

It was decided that the hospital ship should have the following standard:

She is to provide hospital accommodations for essentially 8,000 Massachusetts troops that are in the field. The *Relief* provides hospital accommodations for 100,000 troops. The Massachusetts hospital ship is to be perfection in providing for its normal capacity, which will be 100, minus that number which it is found necessary to take out to render service for these men perfect. The Massachusetts hospital ship is to be perfect in its elasticity and adaptability to emergencies, and this means that its navigation department and medical department are to be made expansible, that its berthing capacity is to be normally 100, and in exigencies to be increased to 150.

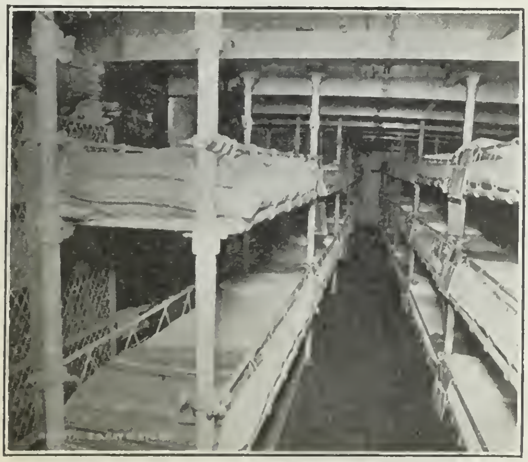

Fig. 8. Forward ward, showing two tiers and three tiers of berths.

It was decided that the ship should be made clean, and it was determined that if she had a construction that could be easily cleansed, she could be kept free from infection. The writer was obliged to leave this work on the 27th of June, and the peculiarly difficult labor of superintending the construction and equipment of the vessel from this point on was carried essentially to its completion by Dr. Edward H. Bradford.

Up to the day of the battle of El Caney, on July 3d, only a small amount of money had been given to the Association. The public were not awake. They did not believe that a hospital ship was necessary. They believed that the United States Government was perfectly capable and competent to take charge of its own sick and wounded, and it was not until an actual fact had been presented to the public that the wherewithal — money — was given for carrying out the work. However, owing to the foresight and business sagacity of Mr. Burnett and Mr. Higginson, the work was going on, and it practically took from the 17th or 18th of June to the 6th of August, that is, seven weeks, to thoroughly renovate and equip the vessel. Of necessity this work was extremely expensive; it was a piece of rush work, and, towards the last, of night work.

The Commonwealth of Massachusetts, by an act of Legislature, appropriated $50,000 to pay for the hospital ship. The State of Massachusetts held the deed, and the ship was placed at the disposal of the Volunteer Aid Association to equip. The construction and equipment of the vessel will be presented by others.

◆

CONSTRUCTION OF MASSACHUSETTS HOSPITAL SHIP "BAY STATE."[1]

BY MR. J. T. BOYD, BOSTON,
Consulting Engineer.

In fitting out the *Bay State*, the work was directly under the charge of the Board of Control, — Major Henry L. Higginson, Mr. Robert Burnett and Dr. Burrell, — receiving the immediate oversight of Mr. Burnett and Dr. Burrell, and, in the absence of Dr. Burrell, of Dr. Bradford, Dr. Manahan being the resident doctor at the works, and the principal assistant in deciding on the work.

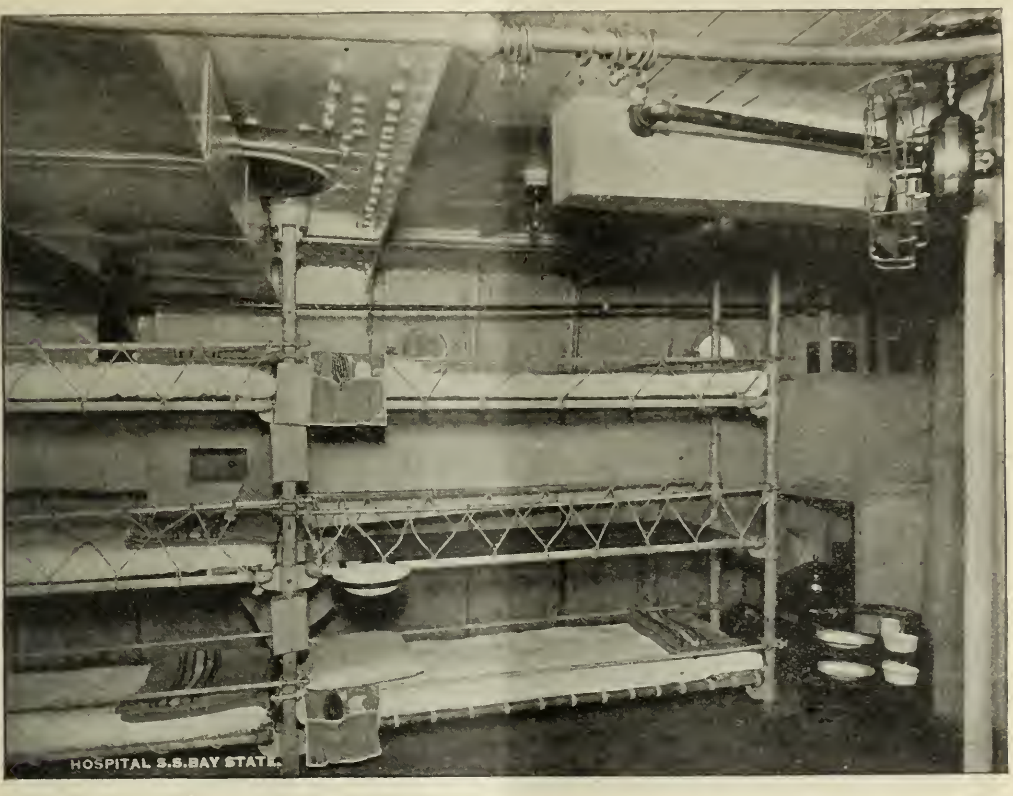

Fig. 9. Forward ward, showing three tiers of berths, with berths corded, beds made up, toilet bags and wash-basin in position.

The ice machinery was ordered by Mr. Robert Burnett, and I think, without question, is one of the best small plants that has ever been fitted in a vessel.

The sterilizer for the bedding, etc., was ordered by Dr. Durgin, and proved a success.

The fitting out of the operating-room, both in general lay-out and in detail, was the work of Dr. Bradford and Dr. Manahan.

The laundry machinery was decided on by Dr. Manahan.

The berthing details were decided by Dr. Bradford, Professor Hollis and myself. Dr. Manahan assisted in the arrangement of these wards very much.

The storerooms, clinical laboratory, apothecary storeroom and storerooms for surgical apparatus were arranged by the doctors who had charge of these different departments.

The general arrangement of the ventilating, lighting, water system I arranged in consultation with Professor Hollis.

The arrangement and detail of water-closets were discussed by almost every one, and finally settled by Dr. Burrell and myself.

The very best feeling prevailed while this work was in progress, and there was no clashing, which, I think, is one of the principal reasons why the work was done so quickly and so well.

For comparison I give the dimensions of three steamers fitted as hospital ships by the United States:

Creole. — Crowell Line. Constructed of steel. 358 feet long, 44 feet beam, 24 feet deep. Engines, 28″, 44″, 74″ x 54″ stroke. Built in 1896 by Newport News Ship Building Co. Gross tonnage, 3,801; net tonnage, 2,622. Fitted as a hospital ship for the United States Navy, and named the *Solace.*

John Englis. — Maine S. S. Co. Constructed of steel. 290 feet 8 inches long, 46 feet beam, 21 feet deep. Built in 1896 by the Delaware River Iron Ship Building and Engine Works. Gross tonnage, 3,095; net tonnage, 1,987. Fitted as a hospital ship for the United States Army and named the *Relief.*

Olivette — Plant S. S. Co. Constructed of iron. 274 feet 3 inches long, 35 feet 2 inches beam, 11 feet 9 inches deep. Built in 1887 by Wm. Cramp & Sons Ship & Engine

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[1] Read before the Boston Society for Medical Improvement, November 21, 1898.

Building Co. Gross tonnage, 1,611; net tonnage, 1,105. Red Cross hospital ship.

What is known as the gross registered tonnage of a vessel is the internal capacity in cubic feet divided by 100. The net registered tonnage is the capacity less the cubic space occupied by the engines, boilers, coal bunkers, etc.

HOSPITAL SHIP "BAY STATE." (FIG. 1.)

The steamship *Bowden*, afterwards *Marmion*, was built by Scott & Co., of Bowling, Scotland, in 1886, and was used in the fruit business between Jamaica and Boston until purchased by the Massachusetts Volunteer Aid Association, by whom her name was changed to *Bay State*. The general dimensions of the ship are: Length, 200 feet; beam, 27 feet; depth, twelve feet, seven inches; gross tonnage, 776; net, 388. She had cabin accommodations for a few passengers. In fitting for a hospital ship the vessel was first cleaned thoroughly; the ballast, which consisted of granite blocks, was removed, the ceiling taken up, and the iron work of hull, both inside and outside, chipped, cleaned and painted. New ballast of pig-iron was put in, the old ceiling was thrown away and new fitted. The main deck, now termed the hospital deck, was smoothed up and sheathed with seven-eighths-inch tongued and grooved stock forward and aft of engine and boiler space. This deck was painted. After the first trip the passageways were covered with ribbed rubber. At sides of engine and boiler-bulkheads the iron deck was covered with cement and asphalt.

The forward ward extends from bulkhead forward of boiler space to bulkhead at forecastle; length about 66 feet; average width 24 feet; fitted for berthing 50 patients when two frames are used to a section. Two water-closets and one sink for this ward are located on port side, forward end. One bath-tub and two wash-bowls are located on centre line of ship near after end of the ward.

The after ward extends from bulkhead aft of engine-room to extreme stern of vessel; length about 68 feet; average width 24 feet; fitted for berthing fifty patients when two frames are used to a section. Four additional frames were placed in the extreme end known as the lazarette. Three water-closets and two sinks are located on port side; the bulkhead for isolated ward divides the water-closet room, so that one closet and one sink comes in isolated ward. The isolated ward bulkhead is about 48 feet aft of engine-room bulkhead with openings at port and starboard sides which can be closed with plates. This ward has space for 18 patients.

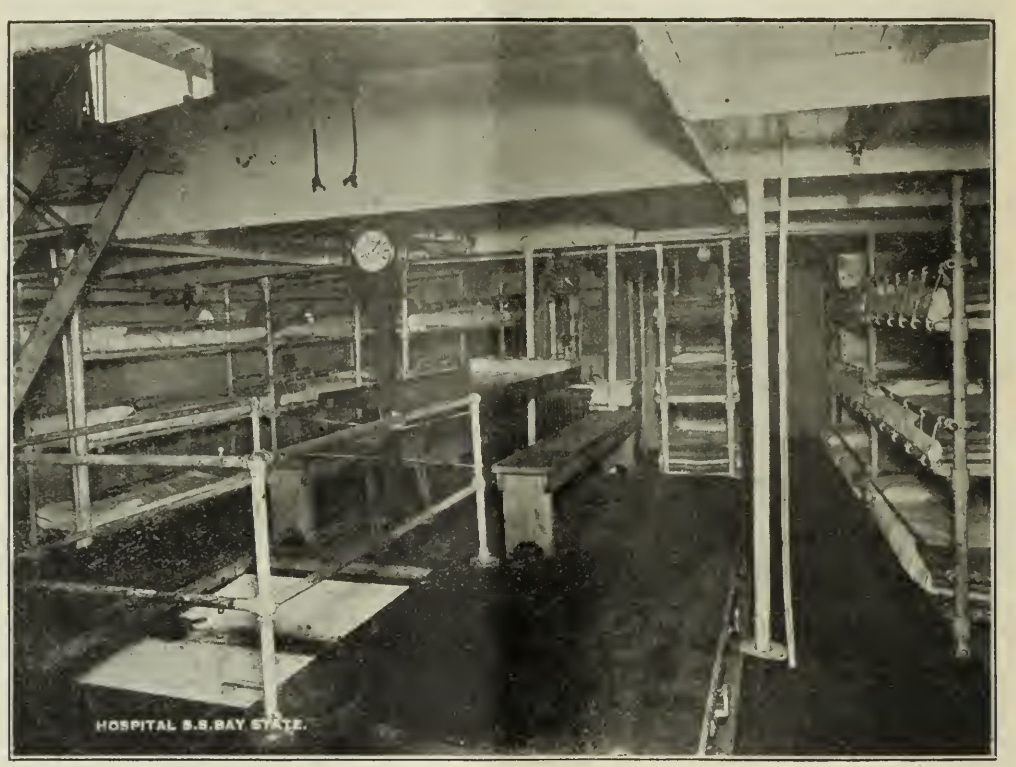

FIG. 10. Aft ward, three tier construction, mess table and entrance to cold storage.

The starboard side of deck between the wards is fitted with four staterooms for baymen. The passageway connecting wards is of sufficient width to allow for transfer of patients. The port side is fitted with operating-room, sterilizing-room and laundry. The laundry has door opening from the after ward. The sterilizing-room is entered through the laundry. Materials to be sterilized can also be put into the room from an opening in the deck, which is closed by a water-tight plate. The operating-room is entered from the forward ward.

The forward lower hold contains the coal bunkers for main boiler. From coal bunker forward, the hold is divided by a deck about nine feet below the hospital deck, called the orlop deck. Below this deck is fitted storerooms for ship stores. These rooms are built of wood slabs with about one inch spacing, fitted with doors. Openings to passageway between these storerooms are through hatches in the orlop deck.

The orlop deck is divided with substantial wire netting into rooms for apothecary stores, clinical laboratory, surgical apparatus, linen stores, room for storing clothing belonging to patients, and the remainder fitted with frames for 20 patients.

The after lower hold is fitted with ice-making machinery, cold-storage rooms, ice tanks, ice-room, and fresh-water tanks. The ice-making machinery is separated from the rest of the hold by steel bulkheads, and the entrance to it is through the engine-room. This machinery was furnished by the Hendrick Manufacturing Company of Carbondale, Pa., of the type where the brine is cooled and taken from the cooler through the brine tanks. By this process no ammonia is taken outside of the space allowed for the machinery, making thereby one of the best plants for ship use.

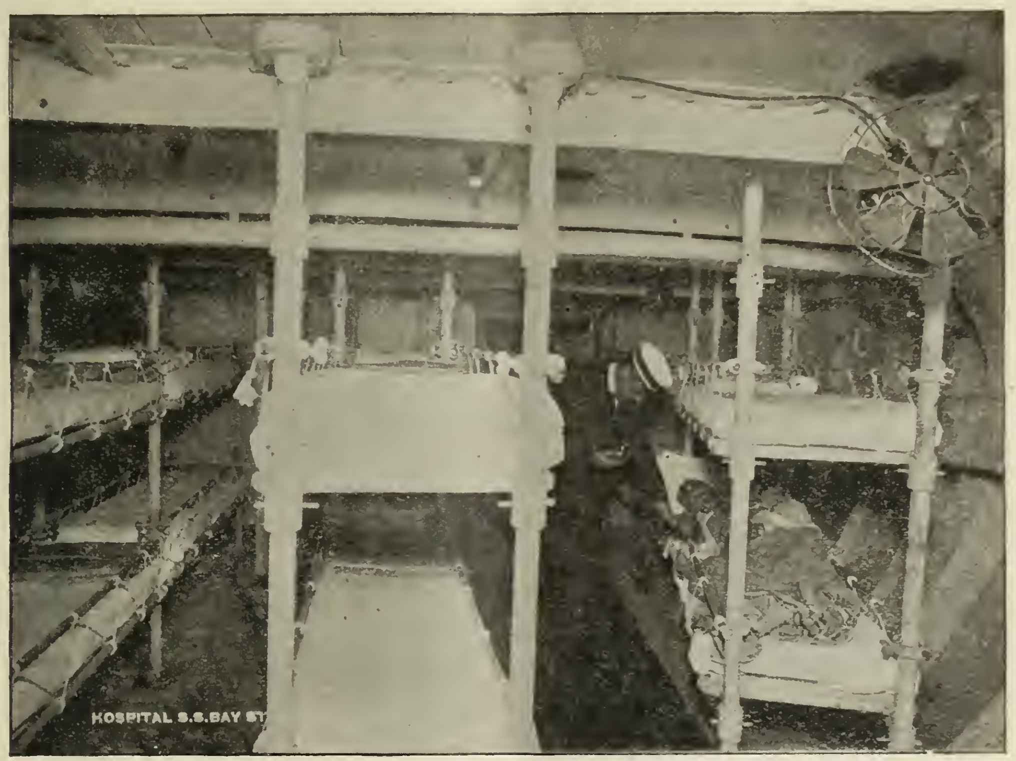

Fig. 11. Isolated ward, two tier construction, bulkhead which can be put up shutting off ward from rest of ship.

The forecastle is fitted with iron berthing frames for the men, and with two mess tables. Berthing capacity for eighteen men.

The upper or main deck has steel deck-house forward containing six rooms. These rooms were occupied by the doctors and two of the engineers. On the port side forward of this house are two water-closets enclosed in a small steel house, which house also contains space for oils, paints, etc.

The main deck-house, which also covers the engine and boiler space, contains the first and second mates' room, two bath-rooms — one fitted with bath-tub, and one with shower-bath — with floors of asphalt. At the aft end of this house is the galley with dumb-waiter connecting with hospital ward. (Fig. 2.) The aft house on this deck contains five staterooms, two pantries, a cabin and a water-closet. Three of the five staterooms were used by the female nurses.

The pilot house and captain's room are on the bridge deck, which extends from forward end of forward house to stern of vessel. A strong galvanized rail with awning stanchions is fitted on this deck. Hatches are arranged over the hatches to the wards so that patients can be lifted from the hospital wards to the deck. Attached to the beams are hammock hooks for swinging hammocks. There is an awning to cover this entire upper deck. (Fig. 3.)

Sanitary Arrangements. — The waterways at sides of wards are cemented. Scuppers, 4 inches diameter, are fitted. All water-closets are of the Hercules type with tanks for flushing. (Fig. 4.) The closets are placed so that soil pipes lead through side of ship above water line, and are fitted with storm valves. The water service is from a pump which runs continuously, the overflow from tanks flowing through the closets. The baths are arranged with Gegenstrom heaters except the shower-bath. All plumbing is open.

Ventilation. — A large blower is located in upper engine-room. The suction pipes extend through the after and forward wards, with branch to lower between decks forward. Openings in pipes are covered with wire netting, and dampers are fitted to regulate the draught. The air is changed very rapidly. The discharge pipe extends up through engine-room skylight with delivery some distance above bridge deck.

The ice-machine room is ventilated by a pressure fan, outlet pipes running through upper and bridge decks.

About fifty-four electric fans are located throughout the wards, and one in each stateroom.

Hatches. — The hatch openings on main deck have iron frames with canvas covers, which are to be used in heavy rain storms. Hatch covers of wood are fitted so that in case of a violent storm they can be put in and battened down.

Lighting. — A direct connected engine and dynamo are located in the lower engine-room. The vessel is wired throughout. There are about one hundred and fifty lights. The fittings for lights are the same as for electric fans.

Fire Service. — Connection on deck from single pump, and outlets on water service pipes with hose to reach to any part of vessel.

General. — Vessel is fitted with steam windlass and steam steering gear, one alco-vapor launch, four lifeboats, two rafts, and about one hundred and seventy life preservers.

The details of construction are all carefully worked out. All berth frames are of one size, 24 by 74 inches, and are interchangeable. The substitutes for side boards for berths are rods clamped to standards by a yoke. The serving tables are conveniently located in the wards, as are also the closets for linen, etc. The inside and outside of vessel received several coats of paint, and the final coats in wards were of enamel white.

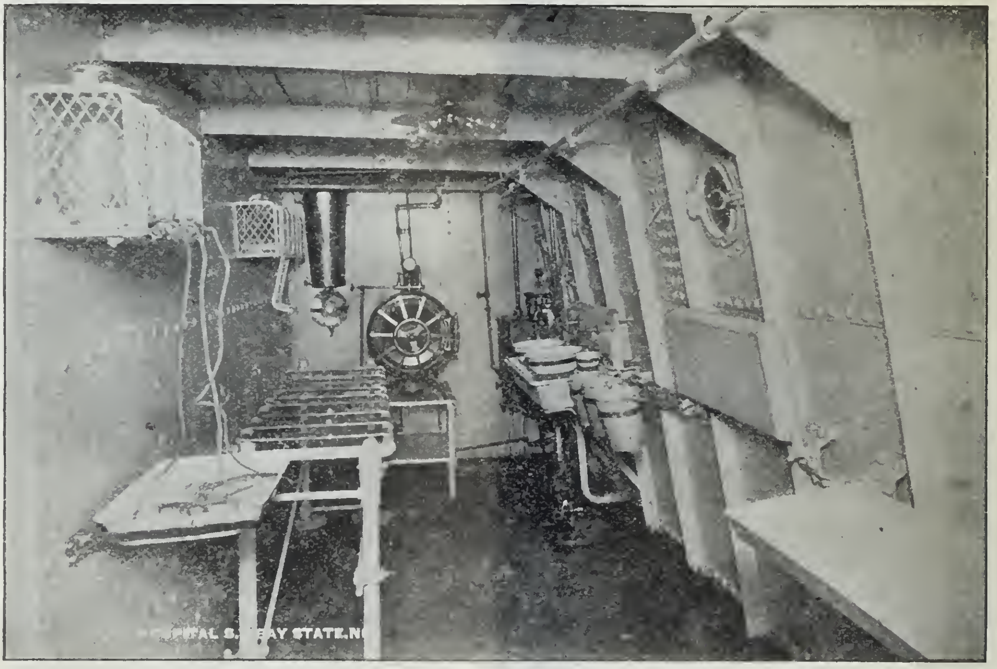

FIG. 12. Operating-room.

There are side ports at main deck, two on starboard and two on port side, through which patients can be brought on board or taken ashore directly from the wards.

Appended are memoranda giving general dimensions of vessel, sizes of engines, etc.:

Principal Dimensions of Hull. — Length between perpendiculars 199.5 feet. Breadth, extreme, 27.1 feet. Depth 19.8 feet. Tonnage, measurement — gross 776.60; net 388.30.

Main Engines.—20″, 32″, 53″ diameter of cylinder by 36″ stroke.

Main Boilers. — Two, Scotch type, 11′ 5″ diameter x 10′ long. Two 36″ furnaces in each boiler; 143 pounds steam.

Auxiliary or Donkey Boiler.—One upright tubular, 60″ inside diameter, 9′ high, 54″ diameter furnace of 150 pounds steam pressure.

Windlass.—No. 4 Hyde 6″ x 8″, double engines.

AUXILIARY MACHINERY.

Pumps.— Bilge and ballast pump, Knowles duplex, 7½″ x 4½″ x 10″. Deck and fire pump, Knowles single, 7″ x 4″ x 7″. Distiller circulating, Blake duplex, 5½″ x 5″ x 6″. Donkey feed pump, Blake single, 7½″ x 4½″ x 10″. Fresh water distributing, Blake single, 6½″ x 4⅝″ x 8″. Evaporator feed pump, Blake single, 3″ x 1¾″ x 3″. Ice-machine circulating, Blake special duplex, 6″ x 5¾″ x 6″. Ice-machine brine, Deane duplex, 6″ x 5¾″ x 6″.

Dynamo and Engine.— Sturtevant type, direct connected. Engine 5″ x 4″ double vertical, 575 R. P. M. Dynamo multipolar 12,000 Watts at 110 volts.

Evaporator and Distiller Plant.—James Reilly Repair and Supply Co. Capacity 3,000 gallons in twenty-four hours.

Ventilating Fans.— One 70″ exhaust fan, Sturtevant, for ward ventilation. One 40″ pressure fan, Sturtevant, for ice-machine room ventilation.

Ice Machine.—Capacity 5 tons in twenty-four hours. Engine cylinder, single, 10½″ diameter x 15″ stroke. Compressor cylinder, single, 7½″ diameter x 15″ stroke.

Coal capacity, 166 tons.

Draught loaded, 9′ forward, 13′ 8″ aft.

Tanks, Fresh Water.— Fore-peak supply and trimming tank, 8,000 gallons capacity. After-peak supply and trimming tank, 2,500 gallons capacity. Two supply tanks in after hold, total 2,300 gallons capacity. One pressure tank for running water head. 250 gallons capacity. Ballast tank bottom from aft engine-room bulkhead, 48 tons capacity.

Tanks, Oil.—One tank for vapor launch supply, 210 gallons. Three engine supply tanks, 58, 58 and 55, 171 gallons. (Fig. 5.)

Sterilizing Machine for Bedding, etc.—4′ 6″ diameter x 6′ 6″ long.

LAUNDRY MACHINERY. (FIG. 6.)

One 4″ x 4″ steam engine. One wooden machine 22″ diameter, 26″ long, rev. 160. One power wringer, rolls, 3½″ diameter, 16″ long.

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MEDICAL EQUIPMENT.[1]

BY E. H. BRADFORD, M.D., BOSTON.

THE equipment of the hospital ship *Bay State* was planned with the idea that she should be ready for whatever emergency the chances of war might bring, with the chief idea, however, that she should serve as a hospital transport for the transferring of the sick to mainland hospitals and with preparations only for short trips. As she was visiting a country where yellow fever was to be expected, it was necessary that her construction should be such that it could be easily and thoroughly cleaned and fumigated. Wood construction was therefore discarded and ironwork substituted. It was necessary that the ventilation should be good; that facilities for making ice, for furnishing pure water under all circumstances, and for furnishing delicacies for the sick be provided.

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[1] Read before the Boston Society for Medical Improvement, November 21, 1898.

An operating-room, for any emergency which might arrive, was demanded. Although it was not anticipated that much surgery would be needed upon the ship, preparations were made for thorough asepsis and autisepsis, in case any was required. (Fig. 7.)

It was also thought advisable to arrange that the patient could, if necessary, be transferred from the ship to land without removal from the frame which serves as a bed. To make this possible, the gas-pipe berth frames, used for sailors in many of the recently built yachts and steamers, were made detachable. In place of the canvas stretched on the frame (making of it a flat hammock), a wire mattress was used, secured to both ends of the frame by means of screw-threaded rods fastened to the ends of the mattress on one side, and on the other to the cross rods of the frame. Any degree of tension of the mattress was secured by means of a screw nut, and, if necessary, the wire mattress could be removed. On the wire mattress a coir (African hair) mattress was placed. The frames were secured at the four corners by socket castings to four uprights fastened to, but detachable from, sockets screwed to the floor and ceiling. On these uprights suitable castings slid (secured by a pin at a required point), furnished with a strong hook, one at each of the four posts. On these hooks the mattress frame was placed. The construction of the frame was such that it fitted the hooks in such a way as to give no rattle or motion. The frames were sufficiently wide for an adult male. They could be readily removed from the back by lifting from the hooks, and if a patient lay upon them, the individual could be carried wherever it was desired without being removed from his bed. To prevent the patient from being thrown out, in case of rolling of the ship, a side rod was placed and secured at any desired height to each of the four uprights by passing through a screw clamp. Where more than one was necessary, a second one also could be placed, which would prevent the patient from slipping through, if such was needed. Cord lashings were also used for lashing the rod to the frame, to prevent the patient slipping under the rod. The upright rods were hollow and three inches in diameter; the frame made of gas-piping an inch and a half in thickness. The side rods were three-quarters of an inch solid rods. (Fig. 8.)

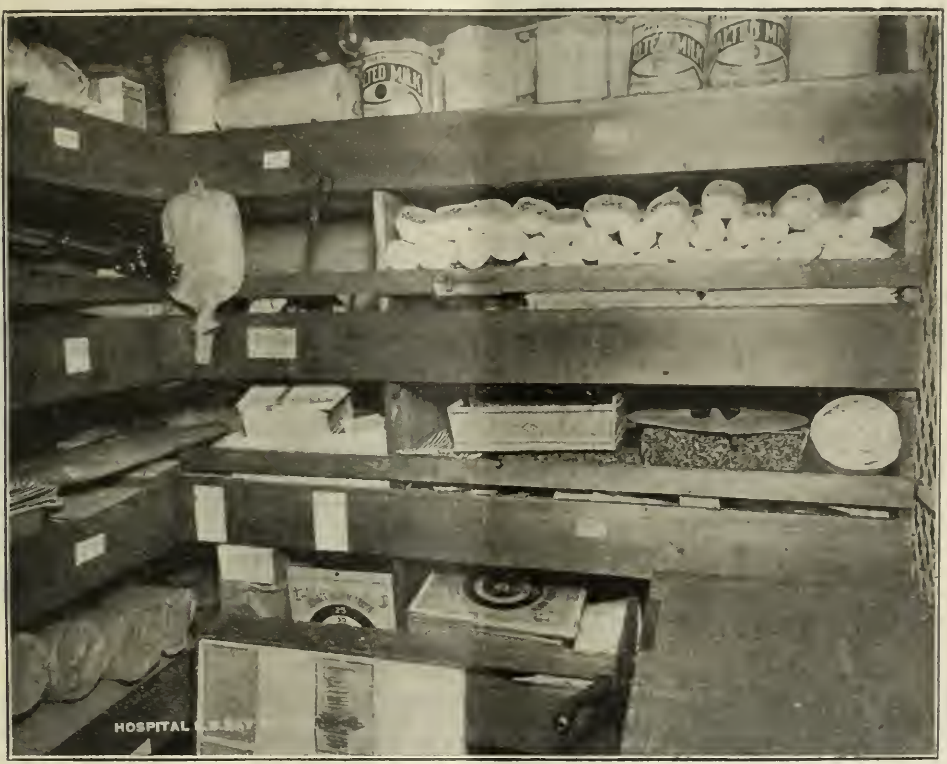

Fig. 13. Supply-room.

The arrangement of the berth stacks varied in the two wards according to the space, but in both, aisles were left sufficient in width for the removal of the patients. Arrangements were made for two or three tiers of frames, three if the vessel were crowded, and two under ordinary circumstances. The centre of the ward over the hatchway was partially floored in, and a serving table of wood was placed upon the hatchway. (Fig. 9.)

A hoistway was made with arrangements for hoisting the frames through the hatchway upon the deck, if that was desirable. The sinks and water-closets were separated from the wards by an iron sheathing, making a separate room. Standing bowls and bathtubs, screened by rubber hangings, were placed in each ward, supplied with Gegenstrom water temperature regulators. (Figs. 10 and 11.)

The operating-room was necessarily small, and was arranged so that the operating facilities should be in the most compact form. Instruments and dressings were placed in a closet with iron wickerwork doors, and shelves of the same construction. Iron wickerwork cages were also placed for bottles of sterilized water. Iron frames were hinged to the wall, into which agate-ware trays could be placed for dressings or surgical instruments. These hinged frames could be folded up against the wall when not in use. The same is true of places for basins placed over an iron sink, and for sterilized solutions for the surgeons' hands. (Fig. 12.)

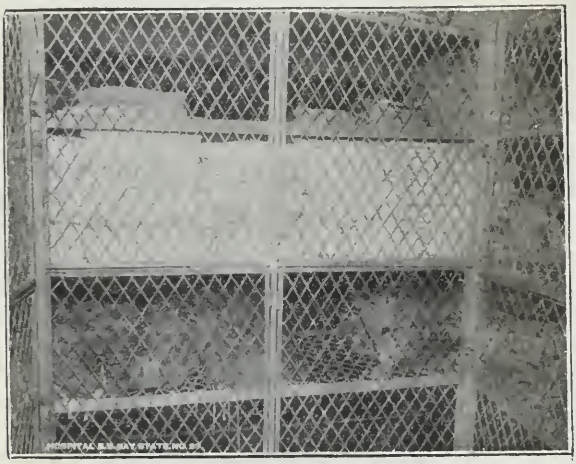

FIG. 14. Linen closet.

The operating-table consisted of an iron-piping frame resting when in use on two iron-pipe stands which were secured at the sides by side rods clamped onto the stands. Across the frame were placed flat plates of nickel plated steel four inches wide, and long enough to be hooked over the sides of the frame. When the plates were placed together a smooth surface was furnished, on which a patient could be placed, and which could be made aseptic, each plate being sterilized before operation by steam sterilization. Separating the plates permitted irrigation fluid to drain from the surface of the operating-table to a chute below, made by securing a rubber sheet to the sides of the frame cut so that it would slope into a pail below. Two operating-tables were furnished, to be taken apart and stacked at the side of the room when not used; a steam sterilizer for sterilizing dressings, a filter for water, and an electric water heating arrangement for boiling surgical instruments, an asphalt floor with a side gutter and escape pipe, and arrangement for hanging sterilized sheets to the walls of the operating-room, permitted as complete asepsis as was possible. The water faucets were arranged to work with the foot, instead of the hand. (Fig. 13.)

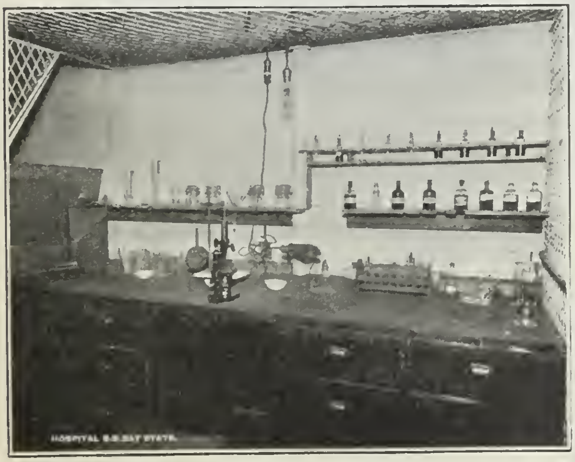

FIG. 15. Clinical laboratory.

The ventilation of the wards was excellent, and was furnished by an exhaust system, made preferable in this instance over the plenum by the large hatchways; supplementary to this were windsails to the hatches in suitable weather and a large number of electric fans. An x-ray appliance was supplied in the forward ward. In the lower forward deck the apothecary service was arranged with the medical supplies and also an ample arrangement for the surgical supplies. A clinical laboratory was also equipped here with facilities for the requisite tests. (Figs. 14, 15 and 16.)

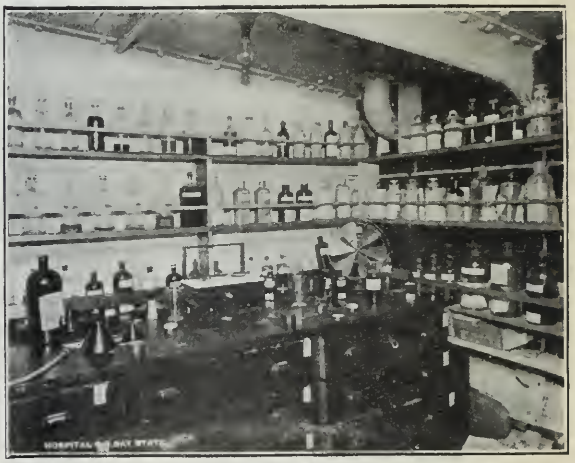

FIG. 16. Pharmacy.

Any statement of the equipment of the *Bay State* would be incomplete without an expression of thanks for the enthusiastic help rendered by the different local aid associations and to different individuals, who generously supplied everything which could suggest itself as of possible benefit for sick soldiers, to say nothing of the personal work so lavishly expended by all.

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THE METHOD AND CHARACTER OF WORK DONE BY THE MASSACHUSETTS HOSPITAL SHIP "BAY STATE."[1]

BY HERBERT L. BURRELL, M.D., BOSTON.

On August 6, 1898, the work on the ship and its equipment being essentially completed, it sailed with the following medical department and complement of officers and crew:

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[1] Read before the Boston Society for Medical Improvement, November 21, 1898.

Medical Department. — Surgeon-superintendent, Dr. Herbert L. Burrell; first surgeon, Dr. E. A. Crockett; second surgeon, Dr. J. T. Bottomley; purser, Mr. W. H. Seabury; first assistant surgeon, Mr. T. J. Manahan; second assistant surgeon, Mr. C. L. Spaulding.

Nurses. — Head nurse, Miss C. W. Cayford; Miss Janet Anderson, Miss Muriel G. Galt, Miss Anna M. Blair, Miss Sadie Parsons, Miss Sarah Fraser.

Baymen. — S. Hooker, F. P. Droese, L. L. Kemp, W. F. Lyford, Peter Salveson, N. E. Nichols.

Navigation Department. — Deck department, P. F. Butman, master; Charles Clare, first officer; William M. Swasey, second officer.

Quartermasters. — Solomon Bateman, George A. Gridley.

Boatswain. — Charles Brown.

Seamen. — William Offenberg, Harry Soutter, William A. Green, James Galligan.

Engineer Department. — Charles Lindgren, chief engineer; H. Kelly, first assistant; G. Anderson, second assistant.

Oilers. — Joseph Witzel, C. Keating, J. E. Born.

Firemen. — Joseph Fitzgerald, George Wiley, Thomas Norton, F. Flack, N. Carroll.

Steward's Department. — F. J. Leonard, steward; Louis Greaty, cook; William Gardner, second cook.

Waiters. — E. McApee, Harry Lepagle, Thomas Cronin and a mess boy.

It sailed under the following commission of the President:

[COPY]

This Commission Witnesseth, That the Massachusetts Volunteer Aid Association hereby is recognized by the Government of the United States of America as an Aid Society within the terms of Article XIII of the Geneva (Red Cross) Convention, during the pending war between the United States of America and the Kingdom of Spain; that said Association hereby is expressly authorized to fit out and equip at its own expense a Hospital Ship for all the purposes of such a ship during said war, said ship to be named "The Bay State" and that C. A. Siegfried, Medical Inspector of the United States Navy, hereby is authorized to have control of said Hospital Ship during her fitting out and on her final departure, and to issue his certificate as the proper naval authority under Article XIII of the Geneva (Red Cross) Convention aforesaid, that she had been so placed under his control, and that she is then appropriated solely to the purposes of her mission.

Given under my hand at Washington this 23d day of June, in the year of Our Lord, one thousand, eight hundred and ninety-eight, and in the 122d year of the Independence of the United States.

By the President.

WILLIAM McKINLEY.

John D. Long, *Secretary of the Navy.*

It had the following Certificate of Inspection:

[COPY]

CERTIFICATE OF INSPECTION.

By virtue of the authority vested in me by The President of the United States of America, and The Honorable Secretary of The Navy, I have the honor to certify that, after due inspection and full knowledge, the Hospital and Ambulance Ship "Bay State" equipped and to be maintained at the expense of the Massachusetts Volunteer Aid Association, of the State of Massachusetts, has fulfilled every requirement and obligation, in her equipment, stores, and personnel, of the Geneva (Red Cross) Convention (Art. XIII concerning the marine): and, that she is entitled to all the privileges, protection, and neutrality, accorded to hospital ships under that international agreement.

C. A. SIEGFRIED,
Medical Inspector United States Navy.

Boston, Mass., August 6th, 1898.

As an aid association hospital ship the problem of its control and government was unique. It required careful thought and consideration, and the Association was indebted to the services of Mr. Frederick Dodge and Commander Green, who carefully evolved a plan of control.

The title of surgeon-superintendent was selected as designating an official who would have not alone the medical charge of the ship but would represent the owners; for, as can readily be understood, the proper control of a hospital ship should be vested medically. And yet the difficulty arose of divided responsibility. It was clear that there should be only one captain on board the ship, for the exigencies and customs of the sea service demand that there shall be only one authority. In a way the position of the surgeon-superintendent was not unlike that of a supercargo of a vessel.

The surgeon-superintendent was given instructions by the Board of Control, Mr. H. L. Higginson, Mr. R. M. Burnett and Dr. H. L. Burrell,[2] placing the ship entirely in his charge, the safety of the vessel from the navigation standpoint to be in the hands of the master, and yet the point to which the vessel should go, the immediate control of the ship wherever influencing the welfare of patients, — in these the master was placed under the direction of the surgeon-superintendent.

The following articles were signed by all members of the medical department. The navigation department signed the ship's articles, under the master.

MASSACHUSETTS HOSPITAL STEAMSHIP "BAY STATE."

It is hereby agreed by and between Herbert L. Burrell, surgeon-superintendent of said hospital steamship, on behalf of the Massachusetts Volunteer Aid Association, and the several persons whose names are hereto subscribed, as follows:

(1) Said persons agree to serve in the several capacities below set against their respective names in the hospital service of said ship, and on board her, she being now bound from the Port of Boston to such ports or places as it may be found necessary to have her visit in the course of her employment for hospital purposes during the present war; provided, also, that if found necessary, she is to make continuous trips between such ports or places and ports in the United States as may be ordered, and back to a final port of discharge in the United States, for a term of time not to exceed three months in all from the date hereof.

(2) Said persons further agree to conduct themselves in an orderly, faithful, diligent and sober manner, and to be at all times obedient to the lawful orders of the surgeon-superintendent, or whoever may succeed him in that office, in everything relating to the hospital service of said ship; and to the lawful orders of the master of said ship in the exercise of his authority as master over all persons on board not members of her crew.

(3) In consideration of said service to be duly performed, said surgeon-superintendent hereby agrees to pay them for each and every month's service the sums below set againt their respective names, and at the same rate for any time of service less than one month; and also to provide them (subject to the emergencies of said service) with suitable food and accommodations on board said ship.

(4) Unless sooner discharged as below provided, the said persons hereby each agree to serve as above during the continuation of the present war, and for such further time thereafter as may be necessary for the proper completion of the service in which she may be then engaged. But no person is to be hereby bound to serve as above for a longer term than three months in all.

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[2] Dr. E. H. Bradford acted on the Board of Control during the absence of Dr. Burrell.

(5) It is agreed that said surgeon-superintendent, or whoever may succeed him in that office, may, whenever he shall deem it expedient for the interest of the service for which said ship is destined, discharge any of the persons signing this Agreement from service on board her, and terminate this Agreement as to such person, by giving such person one week's notice that he or she is so discharged, and that this Agreement is so terminated as to him or her. At the expiration of such notice, if said ship is then in port, or upon her arrival at the next port at which she may arrive after the expiration of such notice, such person shall leave the ship, and all his or her rights under this Agreement to further compensation or to further food and accommodation on board shall cease; except that, if such person's discharge from the ship as above takes effect at a port out of the United States, he or she shall be entitled to the reasonable expense of returning to the United States, and to wages at the rate herein expressed during the time reasonably necessary for such return.

Dated at Boston this first day of August, A.D., 1898.

Provision was made in these articles, as will be seen, for the dismissal for good cause of any of the members of the medical department, and it is interesting, as illustrating the wisdom of the articles of service as drawn up by Commander Green and Mr. Frederick Dodge, that during the successive voyages it was never necessary to refer to the Articles of Agreement. The authority was established at the start instead of being allowed to develop as occasion demanded.

Selected and elected to their respective positions, as the medical department were, out of an extraordinarily large number of applicants, it was and still is a matter of wonderment that they adjusted themselves so perfectly to the conditions which they met and to the individuals with whom they associated.

After sailing it became necessary to lie for some forty-eight hours in President's Roads to restore order out of chaos. The ship was broadly divided into two departments: (1) navigation; (2) medical. Under the navigation department were the engineers' and stewards' departments. The stewards' department was definitely assigned by the master of the ship, Captain P. F. Butman, to the purser.

The organization was simple. If any member of the medical department wished anything done in the navigation department or engineers' department, the request was made through the surgeon-superintendent. If any member of the navigation department wished anything done in the medical department, the request was made through the master of the ship. While the above was the rule, yet it was rare that it was carried out to the letter. It was difficult for those connected with the ship, both in the navigation and medical departments, to see the necessity for this provision.

The surgeon-superintendent received daily reports from the master of the vessel as to the quantity of fuel, water, position of the vessel, and the master of the vessel was directed to report at any time any imminent exigency that might arise.

The cleanliness of the ship was suggestively controlled by the medical department. The actual work was done by the navigation department, except in the parts of the ship, wards, etc., directly occupied by the patients.

The work of the various officers was as follows: The surgeon-superintendent had no specific duties, but was in charge. The executive officer, who was the first surgeon, was the one who carried out the directions of the surgeon-superintendent in the medical department. The second surgeon was in charge of the patients. Practically he was visiting physician. The first assistant surgeon was in charge of the forward ward, and the second assistant surgeon was in charge of the aft ward. The purser was in charge of all financial accounts and the stewards' department. The head nurse was in charge of the nursing. The baymen were under the direction of the visiting physician. The orders for their work were written in a separate book and while they were told that they must co-operate with the head nurse, yet they were not directly under her.

The division of work in the wards was that which exists in a well-regulated hospital. It was impractical in many ways to carry this out fully, yet the general spirit was that the ship was a hospital platform. As a supply ship it became necessary to know definitely the position of everything on board in order that when supplies were furnished their character and quantity should be accurately known. This work was largely done by the second surgeon and by the head nurse, who was acting property clerk. The financial interests of the ship were looked out for by the purser, in conference with the master and surgeon-superintendent.

The ship was obviously intended primarily for the care and well-being of Massachusetts troops; this, however, not to the exclusion of other volunteers or regular troops. She was specifically fitted out as a supplementary aid to the medical departments of the United States Army and Navy, and wherever any question arose as to what the ship should do, — for example, the transportation of caskets, the receiving of passengers, the moving of supplies, — all were decided after reference to what the ship was equipped for. It made it easy to make decisions, but at times they seemed unelastic and arbitrary.

The surgeon-superintendent had been provided with the following letters:

NAVY DEPARTMENT.

WASHINGTON, JULY 22, 1898.

SIR: — The Hospital Ship *Bay State* has been fitted out by the Massachusetts Volunteer Aid Association, and has been commissioned by the United States Government under the International Red Cross Convention. The purpose of the ship under the direction of its Surgeon-Superintendent, Dr. H. L. Burrell, is to aid the medical authorities of the Army and Navy of the United States in caring for the sick and wounded soldiers and sailors. You are directed to aid and assist the authorities of the *Bay State* as far as practicable. When they need coal and cannot otherwise obtain it, you are authorized to supply it, if it can be spared, taking a receipt in duplicate for the amount, and cash or draft on Lee, Higginson & Company, of Boston, in payment.

Very respectfully,
(Signed) JOHN D. LONG,
Secretary.

To commanding officers of United States Squadrons and Vessels.

WASHINGTON, D. C., JULY 22, 1898.

DEAR DOCTOR: — Permit me to introduce Dr. H. L. Burrell, Surgeon-Superintendent of the Massachusetts Aid Society Hospital Ship *Bay State*. He goes in charge of the *Bay State* to care for any sick or wounded of the Army or Navy.

I hope you will extend him all the facilities in your power toward the accomplishment of his good work.

Yours very truly,
(Signed) W. K. VAN REYPEN,
Surgeon-General, U. S. Navy.

C. M. GRAVATT, U. S. N., *Fleet-Surgeon,*
U. S. Flagship New York.

WAR DEPARTMENT.

Washington, July 22, 1898.

Sir: — The Hospital Ship *Bay State* has been fitted out by the Massachusetts Volunteer Aid Association, and has been commissioned by the United States Government under the International Red Cross Convention. The purpose of the ship, under the direction of its Surgeon-Superintendent, Dr. H. L. Burrell, is to aid all the medical authorities of the Army and Navy of the United States in caring for the sick and wounded soldiers and sailors. You are directed to aid and assist the authorities of the *Bay State* as far as is practicable.

Very respectfully,
(Signed) R. A. ALGER,
Secretary of War.

To the officers commanding U. S. Troops.

WAR DEPARTMENT.

Surgeon-General's Office,
Washington, August 2, 1898.

To the Officers of the Medical Department, U. S. A.:

Gentlemen, — The Hospital Ship *Bay State*, having been equipped and fitted out by the Massachusetts Volunteer Aid Association, is in charge of the Surgeon-Superintendent, Dr. Herbert L. Burrell, and I have requested him to render such supplementary aid and assistance to you as may be required.

Very truly yours,
(Signed) GEORGE M. STERNBERG,
Surgeon-General, U. S. A.

The method adopted of rendering aid to troops was in general as follows:

First, some officer of the medical department of the ship reported in person to the ranking officer in the army or navy who was present, that the ship had arrived, presented her credentials and asked for suggestions as to the manner in which they could render aid. Second, an officer of the medical department of the ship placed himself in communication, for advice, suggestions and directions, with the chief medical officer of the army or navy who was present. As the ship was not under the direction of either army or navy, and had a roving commission, the advice, suggestions and directions received from these various sources were considered and a line of action was adopted. There were many distinct advantages connected with the position of the ship. The natural self-interest of an organization would frequently deflect it from giving advice as to where the ship could be most useful, which was obviously the function for which she was equipped.

However, one principle dominated the aid rendered by the ship and it was this: to find out as far as possible what was needed by the authorities in charge, and to co-operate with them in every way possible, to render them assistance in the way in which they wished. It became very clear that the best way to assist them was to do what the authorities in charge wished and not what the surgeon-superintendent might consider necessary and best. In a few instances it was necessary to disregard constituted authority.

A great deal of work was done by the pathologist of the ship, Dr. Cabot, who accompanied the ship on her second voyage, in the general hospital at Ponce and Guanica.

The designation of what patients were to be taken was at times difficult and complicated. In a few instances an effort was made to press upon the ship unsuitable cases, but this was due to a desire on the part of the medical authorities to relieve a condition which seemed to them unbearable. However, in all instances where patients were taken, they were definitely assigned to the care of the ship by the chief surgeon of the military district.

Wherever it was possible, identification papers were sent with the patients, and when we reached the home port the patients were disposed of by being assigned nominally to a representative of the United States Army. Substantial records were kept of the patients, and the following is the form of blank that was used for histories:

HOSPITAL SHIP "BAY STATE."

Name Date
Age Native of No. Berth No.
Grade
Address
Address nearest friend
Received from
Disability
How and where received
Date
Discharged. Condition
Delivered to
Medical record

Surgeon in charge.

A discharge card was also given in every instance. This was for the purpose of identification, to prevent frauds, and to enable the patients to bring legitimate claims against the Government. On reaching the home port duplicate medical histories of patients were made out and were forwarded to the representative of the United States Government to whom the troops were nominally delivered, with the request that these records be delivered, through the proper channel, for deposit in the Surgeon-General's Office in Washington.

The ship did work in three different directions: (1) She brought home 336 patients. Of that number five died. The percentage of mortality was 1.49 per cent.; subtracting a patient who died before leaving Santiago Harbor, this reduces it to 1.19 per cent. This work was carried out at Guantanamo, Santiago, Caimanera, Guanica, Ponce, Arecibo, Utuado and San Juan. (2) She gave medical and surgical supplies to patients at all of these points. She supplied with many essentials a yellow fever hospital at Santiago and at Siboney; furnished a number of supplies at Utuado; essentially equipped a hospital of seventy beds at Arecibo and of eighty beds at San Juan; furnished a large amount of supplies at Ponce and Guanica; relieved starvation at Caimanera; furnished supplies at Guantanamo, and incidentally furnished necessities and luxuries to vessels of the United States Navy. (3) On the first voyage to Porto Rico it was found that the problem of caring for the sick of the Sixth Regiment was a difficult one, and it was determined to leave the seriously ill patients at Utuado, owing to the difficulties arising from the transportation from Utuado to Arecibo. The ship at this time took essentially all the convalescent patients of the regiment and left as a supplementary aid to the medical department of the 6th Regiment, under the direction of the medical agent of the Massachusetts Volunteer Aid Association, Dr. J. Booth Clarkson, who afterwards acted as purser of the ship, and the following nurses and baymen: Miss Parsons, Miss Galt, Mr. Kemp and Mr. Lyford. (4) The mental influence of the ship should not be lost sight of. It was distinctly a sense of encouragement to troops, especially the officers, wherever she went. The sense of encouragement in many instances was so marked that it, figuratively speaking, placed men on their feet and enabled them to carry on their work. The following quotation from a letter of Major L. C. Carr's expresses this mental influence: "Is like a ray of hope in a desert of desolation." She was always welcomed wherever she went and it was a rare pleasure that was afforded to the officers of the ship to act as the dispensers of the charity of the Massachusetts Volunteer Aid Association.

THE MEDICAL AND SURGICAL HISTORY OF THE HOSPITAL SHIP, "BAY STATE."[1]

BY J. T. BOTTOMLEY, M.D., BOSTON.

PERHAPS not the least interesting and instructive of the developments of the late war was the work done by hospital ships. Both the army and navy possessed such ships as adjuncts to their regular medical service and found them invaluable. Attached to neither, but co-operating with both, was the hospital ship, *Bay State*, sent out by the Massachusetts Volunteer Aid Association.

It may add to the interest of her history to know that the sending out of this ship was an unique occurrence in two particulars: she was the first hospital ship in the world to be fitted out by an aid association and authorized by a sovereign power under the articles of the Geneva Conference; she was the only hospital ship in the late war sent out by the people of any State to care for its soldiers — a distinction that added to the already great fame of Massachusetts, and made her soldiers the envy of their less fortunate brothers.

Under the auspices of the Volunteer Aid Association the *Bay State* made three trips to and from Cuba and Porto Rico and was in active service about three months, during which time she received on board, as patients, 336 soldiers. To care for these she carried on her first trip five physicians, six nurses and six baymen; on her second, six physicians, six nurses and eight baymen; on this trip two of the nurses and two baymen were left in Porto Rico to aid in the management of the hospital of the 6th Massachusetts Regiment at Utuado; on her third trip she carried four physicians, six nurses and six baymen. These comprised the working medical force of the ship.

The first consignment of patients was made up of 101 men of the 2d and 9th Massachusetts Regiments— 40 from the 2d and 61 from the 9th; these were received at Santiago, Cuba, in August of the present year. The second and third consignments came from Porto Rico in September and October; the second consisted of 100 and the third, of 135 men. Of these 235, 207 were from the 6th Massachusetts Regiment, 25 from the 1st U. S. Volunteer Engineers, 2 from the U. S. Hospital Service and 1 from the 5th Light Artillery.

We naturally preferred to have Massachusetts soldiers as patients, because the boat was fitted out and supported by Massachusetts people and money; but when sick Massachusetts men were not to be found we were glad to receive and care for the sick of other States, as well as of the regular service. Of our 336 patients, 321 lived in Massachusetts, 7 in New York, 3 each in Pennsylvania and Maryland, 1 in Connecticut and 1 in New Jersey.

All these patients were received in tropical climates after they had been there from six to sixteen weeks. Our work was to take the men and care for them until they were delivered to the proper authorities at whatever point it was deemed expedient. All of our patients were landed at Boston.

In the 336 patients whom we carried, the following diseases were represented:

Malaria and Complications. — Acute, 34; convalescent, 32; with chronic diarrhea, 14; with dysentery, 16; with yellow fever (convalescent), 5; with phthisis, 1. Total, 102.

Typhoid Fever. — Acute, 20; convalescent, 53. Total, 73, including post-typhoidal abscess of thigh, 1; of parotid, 1; post-typhoidal neuritis, 3.

Diarrhea. — Acute, 55; convalescent, 42; with malaria, 14; with neurasthenia, 1; with tonsilitis, 1. Total, 113.

Dysentery. — Acute, 16; convalescent, 9; with malaria, 16. Total, 41.

Yellow Fever. — Convalescent, 16.

Rheumatism, 7.

Scattering. — Gonorrhea, 4; debility, 4; febricula, 4; hernia, 4; bronchitis, 3; gastritis, 2; phthisis, 2; after-effects of sunstroke, 2; syphilis, 1; sprained ankle, 1; varicocele, 1; septicemia, 1; myelitis, 1; cardiac, 1; cervical adenitis, 1; flat-foot, 1; paresis of extensor muscles of hand, 1. Total, 34.

The foregoing table demonstrates that of the 336 patients, 102, or 30.36 per cent., had malaria; 73, or 21.73 per cent., had typhoid; 113, or 33.63 per cent., had diarrhea; and 41, or 12.2 per cent., had dysentery. Considering dysentery and diarrhea together, they affected 154 of the 336 patients, or 45.86 per cent. This means that 45.86 per cent of the patients as they came on board had some degree of diarrhea or dysentery; yet these figures do not convey a fair idea of the prevalence of intestinal affections among the troops. Almost every northern soldier who was sent to Cuba or Porto Rico had a more or less severe attack of diarrhea during his stay there. Improper food, its improper preparation, the failure of the men to grasp the great importance of boiling all drinking-water and the careless use of tropical fruits, all aided in producing a disastrous effect. When you add to this the necessary exposure to wet and dampness, without the possibility of exchanging wet clothing for dry, the prevalence of intestinal inflammation is not remarkable.

There is one striking fact brought out by the table and one that speaks for itself of the general *morale* of Massachusetts soldiers. It is the very small number of cases of venereal disease among the men. There were but four cases of gonorrhea and one of syphilis. This is all the more remarkable when we consider the low standard of morality among the natives in both Cuba and Porto Rico. Of course, these men were ill, and, perhaps, in them the chance of exposure was less; but, even granting that, the percentage, under the conditions, is low.

Let us now consider the diseases of the patients brought from Santiago on the first trip as compared with those of the men brought from Porto Rico on the second and third trips.

Of the 101 brought from Santiago, 81, or 80.2 percent., had malaria in some form; but 16, or 6.81 per cent., of the 235 from Porto Rico showed malaria. These figures probably place the percentage of malaria in Porto Rico too high; for some of these 16 cases were doubtful. Blood examination of 106 patients, among whom were these 16, showed the plasmodium only twice. Again, Dr. Cabot examined the blood of at least 100 patients in the military hospitals at Guanica and Ponce, and did not find the plasmodium once — a fact which makes it very probable that malaria was comparatively rare in Porto Rico among the soldiers. The diagnosis of malaria is put down for them out of deference to the regimental surgeon, who had far greater opportunity of observing them than we, and who had already made this diagnosis.

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[1] Read before the Boston Society for Medical Improvement, November 21, 1898.

Eight of the Santiago men had typhoid fever, a percentage of 7.92 per cent., while 63 of the Porto Rican patients showed it, a percentage of 26.89 per cent. It is probable that more cases of typhoid would have been discovered among the Santiago men had it not been for the peculiar behavior of our typhoid cultures on the first trip, which rendered the doing of the Widal test impossible. This forced us to make the diagnosis of typhoid on clinical features alone.

The percentages of the patients with diarrhea do not, as has been noted above, convey a fair notion of its prevalence. Eighteen, or 17.82 per cent., of the Santiago men had dysentery; 23, or 9.79 per cent., of the men from Porto Rico showed it. Examination of the stools for the *amœba dysenteriæ* was very difficult on ship board. Some were examined on the second trip; the examination was negative but not satisfactory. At the hospitals in the city a number of cases of amebic dysentery were found among the patients from Santiago. As far as I know, but one such case was found among the Porto Rican patients.

The 16 cases of yellow fever received at Santiago were convalescent. The diagnosis had been made by the regimental surgeons. The histories of the men did not seem to point to yellow fever but rather to malaria. However, the men who made the diagnosis had observed the whole course of the illness of these patients. Several of the cases showed a peculiar yellowish discoloration of the finger-nails, which, according to Dr. McCollom, might come after yellow fever. There were no cases of yellow fever among the patients from Porto Rico.

The above facts show well the difference in the healthfulness of the two climates. Malaria was very prevalent and of an extremely severe type at Santiago; it was very uncommon in Porto Rico, and the two undoubted cases that we had an opportunity of seeing there were very mild. Typhoid was apparently more prevalent in Porto Rico, and the type was sometimes very severe, the victims often dying from the sixth to the tenth day; in fact, autopsy would show the pathological changes in the lymphoid elements of the bowel to be in the stage of hyperplasia, there being no sloughing or necrosis. We were told that before the advent of the soldiers in Porto Rico typhoid was comparatively unknown. The soldiers brought it with them. Seventeen fresh cases of typhoid developed on the *Yale* when she was carrying the 6th Massachusetts to Porto Rico. Dysentery was much more common in Santiago and was more severe than that seen in Porto Rico. It is not within our province to attempt to explain why there was less sickness in Porto Rico than in Santiago. The climate of the former is surely more wholesome and the war was older when the campaign there began and, hence, there was more time to make preparations for protecting the health of the soldiers. Whatever the reason was, the men in Porto Rico were in a much better condition physically than those in Santiago; from the latter came the sickest-looking and, indeed, the sickest, men we had ever seen or ever expect to see. The marked muddy pallor, the great emaciation, the sunken eyes, the starved looks and the terrible weakness, which was so manifest, made a picture that cannot be adequately described. Even the men said to be fairly well looked to us sick. It was war in its most terrible aspect, shorn of all its pomp and glory, clothed in all its wretchedness and misery.

The malaria at Santiago was all of the continued and remittent type; the crescent form of the organism was present in all the cases from that place. We found the organism of the tertian form but once, and that in one of the Porto Rican patients. At Santiago the men with malaria were many of them very ill, and these cases bore a strong resemblance to typhoid fever. The temperature was irregular, but the remissions were greater than are usually seen in typhoid and did not come at definite intervals; the typhoidal facial expression was common; the spleen was enlarged but was apparently more firm than the typhoid spleen. Cachexia and anemia were marked. Malarial edema was not common but was present in several instances. Chills were not seen in all cases. Paroxysms, when they came, usually occurred in the afternoon. Co-existing diarrheas and dysenteries often complicated the diagnosis and treatment of these malarias. There were undoubtedly some instances of double infection with malaria and typhoid; this was proved afterwards at the hospitals here. The behavior of our typhoid cultures on the first trip prevented the possible discovery of the fact on the ship.

When we obtained our first stock of typhoid cultures on agar and serum they came from a perfectly reliable laboratory, and the tubes, stoppered with cotton and sealed with paraffine, were delivered in a practically air-tight jar. Ten days later, when the Widal reaction became of importance, we found that all cultures made from these were either sterile or contaminated. This misfortune we ascribed to our lack of skill and technique and to draughts of air from a windsail. The stock on the second trip came from a different source and was on agar; the tubes, stoppered with cotton and unsealed, were placed in a box covered only by paper; they were not touched for ten days; then, with the same technique, etc., in planting cultures, the results obtained were very satisfactory; the tubes not used on this trip were preserved. Fresh agar cultures were taken on the third trip and were again placed in the glass jar. When we came to use them most of them were again sterile; some were contaminated; none were useful, though, from external appearances, they seemed to be all right. Then we fell back, as a last resort, on the tubes kept over from the second trip, which were at that time over six weeks old. Again, the conditions and the technique remaining the same, these cultures gave excellent results. The cultures on the first and third trips came from the same source, and, when received, were apparently in good condition and showed a growth. The interesting points are: the apparent effect of the air-tight jar on cultures of the typhoid organism; and the very lively growth obtained from the second cultures after they were six weeks old.

The cases mentioned in the table as febriculæ formed an interesting class. They were very common in Porto Rico, and were said to have been common in Camp Alger. As far as we could learn from the four patients we had, the prodromal symptoms were like those of typhoid, though the period of incubation was not so long, being only two to three days. The most distressing symptom was pain in the back — and patients complained chiefly of that. Diarrhea and headache were usually present. The temperature ran between 102° and 104° for three or four days and then fell by lysis. An urticaria, which itched intolerably, usually accompanied the fever; while this was not the only condition in which urticaria appeared, yet it was more common with this than with the other fevers. It appeared usually in the giant form and covered irregular areas of considerable size on various parts of the body. The urticaria usually passed away with the fever. The blood of these patients did not give the Widal reaction, and whether the fever was due to a gastro-enteritis, to heat or to exhaustion — all of which were advanced as causes — we could not decide.

Blood Examinations. — The number of very ill men in our first consignment, and the amount of attention they demanded, made it possible for us to examine the blood of the sickest patients only. Fifty-six examinations were made for the *plasmodium malariæ*, and the crescent form was found in 49; 7 examinations were negative. On the second trip, with an increased medical force and fewer sick patients, 100 Widals and 100 examinations of blood for the plasmodium were done. Ninety five of the Widals were negative and 5 positive. Ninety-eight of the examinations for the plasmodium were negative and 2 positive — one showing the crescent form and one the tertian. Dr. Richard Cabot was of the greatest service to the ship on this trip. On the third trip, because of the loss of two members of the medical staff, we could do only such work on the blood as seemed necessary. Fifteen Widals were done, 11 of which were positive and 4 negative; as many examinations for the plasmodium were made, and all were negative. There are some difficulties about the use of a microscope at sea. Of course with the motion of the boat — and there is a good deal of motion in a small boat — the light was constantly changing and it was difficult to focus. If we used artificial light we had to work below decks, where it was exceedingly hot and uncomfortable. It was sometimes difficult to keep either ourselves or the microscope upright.

Surgery. — Though we were well equipped for surgical work, we did but little of it because of the cessation of hostilities. On this account, our surgical work was limited to the opening and draining of two abscesses.

Treatment. — First, of ourselves. It is notable that the medical department of the ship, aside from casualties and sea-sickness, was never incapacitated by illness. As a matter of precaution we all took four grains of quinine every morning while in Cuba. After any unusual exertion or after a trip ashore the dose was repeated and supplemented by a cup of coffee. We worked as little as possible in the heat of the day — that is, from 11 A. M. till 3 P. M. Contrary to all the principles of temperance, we never drank water when ashore. Fruits, except those carried from the north on the boat or those to which we were accustomed, were not allowed. Plenty of rest was one of the maxims. Except when the good of the ship demanded it, no one was allowed ashore after one hour before sunset. Our drinking-water was distilled from sea-water, and even the water in Santiago harbor, which was unquestionably foul, and where there is practically no tide to float the sewage, etc., away, was used by us for purposes of distillation. Some few cases of moderate diarrhea among the medical staff followed the use of this water. While the general trend of opinion among the dwellers in hot climates seems to be against sleeping at night in the open air, yet a number of the medical force of the boat did so more or less constantly, and apparently suffered no ill effects. However, sleeping in the berths on straw matting was usually not intolerably uncomfortable. When we were at sea the decks were washed down with sea-water every morning. When we were in infected harbors this process was entirely omitted. Washing of the floor about the serving tables in the wards was allowed then but once a day, and that with fresh water only. These measures were taken on the advice of some of the medical officers of the navy. They were necessary in Cuba, but not in Porto Rico.

Treatment of Patients. — While not coming exactly under the head of treatment of patients, it may not be amiss to speak here of the method employed in treating their clothing and personal effects. When a patient reached the ward after his corrosive bath he wore a suit of new pajamas. The clothing he had worn and all his personal effects that could not be injured by exposure to steam were placed in numbered canvas bags and passed through the deck into the sterilizing room. Here they were subjected for twenty minutes to steam at 340° F., under twenty pounds' pressure. All articles not sterilized by steam were placed in a box and disinfected by formaldehyde gas. Schering's lamp, with pastils, was used. The wards were disinfected by formaldehyde and thoroughly washed after each trip.

Diets. — Diets were divided into three classes: (1) liquid, (2) soft solids, and (3) ship's diet. The following articles were contained in these:

(1) *Liquid.*— Beef tea prepared from either the extract or juice, clear soups, clam juice, malted milk, Mellin's food, tea and coffee occasionally.
(2) *Soft Solids.*— Bread, puddings, eggs, oatmeal, ice cream.
(3) *Ship's.*— Soup, meats, potatoes, desserts, ice cream, fruit.

Drug Treatment. — Comparatively few drugs were used. Malaria was, of course, treated by quinine. It was usually given in 8-grain doses three times daily. Cases which did not do well under this treatment were given half-ounce doses of Warburg's tincture; the change worked very well in two or three instances. The very sick cases — those in whom vomiting was a prominent symptom or whose stomachs would not tolerate quinine — were given 15-grain doses of the bisulphate with tartaric acid subcutaneously. The anemia and cachexia were treated by Fowler's solution or by the iron, arsenic and strychnine tablet. Where arsenic was contraindicated, reduced iron was used. Steady high temperatures were treated by cold sponge baths. The hardest cases to treat successfully were those complicated by diarrhea or dysentery.

The treatment of the diarrheas varied. Mild cases, having four to six movements a day, were treated simply by a restricted diet — usually the liquid; in two or three days the diarrhea generally gave way to constipation. No drugs were given these cases. Whether the resulting constipation was the effect of the sea-air — which, some hold, is decidedly constipating — or of the rest and restricted diet matters not. Somewhat more severe cases were treated by bismuth or by the opium, camphor and tannin tablet in addition to the restricted diet. Severe diarrheas and the dysenteries showed but very little improvement under the use of drugs by the mouth. Opium was always given in these cases, but it was supplemented by large high enemata. Quinine in the proportion of thirty grains to two quarts of water, and nitrate of silver in the proportion of twenty grains to two quarts of water, were both used. One worked well in some cases, the other in others, but on the whole the quinine enemata worked more satisfactorily.

Typhoid fever was treated in the usual way. Cold sponge baths were given when the temperature required it. The diet was limited to liquids, with soft boiled eggs occasionally. The drug treatment was not unusual. Bedding that was infected was thrown overboard. After each trip all bedding, bed-pans, etc., were sterilized by steam. Rubber sheets, etc., were washed in carbolic-acid solution. All stools were disinfected with chloride of lime and carbolic acid, and the bed-pans and urinals carefully cleansed after their use. The water-closets were closely watched; chloride of lime was freely used, and flushing with corrosive was a matter of daily routine. Closets were inspected twice daily. Pails of corrosive solution, for disinfection of the hands, were always in the wards. All these precautions were taken to minimize the danger of contracting or spreading infection.

Most of the men, as they came to us, looked pale and weak. Such men we tried to tone up by iron, strychnine, etc. All had marvellous appetites, and it was difficult to restrain even the sick from over-eating; this was particularly true of the men from Santiago.

All patients who were able to be out of their berths were kept on the upper deck as much as possible on suitable days. Here in their steamer-chairs under the awnings they drew in large doses of the best of tonics — pure, fresh air. No patient was allowed to leave the wards after sundown. Even on days when the convalescents could not leave the wards — and these were fortunately few — the wards were not uncomfortable. A chart of the temperature, as indicated by a thermometer hung in the pilot-house on the upper deck and by thermometers hung in the wards, showed an average temperatnre of 80° F. on deck and of 85° in the wards. This represents the average temperature while the ship was in tropical waters on her third trip.

Mortality. — Of the 236 patients five died — three of the Santiago men and two of the Porto Rican. One of the Santiago men died before we left the harbor, and two more the first night out; all three men were desperately ill when brought on board; the cause of death was either typhoid or malaria complicated by dysentery. One of the Porto Rican patients died of typhoid fever; the other of transverse myelitis; one came to us in a state of collapse, the other with complete paralysis of his lower extremities and of the muscles controlling the bladder and rectum. The total mortality was 1.49 per cent. The mortality among the Santiago men was 2.97 per cent; among the Porto Rican patients .85 per cent. The percentages given represent simply the mortality among the patients while on the boat. A number died in the hospitals after reaching Boston. In fact, some of the men who, while on the boat, ran normal temperatures and spent most of their time on deck were afterwards admitted to the Boston hospitals seriously ill with amebic dysentery or malaria, and several of them died.

The patients, in general, improved very much during the voyage; in fact, it can be said that all, those who died excepted, left the ship in much better condition than when they came aboard her. The malarias complicated by diarrhea or dysentery improved the least. Drugs and the attending physician played a comparatively small part in bringing about this improvement. The pure, bracing sea-air, the good food and careful dieting had much to do with it. But the great factors were two: first, the splendid work of the nurses and baymen. Too much praise cannot be given to them. Under the most trying circumstances, and under conditions that were often most disagreeable and distressing, these women and men rendered magnificent service; they were able, willing, tireless and uncomplaining. It is only their just due to say that very much of the success of the hospital ship was due to her excellent corps of nurses.

The mental effect produced by the fact that they were homeward bound was the other great factor. Sick men who would have died without a struggle in the camps and hospitals took a new grip on life, and were filled with a determination to live when they realized that every throb of the engines brought them nearer to Massachusetts and home. One cannot well describe the effect of such a thought on men, but one can see despair give way to hope, and resignation to resolution — that must have its effect upon disease.

The good accomplished by hospital ships in the late war, and their valuable services to the sick of both the army and navy, assure them a place in the war of the future. The time when it was considered humane and just to carry sick on ill-fitted transport ships has passed. Note the great mortality among the men carried north from Santiago on transports. And yet this should occasion no surprise; for transports had not the conveniences either in berths or medical supplies; they were officered by men not in the regular military service, to whom the requests and advice of the physician is of small import and from whom no redress is obtainable. Let the transport remain for the well and strong, but let the properly fitted, well-officered and well-stocked hospital ship be considered the only humane way of carrying the sick and wounded.

Yet even hospital ships are not without their limits and disadvantages. There is somewhat less working room on them than in the land hospitals; this, however, is of small importance, for one soon becomes accustomed to working in limited quarters.

Sea-sickness, as far as we could observe, had no marked ill effect on the patients. Less than 10 per cent. were affected after the first twenty-four hours out. Of course, some patients were unable to take much food or medicine by the mouth for twenty-four hours. Fortunately, whether by chance or otherwise, our sickest cases were but little affected. It is possible that after abdominal operations the vomiting of sea-sickness would be a very unpleasant feature; but, on the whole, sea-sickness is not a marked disadvantage.

Diagnoses were sent with the patients in a good proportion of the cases; but we rarely received any history of the cases, of the run of the temperature, or of the previous treatment. We depended solely on what we could learn from the patient and what we could see for ourselves. This was not ideal. The defect, however, is capable of easy amendment. It should be a matter of routine that with each patient there should be sent a short résumé of his case.

The factor that limits most — and it limits it seriously — the use of a hospital ship is the problem of getting patients to the ship without doing them serious or even fatal harm. What class of patients can hospital ships take and take safely? If all military camps and hospitals were on the seashore, with good docks and landings convenient, hospital ships could handle with safety any class of patients with almost any degree of sickness. But unfortunately camps and hospitals must sometimes be inland, and the route to the sea must often be long and difficult. When disease invaded the United States Army in the tropics there came a cry from the friends of the soldiers to get the sick men north. It was a very natural but often a thoughtless call. Undoubtedly lives were sacrificed by the unnecessay moving of patients. Consider for a moment the actual conditions: At Santiago the patients we received had to be brought in army ambulances over from four to six miles of rough, rocky road, and then were only at the docks whence they had to be moved first to boats and then to the ship. All this consumes energy — priceless to men as sick as they. Again, accidents may happen. Ambulances were said to have broken down and even overturned when bringing the sick to the dock, and that meant delay and more moving. In Porto Rico transportation over eighteen miles of wretched road was necessary. In this eighteen miles were six or seven fords, which in an hour's time might have become impassable rivers — streams in that country rise from four to six feet in an hour. The possibilities may be imagined. Under such circumstances, is it at all wonderful that we received many men in a state of complete exhaustion and some in a state of collapse? The greatest judgment must be exercised in selecting cases for hospital ships. It is questionable whether it is not much better for very sick men to remain at a fairly good hospital, even in a tropical country, than to be carted over six to eighteen miles of rough road in order to reach even excellent hospital ships.

On the other hand, a hospital ship should not be turned into a mere transport by filling her up with convalescents — men who are practically well. Errors of judgment will creep in, however, and if they must be made, let them be rather in the direction of taking convalescents than of taking men who are too sick. For in taking the former you do no injury to the men themselves, and you aid the regimental surgeon by taking just so many men off his sick call and giving him so much more time for his hospitals.

In one way the *Bay State* did not have the opportunity of showing her entire usefulness. Had she been near the scene of an engagement the ship could have been of great assistance in caring for the wounded. Even if they were too far away for immediate transportation to the ship, yet, with our facilities for making a temporary shore camp, with our large store of surgical supplies and apparatus, we could have rendered good service. We would have been at our best, perhaps, if an engagement had taken place in our immediate neighborhood, for the ship had a fully-equipped operating-room, in which were two operating-tables and all facilities for doing aseptic surgical work.

As we look back on the whole incident, the thing, perhaps, that gives us the greatest pleasure and satisfaction is the fact that we never have heard of a patient complaining of his treatment while on the *Bay State*. The men were usually courteous and invariably grateful for even the slightest attention. We cannot but feel that any effort we made or any time we gave has been fully repaid by their appreciation.

THE DUTIES AND WORK OF THE PURSER OF THE MASSACHUSETTS HOSPITAL SHIP "BAY STATE."[1]

BY MR. W. H. SEABURY, BOSTON,
Volunteer Purser.

You have paid me a great compliment in inviting me to appear before you this evening, to give you some idea of what my duties were as volunteer purser of the hospital ship *Bay State*.

I did such a small amount of work on the ship, in comparison to what others did, that I have found it rather difficult to make a paper containing anything of special interest. I said to Dr. Fitz that this would be an entirely new departure for me, but I felt that if I could say anything that would be of the slightest interest to you all I ought not to decline the polite invitation. He wishes me to tell you what I had to do, what I had to do with, and how I did it.

WHAT I HAD TO DO.

Make myself generally useful to our surgeon-superintendent, Dr. Burrell. Take charge of all the finances of the ship. Purchase all the supplies (those relating to the hospital department excepted). Pay all bills, wages of crew, etc. Receive requisitions for supplies of all kinds, from hospitals and troops, have them approved by the surgeon-superintendent, see that they were delivered and receipted for. To keep a general idea of what food supplies we had on hand, and say whether we could spare them from our stores or not. Receive the patients on shore in tents, or on the main deck of the ship. Give each one a number, take their names and temperatures, also their valuables. All this was recorded by me in a book at the time.

When a requisition for supplies was received (and nothing was delivered without a written requisition), it was divided into three different lists, one for medical supplies, one for clothing, and one for the food. These were handed to the heads of departments, and they saw that the articles were issued and turned over to me. I saw them delivered and receipted for.

WHAT I HAD TO DO WITH.

Everything in a commissary's department that I could think of or that others could suggest. I was not limited as to expenditure, nor hampered in the slightest degree. My instructions were, obtain what you think best, and have it all of the first quality. And what pleasure it was for me to labor under such instructions!

The food supplies were stored in six of the eleven large storerooms, or lockers, in the lower hold, the other five being used for a part of the hospital supplies. On the deck over these storerooms there was a large space enclosed with an iron grating, which I called the grocery shop. Our daily wants were supplied from this.

Our supplies consisted of in part, that is, for one trip, 10,000 pounds fresh beef, 500 pounds mutton, 600 pounds poultry, 2,000 eggs, 500 pounds fresh butter, fresh vegetables and fruits in variety, all kinds of canned goods, evaporated cream. Twenty-five to fifty loaves of bread were baked each day. Sixty gallons of ice cream (this kept in perfect condition, and the last was distributed to the patients the day before our arrival home). Our ice machine made three tons a day. Temperature of freezing-room about 28; cold storage, 34. Liquors of all kinds, mineral waters, ginger ale, pipes, tobacco and cigarettes. The supply of fresh beef was reduced somewhat on the second and third trips.

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[1] Read before the Boston Society for Medical Improvement, November 21, 1898.

HOW I DID IT.

System of Receiving Patients. — At Santiago we had three tents on shore (thanks to Maj. L. C. Carr, Volunteer Surgeon from Ohio, who was of the greatest assistance to us in providing the tents, and locating them for us). The patients came to us in ambulances from the hospital near San Juan Hill. (Some of these ambulances were upset or broke down on the way. The road was almost impassable, and as there were two tiers of stretchers in each ambulance, the patients were terribly shaken up.) They were brought into my tent first; here Drs. Manahan or Bottomley questioned them or their officers in regard to their previous condition. If a patient was very ill he was given an odd number, which signified a lower berth on the ship, that he might be more easily attended, otherwise he was given an even number, which called for an upper berth. These numbers were small nickel tags on a cord, which was passed over the patient's head and hung about his neck. This number corresponded to his berth number on the ship.

It was not customary in speaking of a patient to mention his name, he was known by his number. His temperature was taken by Miss Galt, his valuables taken and put in an envelope marked with his number. He was then given a canvas bag, the number of which corresponded to the number already given him. This bag contained a complete outfit, consisting of a brown duck suit, underclothes, slippers and soft hat. He was then taken with his bag into either one of the other tents, where he was stripped, given a sponge bath of corrosive sublimate by a bayman (there were two in each tent), his new outfit put on, his uniform put back into his bag (which was sterilized later on the ship), and he was sent aboard the ship in the launch.

It took us eight minutes on the average from the time a patient entered my tent until he was off for the ship. This system of receiving the patients, so simple yet so perfect, the rapidity with which it was accomplished, astonished the army officers who witnessed it, and they complimented us highly.

When the ship reached Boston the patients were returned their valuables and canvas bags, which they took with them when they left.

At Arecibo this work was done on the ship, as the patients were received late in the day, and it was thought best to get them on board as soon as possible.

At Ponce we took on nine patients only, and our work was carried on in one of the rooms of the Custom House.

And now, Mr. President, just a word or two about our surgeon-superintendent. He has said so many kind things of those under him that I cannot let this opportunity go by without expressing my opinion of our "General," as we called him. While giving due credit to all others connected with the ship for their noble work, I must say that it was to the wonderful executive ability of Dr. Herbert L. Burrell that the record made by the *Bay State* will serve as a standard for all relief expeditions of this kind. He went forth with the well-defined purpose of doing all the good possible as speedily and as directly as it could be accomplished. Zeal was supplemented with brains.

THE NURSING CARE ON A HOSPITAL SHIP.[1]

BY MISS C. W. CAYFORD, BOSTON.

THE problem of the amount and character of the nursing force on a hospital ship was unique. The factors entering into this problem for consideration were: the uncertainty of the length of time the patients would be on board ship; the question as to the character of the illness, whether surgical or medical, and the entirely unknown effect of sea-sickness. It was finally determined by the committee in charge of the selection of nurses, for a maximum capacity of 114 patients to have six nurses (women) and six baymen (male nurses). Before leaving Santiago harbor, and before the element of sea-sickness had made itself felt, it was evident that the working force was far too small, owing to the fact that through some misunderstanding no provision was made for the scullery work of the wards, and this had to be done by the nurses. Naturally this diminished the strength of the nursing force. Later this work was done by mess attendants, who were engaged for service alone in the wards. So that on our last voyage, with 135 patients, the day force consisted of two nurses, two baymen and two mess attendants for each ward. The entire night work of both wards was done by one nurse and two baymen. This seems a small proportion of night nurses for medical work, but it was found to be sufficient, as on all three trips the wards were noticeably quiet at night, the patients sleeping remarkably well. The difficulty, or, more accurately speaking, the impossibility of properly caring for bed-patients in an upper berth was met by assigning these berths to convalescent patients. Even in the lower berths the bathing of patients and changing of linen was considered with misgiving by those of us trained to consider certain details of bed-making and in the handling of bed-patients as essential to good nursing. This was due to the limited space between the tiers of berths and the necessity of working, in most cases, entirely on one side, and the box-like effect given to the bed by the rolling rod when corded to the bed frames.

However, it became evident early on the first voyage that what was needed was the essential life-saving care of the patients. To the men taken from the field hospital of Santiago it mattered little that the under sheet was at times somewhat wrinkled. What they needed most were baths, good food, good water, and plenty of them. These we were able to give them. In fact, it is a question whether in some instances they did not have more than a sufficient quantity of food, owing to the necessity in the convalescent cases of depending largely upon the patient for a report as to his condition, — and naturally after a long period of limited rations he was not eager to furnish information that would be likely to cut down his food supply, — and occasionally, I fear, to the pleasure of seeing those hungry men eat at times overruling the better judgment of the nurse. The bathing could be carried out without discomfort to the patient, but was more or less of a strain on the back of the nurse, and was an especially trying thing to do when the nurse was seasick.

The ward clothing of the patients when not worn proved a great source of annoyance; when not on the bed — which was most of the time — they were on the floor, making the wards very disorderly and causing much loss of time and patience on the part of the nurses. Later this was very satisfactorily overcome by having clothes bags hung at the foot of the bed. The idea of the bag was suggested by the individual toilet cases, containing brush, comb, tooth-brush and wash-cloth, attached to each berth, which were so much appreciated by both patients and nurses.

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[1] Read before the Boston Society for Medical Improvement, November 21, 1898.

Considering the size of the galley, the service of the food was remarkably satisfactory. It would, however, have been a decided advantage could some place have been provided where the nurses might have prepared toast, gruels, eggs, etc., especially for the feeding in the typhoid-fever cases.

Very little laundry work was done while the patients were on board, owing to the limited supply of fresh water, and to the fact that the laundry opened directly into the after ward. Naturally the steam and heat were very objectionable. Fortunately the supply of ward linen was more than sufficient for an entire trip; otherwise we should have been put to serious inconvenience.

I would like to say a word in regard to the nurses' uniforms. Pongee silk may have its uses, but a working uniform on shipboard is not one of them. If seasickness is due in part to a mental condition, no wonder so many of us were so ill on the first trip. A more forlorn, ridiculous, grotesque — and to ourselves melancholy — uniform could not have been devised. The most practical thing for a nurse's uniform on board a hospital ship is a short skirt of fairly heavy material (like duck or denim), shirt waist with celluloid collar, and gingham aprons. The whole should be of some neutral color — blue, brown or green, as very light or white clothing is unpractical on ship-board.

In the matter of ventilation the ship had a decided advantage over most hospitals. With the exception of watching the ports in case of storm or heavy sea, no thought or time was required in its regulation. The air was always fairly pure, except when the weather obliged the wind-sails to be discontinued and the hatches to be covered, and the heat in the wards was always at a minimum.

Throughout the entire trip the almost childish delight of the men in the enjoyment of the comforts and luxuries of the ship was quite touching. The expense of having a ship's library was amply justified on this trip. The books were eagerly sought, even by men too ill to read. It was really affecting the way in which patients would tuck away the books for fear they would be taken away. They seemed to cling to them as a connecting link to civilization. The extraordinary part of this mental process was that often the most illiterate were most desirous of having a book.

I think some of the conclusions to be fairly drawn from our experience in the nursing department of the ship are:

(1) That seriously ill patients cannot be nursed as efficiently as on land.

(2) That the mental influence of a voyage home, the ease of providing the absolute necessities, make a hospital ship of great value.

(3) That, contrary to expectation, sea-sickness did not apparently interfere with the improvement of patients even when fairly ill.

Suspension of La Revue des Sciences Medicales. — It is announced that this well-known review is about to suspend publication.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

Regular meeting Monday, November 21, 1898, Dr. R. H. Fitz in the chair.

THE MEDICAL WORK OF THE MASSACHUSETTS VOLUNTEER AID ASSOCIATION.

The President: The object of the meeting tonight, and also of the next meeting of the Improvement Society, is to listen to the gentlemen who were concerned with the medical work of the Massachusetts Volunteer Aid Association. Early in the summer, as Dr. Burrell was about to depart on the *Bay State*, I told him the Society would be much interested to hear from him and his associates of the work accomplished, and he was good enough to bear this request in mind. Through *his* aid and that of Dr. Bradford, the details of these meetings have been arranged. At this meeting it has been considered best to limit the communications to the period of the departure of the *Bay State* from Boston. At the next meeting the gentlemen distributing aid at Santiago, Porto Rico and elsewhere will give their experience. I will ask Dr. Burrell to open the meeting with a statement of the manner in which the Volunteer Aid Association began its work.

Dr. H. L. Burrell read a paper entitled

THE HOSPITAL SHIP "BAY STATE."[1]

Mr. J. T. Boyd read a paper describing the

CONSTRUCTION OF THE MASSACHUSETTS HOSPITAL SHIP "BAY STATE."[2]

Dr. E. H. Bradford read a paper entitled

MEDICAL EQUIPMENT.[3]

Dr. H. L. Burrell read a second paper, which was entitled

THE METHOD AND CHARACTER OF WORK DONE BY THE MASSACHUSETTS HOSPITAL SHIP "BAY STATE."[4]

Dr. J. T. Bottomley read a paper entitled

THE MEDICAL AND SURGICAL HISTORY OF THE HOSPITAL SHIP "BAY STATE."[5]

Mr. W. H. Seabury read a paper entitled

THE DUTIES AND WORK OF THE PURSER OF THE MASSACHUSETTS HOSPITAL SHIP "BAY STATE."[6]

Miss C. W. Cayford gave the closing address, entitled

THE NURSING CARE ON A HOSPITAL SHIP.[7]

Dr. G. H. Monks showed upon the screen some stereopticon pictures from instantaneous photographs taken of the *Bay State* on August 6th, as she was leaving the wharf of the Atlantic Works, East Boston, and proceeding down the harbor, bound on her first trip (as a hospital ship) to the West Indies.

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[1] See page 53 of the Journal.
[2] See page 57 of the Journal.
[3] See page 60 of the Journal.
[4] See page 62 of the Journal.
[5] See page 66 of the Journal.
[6] See page 70 of the Journal.
[7] See page 71 of the Journal.

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Medical and Surgical Journal.

THURSDAY, JANUARY 19, 1899.

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MEDICAL JOURNALISM.

We desire to say a word, in this period of change and ferment, for general medicine, for the general practitioner, for the general medical journal. The fact that a thing or a method is old should not condemn it, neither should the fact that it is new necessarily recommend it. But to-day the novelty gets the readier hearing before the court of public opinion. We have no fear for specialism or the specialist. They have reached and will reach quite far and fast enough. *Divide et impera* is the watchword of the time — except in the matter of commercial trusts. But in medicine, even with the railway, the electric tramway, the telegraph and the telephone, there must still be, until our population in this country is gathered into cities and towns, a large class of general medical practitioners. That class will doubtless have to acquire a broader and longer early training upon which subsequent experience shall rest. If this is true, it is quite as untrue that the specialist's early training can be allowed to become narrower and briefer. No one man can to-day embrace all medical knowledge, and he who tries it will make a sad mess of the result. On the other hand, what will be the condition of our noble science and our noble art when every organ and every tissue has its devotee in the laboratory and dissecting-room, its specialist in practice among mankind, and its special weekly, or monthly, or quarterly periodical exponent? That family, or that individual is, we believe, more safely guided to-day if directed by the general practitioner when and where to seek special advice, than are those who are sent from one specialist to another, or than those who roam through the consulting-rooms at will, placing this organ in the care of one doctor and that in the care of another, until the whole organism is distributed through the medical fraternity.

Whether one looks at this general question a little more from one side or a little more from another, there must surely be collaboration. The end and aim of all science, however abstract, must or should be the benefit of mankind, the amelioration of human life — not the satisfaction of the student. Physiology or chemistry advances, enlarges its scope, changes its nomenclature, but man remains, human nature is always to be dealt with. The specialist may spin his theories, may weigh and measure and experiment, but it must all be brought to the crucial test of general application.

Workers along special lines must bring themselves in touch with workers along other special lines, and these with the general practitioner and he with them. For a good while to come the general medical journal must and will, in our opinion, continue to be the general clearing-house of medical thought and practice. The first thoughts, the first essays, may flow through other and special channels, with narrower and more limited dependencies, but the general summing up and balancing of the various special accounts will be in the general journal, and with it the special depositor in the various banks of knowledge will find it worth while sooner or later to stand well.

"*Alle Theorie ist grau*," until quickened and illuminated by application to practice, whereby it lives, and, let us hope, makes live.

It would be, again, we think, an error to regard the special journal as necessarily an eleemosynary and the general journal as necessarily a mercenary undertaking. To prolong life they must certainly both make a living — a plain one if you like — and to do this they must be conducted in some measure on business principles.

As for the reader, that practitioner is apt to be better nourished mentally who takes and *reads* one good journal than he who belongs to a journal club and skims through a dozen, not to say the two or five dozen, which an ultimate division of the molecules of medical thought may call for. G. B. S.

MEDICAL JOURNALISM.

The foremost object of the medical press is the dissemination of the advances in medical knowledge throughout the community of medicine. This community is made up of various elements. There is the general practitioner, the special practitioner, the institutional worker, the scientist and laboratory worker pure and simple, and the instructor in medicine.

To best satisfy the needs of all these elements the system of a division of labor has been generally adopted by the medical press. This division, which has given us two classes of journal, the special and the general, has been accomplished, in our opinion, to the advantage of all concerned.

The advantages to the specialist of this system of specialization in journalism have been clearly stated in these columns. The development of the system, and the strictness with which it is carried out rests, of course, mainly with the contributor. And the advantages which come to him, in securing in the special journal a more elaborate publication and a more world-wide circulation of his work, are so great as to ensure his unqualified support.

To the general practitioner the system has no disadvantages. He is apt to be too busy or too deficient in special learning to benefit by a careful perusal of detailed articles upon special subjects. It is more profitable for him to get the summaries of these articles and the outline of their application to general work in the abstracts which appear in the Reports of Progress, or whatever takes their place, in his general medical journal. If neither his work nor the limitations of his learning interfere, he can always read the articles in the special journals.

The effect of this specialization upon the general journal is, it seems to us, one in no way injurious to its usefulness. The specialist being provided for, the general journal can devote itself the more fully to its most important use.

This use is the dissemination of the widest possible knowledge of general medicine. The medical community is made up in considerable part of men who depend almost entirely upon the general journal for their knowledge of the recent work along all lines of medicine. This Journal's methods of supplying this varied knowledge are several. The most important are its Reports of Progress in the various special branches of medicine, its editorials, its original articles, and its Reports of Societies.

As chief of these in the accomplishment of the first usefulness of the journal we regard the Reports of Progress. The importance of these Reports is not sufficiently valued by many of the journals, or by the contributors of the Reports. They should, to our mind, be published as frequently as possible and be prepared with the greatest care and thoroughness. In the furtherance of the same object, editorials summarizing and criticising work upon certain lines of medicine are to be desired.

A second aim of the medical press is the instruction of the medical public in questions of medical ethics, and the discussion of the broad questions of medical interest, as sanitary administration, methods of medical education, hospital methods, etc.

Among these there are two subjects, which do not, it seems to us, receive in many of our American communities the attention which they deserve and need. We refer particularly to the questions of methods of administration and of instruction of the leading institutions of medical education, and of the administration and methods of procedure of the hospitals, in our communities.

To our mind these are questions which permit and even require a more free discussion in the journals for the good of all concerned. H. F. H.

A New York Hospital Changes its Name. — It is officially announced that the New York Cancer Hospital will hereafter be known as the General Memorial Hospital.

COLONEL WARING ON THE SANITATION OF HAVANA.

On October 8, 1898, Col. Geo. E. Waring sailed for Havana to examine the sanitary conditions of that city. He spent there a single week collecting the necessary data, and returned to New York. The facts of his sickness and death from yellow fever after his arrival in New York are well known to the readers of this Journal. An examination of his papers after his death showed that he had written the portion of his report which described existing conditions and that he had sketched roughly the most important of his recommendations. Mr. G. Everett Hill, who was Colonel Waring's secretary and assistant, has completed the report, with the help of detached memoranda left by his chief. The substance of this report has been published in the *Forum* for January, 1899, and in various newspapers. It is of the greatest interest at the present time, both because Cuba is now under the control of the United States Government, and because in the near future our commercial relations with that island are destined to be closer than ever before; hence the influx of our people to the principal seaport towns of the island and of Cubans to our shores is likely to be very greatly augmented. "We have" (to quote the words of an esteemed contemporary) "assumed the responsibility for one of the worst pestholes in the world in taking Havana under our control."

The unsanitary condition of Cuba has long been a menace to every neighboring people. It has been the nursery of yellow fever; 90 per cent. of the epidemics can be traced directly or indirectly to Cuba. Gradually the disease has been pushed back by the cleaning of our ports and by our quarantine system, but it is still a menace, and constant and costly vigilance is yet necessary. The controlling factor in the problem of the sanitary regeneration of Cuba is Havana: (1) because that city is the worst seat of infection; (2) because it is a centre of distribution; and (3) by reason of its importance and influence.

Colonel Waring points out the character of yellow fever (it is *par excellence* a filth disease) and the best means of combating it at its source; he then tells the story of the filth of Havana — its privy vaults under every house, its foul streets, its saturated soil, its pestilence-distributing markets, and he answers the question, "Can Havana be purified?" — that it most positively can, as it is no dirtier than many another city has been.

We have room for only the following extracts. He urges that the following improvements are absolutely necessary for the sanitary redemption of Havana:

(1) The immediate organization of a department of public cleaning, "under the full control of a single commissioner experienced in the conduct of such work," who should have authority to act as occasion may require.

The chief function of the department would be the maintenance of a "constant state of cleanliness" in all streets and places of public business or resort, including the abattoirs and markets. "It should also control the disposal of all wastes, except sewage — by cremation and otherwise."

(2) The construction of a system of sewers "to receive the liquid wastes of all houses of the main city." The topography of the city divides it naturally into several districts. Each of these should be served by a distinct sewage system, which should discharge directly into the harbor or the Gulf, as the case may be. "Before such discharge, the effluent should be effectively clarified by one of the various well-known methods; so that it would carry only its dissolved impurities." The dilution would be immediate and more than sufficient; for the daily movement of sea-water into and out of the harbor is about six thousand times as great as would be the day's discharge of clarified sewage from the harbor slope of the city.

(3) The clearing out and filling with clean earth of all the cesspools and garbage-vaults, and the supplying to each house of a suitable water-closet, connected with the public-sewer system. The closets furnished should be practically automatic in operation and not liable to damage from ignorance or carelessness.

(4) The paving, or repaving, of all the streets with the best quality of asphaltum. Some form of artificial paving of the streets of cities is indispensable.

Laying aside all considerations of comfort and economy, which in themselves are sufficient to warrant its construction, asphaltum is the best paving material from a hygienic standpoint.

(5) The erection of a new abattoir, adequate to all the needs of the population, and furnished with modern appliances for the inoffensive utilization of the entire animal, so that no refuse remains to be got rid of.

(6) The construction of "a suitable and sufficient incinerating furnace, for the complete and inoffensive destruction of garbage and other refuse," including dead animals, street sweepings, mattresses, discarded clothing, rags, excelsior, paper and similar substances, which might serve as vehicles of contagion.

(7) The reclamation and drainage of all the marshes, or at least of those bordering the harbor on the south and west. "This reclamation to be made after the 'Polder' method of Holland — by diking out the harbor and water-courses and moving the water by pumping."

(8) The establishment of a "power-plant sufficient for this pumping, for pumping sewage where necessary, and for propelling the machinery of the abattoir."

This ends Colonel Waring's specific recommendations. Other fragmentary memoranda indicate that he intended to deal with the following subjects:

Supplemental to the department of public cleaning, there should be a board of sanitary control, vested with full authority to formulate sanitary regulations and to enforce them.

This board of sanitary control should do all that a well-organized and wide-awake board of health in our own country is supposed to do — and more too. It must be zealous, untiring, and aggressive; for in Havana it must meet and overcome not a few stragglers from the army of disease, but a powerful foe strongly intrenched on his own ground.

A campaign of popular sanitary education must be inaugurated. The people of Havana have been living over and in the midst of filth for so long, and their unsanitary habits have become so firmly fixed, that no sudden repentance and conversion to a clean heart and a right spirit need be expected.

Practical hygiene should be taught in the schools; and the children should be organized as volunteer aids of the department of public cleaning, as was done so successfully in New York. Cleanliness is contagious. Clean streets mean cleaner houses and cleaner people. Dr. Lyon Playfair, when making sanitary inspections in an unfamiliar town, used to visit the schools, pick out the sickliest children, and trace them to their homes. They proved sure guides to the filthiest quarters in the community.

Of less pressing need, but still an important factor in the improvement of the city's condition, is a revision of the custom — practically universal — of laying the first floors of the houses close to the ground, without adequate means for ventilating the space between.

To dredge the harbor now would be dangerous work, for it would stir up and expose to the air vast quantities of putrid filth. Later, if Colonel Waring's recommendations should be carried out, it would mean only the removal of innocuous mud. Navigation is not yet impeded by the deposits; and the rate at which the harbor is silting up — one-third of one per cent. per year — makes it evident that a delay of even ten years would not be injurious to commerce. Long before this time has elapsed the harbor should be clean.

Havana can be freed from her curse. The price of her freedom is put at about $10,000,000. Can the United States afford to redeem her? For once humanity, patriotism, and self-interest should be unanimous, and their answer should be, Yes! Fortunately the whole situation is now in the hands of so good an engineer as General Ludlow, who is likely to see that the best methods are employed and that the best results are secured at the least cost.

MEDICAL NOTES.

Reorganization. — Reorganization, Gentlemen of all Departments of the War Department! Reorganization!

A Bequest to the Pennsylvania Hospital. — By the will of L. Taylor Dickson, of Philadelphia, who died recently in Georgetown, N. C., his estate of $100,000 is to revert in time to the Pennsylvania Hospital.

Professor Röntgen to Remain at Würzburg. — It is announced that Professor Röntgen has refused to accept the call to the University of Leipzig. Professor Röntgen will retain his present position, that of Professor of Physical Sciences at the University of Würzburg.

Seattle (Washington) Anti-Expectoration Ordinance. — The City Council has passed an ordinance prohibiting expectoration on the sidewalks, floors of public buildings and in street-cars. Offenders are subject to a fine of $5, or two days' confinement in the city jail. — *Philadelphia Medical Journal.*

Patent but Neglected Emergencies. — In the early part of the war with Spain a suggestion was made to the War Department that an expert be detailed to pass upon the supplies furnished the army. The commissary-general sent a reply saying that "This department is not permitted by law to employ purchasing agents, and all purchases are made by commissioned officers." Apparently no effort was made to induce Congress to inaugurate any other system, although the fact of the emergency must have been patent enough at that time. — *Exchange.*

"The Gullibility of the Public."—The *Practitioner*, in an interesting account of Sir William Jenner, in which his professional honesty and even bluntness is commented upon, gives the following excellent anecdote of another distinguished physician who had certain qualities which Jenner lacked. The story is taken from the *St. Bartholomew's Hospital Journal:* "Dining one evening in the company of some medical men, among whom was Dr. Martin, then physician to 'Bart's,' Sir William Gull declared that some amount of quackery was essential to success in medicine. 'It is an example of the old saying,' he averred, '*Populus vult decipi.*' The host asked for a terse English equivalent. 'Oh, that's easy enough,' said Dr. Martin quickly; 'The public like to be *gulled!*'"

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, January 18, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 48, scarlet fever 14, measles 151, typhoid fever 2.

Bequest to a Hospital. — By the will of Mary A. Barnard, of Amesbury, recently probated in Salem, the Anna Jacques Hospital of Newburyport, Mass., will receive a bequest of $4,000.

Oldest Living Yale Medical Graduate.— Dr. Chauncey Ayres, of Stamford, Conn., aged eighty years, and said to be the oldest living graduate of the Medical School of Yale University, was recently injured during a fire which damaged his residence. It is believed that his injuries are not fatal.

Gen. Leonard Wood, M.D. — Gen. Leonard Wood was in Boston for a day this week and dined with his Harvard Medical School contemporaries of the "Cardiac Club" at the University Club, Monday evening. He cannot vote for Harvard Overseers, but he is a pretty good type of the good citizen and useful graduate.

The Quincy City Hospital. — At the annual meeting of the Quincy City Hospital Corporation, held January 14th, the report of the trustees showed that in the past year 215 patients had been admitted, of which number 182 had been discharged, 23 had died and 10 now remain. The somewhat large percentage of deaths was due to the fact that 14 of the 23 were incurable when admitted.

NEW YORK.

The Abuse of Medical Charities. — The bill introduced into the Legislature last year having for its object the abatement of the abuse of medical charity, and which provided that all the dispensaries should be placed under the direct supervision of the State Board of Charities, met with vigorous opposition from the dispensary authorities, and failed of passage. Since then efforts have been made to frame an act which would be acceptable to the boards of managers of the dispensaries, and some time since a committee of three (of which Dr. D. B. St. John Roosa was one) was appointed by the latter to draw up such an act. The bill agreed upon provides for a Board of Control for the supervision and regulation of dispensaries, to consist of twelve members appointed by the State Board of Charities. The Medical Society of the State of New York, the State Homeopathic Medical Society and the State Eclectic Medical Society are each to be represented by two members, and the other six members are to be taken from non-medical directors of the dispensaries. At a meeting of representatives of all the dispensaries, held January 10th, the new bill was formally approved of, but it is not likely to be as satisfactory to the regular medical profession as the bill of last year.

Opening of the Red Cross Hospital. — The formal opening of the new hospital of the American Red Cross Association took place on Saturday afternoon, January 14th, when there were a public reception and addresses by Miss Clara Barton, of Washington, and others. It is situated in West 93d Street, near the Riverside Drive, and well adapted for the purpose designed, but it will be occupied only during the present year, as the Association expects to have a commodious hospital building of its own in 1900.

Death at the Age of One Hundred and One. — Mrs. D. M. Faulkner died at her home in Brooklyn, on January 10th, in the one hundred and first year of her age. She was born in Greenport, and had passed all her life on Long Island.

Death of Dr. Philip J. Maguire. — Dr. Philip J. Maguire died at his residence in New York, on January 9th, of renal disease, at the age of fifty-four. He was born in New York City, and was graduated from the College of Physicians and Surgeons.

Death of Dr. John Worth. — Dr. John Worth, a well-known Brooklyn physician, died on January 7th. He was born in New York City, in 1845, and was a graduate of Columbia College and of the College of Physicians and Surgeons.

State Hospitals for Pulmonary Tuberculosis. — The report of the special committee of the State Senate in reference to pulmonary tuberculosis was presented on January 11th. It was written by Dr. Brush, of Brooklyn, and, accepting the necessity of regarding consumption as a contagious disease, recommends that the State establish one or more hospitals for consumptives in the forest preserves in the Adirondack Mountains, the sites selected for which must be approved by the Forest Preserve Board. The report is accompanied by a bill, providing for the appropriation of $200,000, the creation of a commission to select locations, and the appointment of physicians, two in number, in each of the cities of New

York, Buffalo and Syracuse, to examine patients and issue certificates authorizing their admission to the hospitals. A reasonable rate is to be charged for all patients able to pay.

Death of Dr. C. C. P. Clark. — Dr. C. C. P. Clark, one of the most prominent physicians of Oswego, N. Y., and a man of wide learning, died, January 11th, in his seventy-seventh year. He was born in Middlebury, Vt., and was graduated from Middlebury College in 1843, and from the College of Physicians and Surgeons, New York, in 1847.

Miscellany.

THE RETIREMENT OF MR. TREVES AND MR. GOODHART.

The *Practitioner* comments as follows on the resignation from hospital staffs of these distinguished surgeons. "The fact that two of the foremost men in the medical world have recently found it necessary, in the very prime of professional life, to shake the yoke of a hospital appointment off their necks is full of significance — for those who have eyes to see. Guy's Hospital has lost Dr. Goodhart, and the London has lost Mr. Treves, just at the time when their services were most valuable — and why? To speak plainly, because they were overburdened with routine work in which their special skill was thrown away, to the detriment of all concerned. . . . A medical teacher of the first rank should not have to waste his scientific sweetness on cases of bronchitis, anemia, or generally on the common run of human infirmities; nor should a surgical artist of the highest order be hampered by the care of broken limbs or ulcerated legs. The War Office is not an ensample of administrative perfection, yet it would not set the Sirdar to supervise the sewage farm at Aldershot, important and honorable as that duty is in its way; nor would it, I imagine, invite Lord Roberts to take charge of the riding-school. These illustrations point a moral which hospital authorities would do well to take to heart."

CHRISTIAN SCIENCE AND LAW.

The following remarks by Dr. Frank S. Billings appeared in the *New York Times* on January 6th:

"It seems the Court of Common Pleas in Ohio decides that the Christian Science healer has not the responsibility in regard to the treatment of the sick that the law imposes on all other practitioners of medicine, regular and irregular. The learned judge of this court in Cincinnati 'holds that the rites she (the Christian Science healer) performed were religious and not medical, and therefore not within the State medical law, under which she was prosecuted.' It is unfortunate that one cannot tell whether the legal objections were simply a technical evasion of the law so disgracefully common in this country, or that the law did not cover the case in point. From the general character of the case in question and the remarks of the judge, there seems no doubt that the Christian Scientist would have been guilty of malpractice leading to death — in plain English, professional murder — had she been either an ordinary charlatan or a regular medical practitioner. She escaped because 'the court holds that the rites (practice) she performed were religious and not medical.' This decision is based on the law guaranteeing the free right to religious opinions, but the learned judge seems to be entirely unaware that that law has reference to opinions, to theories, as to the existence of God alone, and in reality has no reference to rites or actions, which is an entirely different question. Under our laws a Hindu could come to this country and freely utter the principles of his religion and perform many of its rites, but would our law protecting 'freedom of religion' permit the widow of such a Hindu to ascend the funeral pyre of her husband and sacrifice herself through one of the holiest rites and moral obligations of her religion? Suppose the Christian Scientists, or some other new sect, should claim to be 'Abrahamites' and that child sacrifice was their holiest rite (it is quite possible; nothing in this line seems too absurd to flourish in this country of free and glorious license to ignorance), and put it in practice, would that not be a religious rite according to the learned judge of Cincinnati? Such absurdities as that are exactly similar to the rites of the Christian Scientists. They come under criminal, and not civil, law.

"Here is one of several cases that have come to my knowledge: Mrs. —— was the pretty young wife of a clerk. Her mother was a maniacal Christian Scientist. When it came time for Mrs. —— to be confined the husband was told he might go to his business, and the mother (mother-in-law) took the case in hand, aided by a Christian Scientist healer. The poor girl began to suffer, and the women put a Bible on her abdomen and told her that her pains were all imagination, that the Lord never gave people pain, and so on, *ad nauseam*. The agonies of that poor child must have been terrific, for neighbors heard her screaming and begging for a physician, but these Christian fiends never let up. Finally the pain stopped; no further screaming was heard. The reason was that the child had ruptured the womb and was in the abdominal cavity of the mother. Then there was rushing in mad haste. The husband was sent for, the physician was sent for; but too late: the woman died of hemorrhage and the child choked to death. Two murders! But were these women prosecuted? Not a bit of it! Public sentiment was entirely on their side, and no official dared to issue a warrant. 'It was God's will to take his dear ones that way,' said the minister (not a Christian Scientist) at the funeral."

THERAPEUTIC NOTES.

Chloroform in the Treatment of Tuberculosis. — M. Desprez[1] in a paper read before the Congrès de la Tuberculose, 1898, strongly recommends the employment of chloroform as an adjuvant to the treatment of tuberculosis, basing his claim on the well-known anti-bacillary properties of this drug. He calls attention to the harmlessness of chloroform in small doses, to its very rapid elimination and its strongly prophylactic effects; he believes greatly in washing various tubercular and generally purulent foci with chloroform water. He is perfectly convinced, from his own experience, of the great potency of this drug as an aid in the treatment of tuberculosis, and recommends that it be given a fair and thorough trial.

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[1] Bullétin Général de Therapeutique, September 23, 1898.

At the same Congress P. Gallot delivered an address on the employment of subcutaneous injections of iodoform in tuberculosis. In one case, that of a woman, twenty-one years old, who was suffering from incipient tuberculosis, he obtained excellent results from a daily subcutaneous injection of the following:

℞	Oil of neutral vaseline	gr. v.
	Eucalyptol	ʒ i
	Iodoform	gr. xv

The author claims a similarity between iodoform, when taken internally, and digitalis, for it tends to diminish the cardiac pulsations while increasing arterial tension; having, however, that advantage that it never tends to accumulation in the system; his conclusions were also strengthened by experimentation on animals.

THE DANGERS OF FLY BLISTERS. — M. Mathieu[2] reports the history of a young man, who began to complain of severe cephalalgia accompanied by profound lassitude; there supervened persistent nausea and finally vomiting. Six vesicatories were placed over the boy's epigastrium; by the end of this treatment the urine was found to contain 25 centigrammes of albumin per litre; later on this amount was increased to five grammes. Mathieu diagnosed uremia from renal lesions caused by cantharides poisoning; the patient died during an attack of coma. Insidious Bright's, manifested only through indefinite gastric symptoms, is to be met with not infrequently, and a condition of constant nausea demands attention in suspicious cases. As far as treatment of such cases is concerned, we must suppress the alimentary intoxication, secure intestinal antisepsis, purge the digestive tract, order a suitable diet — all these measures becoming imperative to prevent the occurrence of serious outbreaks.

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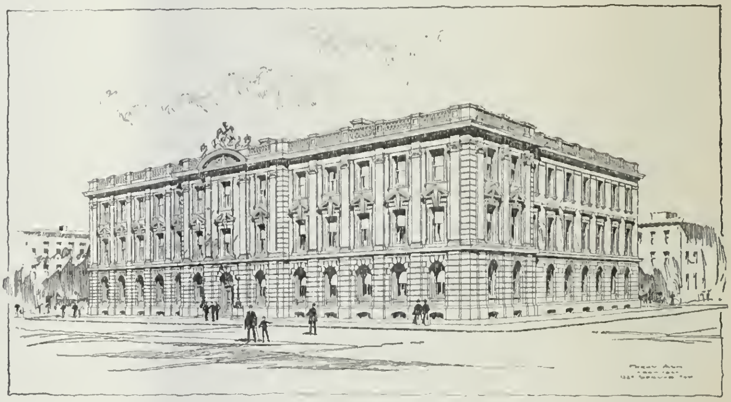
Correspondence.

NEW MEDICAL LABORATORIES AT THE UNIVERSITY OF PENNSYLVANIA.

PHILADELPHIA, January 12, 1899.

MR. EDITOR: — There has been a great deal of agitation in the past about higher medical education, and the theme may seem to have been worn threadbare. With the establishment of the compulsory four years' course of study the ends of the agitators were for a time achieved, and the higher medical education sought after in the past was attained. More years and longer terms of study, with increased practical instruction, completed and rounded out the medical curriculum. To attain this end an additional year of study was urgently necessary, and new clinical facilities had to be established; in short, provision was required to give the student more ample practical experience than had been possible before.

But the world moves swiftly, and another higher medical education has made its appearance. It is true that with the present provisions the University of Pennsylvania offers a course of study complete in its details, covering the required branches, and covering them far better than ever before, but the foundation of the structure is too narrow, the building is too high for the breadth of base, and the equilibrium is uncertain. The needs of the present time are more thorough training of the student in the fundamental branches, a greater devotion to laboratory work, and a weeding out of much of the old-fashioned didactic teaching. The handwriting is plainly written on the wall: the laboratory in the future shall be the medium of education, and institutions shall be judged by their laboratory equipment. There was a time, unfortunately not so many years ago, when medical schools in this country graduated doctors of medicine whose whole teaching had been theoretical, on account of the lack of hospital facilities. In those days the stamp by which a medical school could best be measured was the kind and amount of hospital facilities it offered the student. While the importance of hospital training and bedside instruction is as great as ever, a change of ground has taken place, and laboratory training has become more and more necessary. It is no longer the crucial question whether a certain school offers its students practical instruction, as well as didactic lectures; the decisive test is, rather, whether laboratory training is commensurate with the other forms of teaching. It is impossible to teach chemistry in didactic lectures, or even by class demonstrations. This has long been recognized. It is equally impossible to teach anatomy, pathology, histology, or physiology by didactic lectures, or demonstrations, to large classes of students. Individual work is as absolutely essential in these branches at the present time as it has been in the case of chemistry for many years. The scientific physician of to-day recognizes the all-importance of laboratory study of his case, and will naturally send his students to that institution which offers the most thorough preparation in these branches.



It must not be thought that the University has been entirely remiss. The growing necessity of this form of instruction has been recognized and temporary provision has been made. The physiological laboratory has for several years been conducted upon the principle that each student should receive individual instruction in practical work, using instruments of precision at least sufficiently to attain some command of this sort of work. In histology, in pathology, and in experimental therapeutics the laboratory facilities have been sufficient up to recent years, while in bacteriology the ample equipment of the department of hygiene has been called in requisition. The continued growth of the classes, however, and the increasing importance of laboratory instruction, make a departure absolutely imperative, and a new laboratory building will have to be provided in the very near future.

The alumni will recognize this need, and will undoubtedly endorse its immediate consideration with unanimous vote. The provost, with characteristic energy, has undertaken the task of securing the means necessary to build and equip new laboratories, and, naturally, as in the case of the Law School, turns at once to the alumni of the department. Every alumnus of the Medical School should be reached, and every loyal alumnus will undoubtedly give some amount to this fund. The cost of the building and equipment will be very great; no less than $300,000 will be required for the building and preliminary equipments; and it is urgently hoped that a large part of this fund will be secured by contributions from the alumni. Already the provost has assurances of liberal contributions from alumni in Philadelphia, and from others, living in remote sections of the country, whose interest in the Alma Mater has not been diminished by their distance from Philadelphia; and, wherever an alumnus may be, the mere mention of this project should be received by him as an urgent appeal.

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[2] L'Echo Médical du Nord, November 20, 1898.

The University of Pennsylvania has ever been the first (*sic*) in suggestion, in preparation, and in execution, looking to the elevation of the tone of medical education in this country; and it is confidently hoped that this latest departure will receive the warmest support from those who in the past have derived so much from the advanced standing of the institution in their student days.

The accompanying picture will illustrate far better than words the character and scope of the proposed undertaking. The building has three floors, devoted to physiology, pharmacology and pathology respectively. The main part of the laboratory building is 192 feet in length, and there are wings running back at each end 128 feet. Large student-laboratories are placed in the wings, while the front of the main building is divided into a number of special research-rooms, offices, and workrooms of various sorts. To the rear of the centre of the main building there is on each floor a special demonstration-room, a lecture-room arranged in the form of an amphitheatre. The animal house is a special building two stories high, and situated at the open side of the hollow square formed by the main building and the two wings. * * *

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REPRINTS.

Mr. Editor: — Your editorial on Reprints is unnecessarily sarcastic. All the results of sending out reprints mentioned therein I have experienced and more too.

Perhaps the most amusing was that of an elderly physician who advised me to read one of my own reprints, telling me that it was an excellent article and I would find it useful and instructive! When I told him that I was the author of it he would hardly believe me. It would be turning the tables on an editor to say that the articles he has accepted are not worth having reprints of. Would our own Journal escape this implication?

Several pages of one of my own articles were used as an editorial in a first-class monthly without change of words or the use of quotation marks. I at once wrote to the editor complimenting him on his facility of writing editorials and enclosing a reprint of a much better article which had not been noticed at all on this side of the Atlantic, telling him that I should be glad to help him make another editorial. He "*squirmed.*"

It is right and proper that reprints of articles published in distant medical journals should be sent to physicians in one's immediate neighborhood, if the author wishes to do so. But I do not see any special need of sending reprints of articles published in a medical journal at home that goes to the very men to whom the reprints are sent. The only possible reason for so doing may be that a weekly journal seldom gets read before it is covered up by another, and articles intended to be read get overlooked. The whole profession would be better off if we had fewer weeklies and more monthlies, for then we would get time to read an article before it would be buried alive.

Very truly yours, Douglas Graham, M.D.

Boston, January 13, 1899.

Mr. Editor: The appended card is addressed to the writer of the editorial on Reprints in the last number of the Medical and Surgical Journal.

DR. P. D. Q.
RETURNS HIS CURSES FOR
THE REPRINTS ON
VARIOUS SUBJECTS
KINDLY SENT BY YOU,
AND APOLOGIZES FOR ACKNOWLEDGING THEM AT ALL.

Boston, January 14, 1899.

Mr. Editor: — The great Jove has hurled his thunderbolt from the editorial chair, and a blasted and blackened being crawls forth from beneath the wreck and ruin of his reprint world, to pursue his destined way and to ask when those Reprints will be ready. You may not realize that one of those forms of thanks of which you speak so ungraciously was invented by me.

Respectfully yours,
X-Ray.

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SKUNK OIL FOR SALE.

Boston, January 15, 1899.

Mr. Editor: — The enclosed letter seems good enough to publish, and may help to fill somebody's long-felt want. About everything on Cape Cod has been offered me for sale, from islands to fox-hounds. Perhaps some of your readers would like to buy some skunk oil.

Truly yours,
R.

Cape Cod, January 12, 1899.

Dr. R.:

Dear Sir, — I have on hand a lot of Skunk Oil or Greece, just as you may call it, about six gallons that I took from sixty-three skunks of wich I would like to sell, as you have been reccomended to me as a good Party to sell to, I take the liberty to ask your Best Price you will Pay per gallon and take the whole lot if you buy it. I will Guarantee it as being as fresh and Pure as any you ever had Without you took it right from the Skunk, it shall be shiped and you can test it before you pay for it. Pleast to Ans. soon and

Oblige yours
E. T. I.

METEOROLOGICAL RECORD

For the week ending January 7th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....1	30.43	14	25	2	92	51	72	N.W.	N.W.	13	22	N.	C.	.30
M...2	30.79	10	22	3	69	69	69	W.	S.W.	17	16	C.	F.	
T....3	30 51	28	38	19	87	56	72	S.W.	S.W.	22	10	O.	C.	
W...4	30.18	38	49	28	88	82	85	S.W.	S.W.	6	16	R.	F.	
T....5	30.05	50	57	43	81	46	64	S.W.	W.	24	15	O.	O.	
F....6	30.01	37	44	30	80	100	90	N.E.	N.W.	19	14	N.	R.	.62
S....7	29.97	31	38	24	80	56	68	W.	S.W.	20	22	O.	G.	.18
☞	30.28		39	20			74							1.10

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, January 7, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup
New York . .	3,438,899	1521	395	13.86	23.76	48	.72	10.38
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	713	185	9.38	22.40	.14	3.36	3.92
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	254	63	4.40	36.80	.40	1.60	1.60
Baltimore . .	506,389	276	66	2.52	15.84	—	.72	1.44
Cincinnati . .	405,000	142	—	1.40	11.20	—	—	1.40
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	184	62	11.34	18.36	2.70	2.70	1 62
Washington .	277,000	130	37	8.47	19.25	—	2.31	3.08
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	84	19	7.14	33.33	—	1.19	2.38
Nashville . .	87,754	32	9	6.26	25.04	3.13	—	3.13
Charleston . .	65,165	30	7	13.33	13.33	—	—	—
Worcester . .	108,240	33	12	6.06	24.24	—	3.03	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	25	10	8.00	20.00	—	4.00	4.00
Lowell . . .	88,641	42	10	7.14	23.80	—	—	4.76
Lynn	66,703	21	3	—	16.68	—	—	—
New Bedford .	66,340	30	12	13.33	23.33	—	3.33	6.66
Somerville . .	61,101	10	3	—	30.00	—	—	—
Lawrence . .	57,263	46	19	8.68	23.87	—	—	2.17
Springfield . .	56,501	34	9	8.82	38.22	—	—	—
Holyoke . . .	43,424	20	10	25.00	10.00	—	5.00	5.00
Brockton . .	37,278	10	3	—	30.00	—	—	—
Salem	36,883	11	4	—	—	—	—	—
Malden . . .	34,613	16	3	12.50	6.25	—	—	12.50
Chelsea . . .	33,468	22	1	—	24.90	—	—	—
Haverhill . .	32,022	12	5	8.33	16.66	8.33	—	—
Gloucester . .	30,589	13	7	46.14	—	23.07	—	—
Newton . . .	29,716	9	4	11.11	33.33	—	—	—
Fitchburg . .	29,438	8	2	—	—	—	—	—
Taunton . . .	28,167	17	3	5.88	—	—	5.88	—
Everett . . .	25,338	3	0	—	33.33	—	—	—
Quincy . . .	23,549	10	5	—	40.00	—	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	7	1	14.28	14.28	—	—	—
North Adams .	20,971	5	2	20.00	69.00	—	—	20.00
Chicopee . .	17,842	11	4	9.09	27.27	—	—	9.09
Medford . . .	16,511	3	0	33.33	33.33	—	33.33	—
Newburyport .	14,915	10	2	20.00	—	20.00	—	—
Melrose . . .	14,032	9	2	11.11	55.55	—	—	—

Deaths reported 3,836; under five years of age 987; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 396, acute lung diseases 915, consumption 373, diphtheria and croup 229, typhoid fever 56, diarrheal diseases 33, whooping-cough 28, cerebro-spinal meningitis 17, scarlet fever 13, erysipelas 11, measles 9.

From diarrheal diseases Philadelphia 9, New York 7, Pittsburg 5, Charleston 4, Lawrence 2, Boston, Baltimore, Washington, Lowell, Holyoke and Hyde Park 1 each. From cerebro-spinal meningitis New York 4, Washington 3, Holyoke and Gloucester 2 each, Providence, Worcester, Springfield, Newton, Waltham and Peabody 1 each. From scarlet fever Philadelphia 5, New York 4, Pittsburg, Providence, New Bedford and Melrose 1 each. From erysipelas New York 5, Pittsburg and Springfield 2 each, Boston and Providence 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,218,378, for the week ending December 31st, the death-rate was 19.1. Deaths reported 4,105; acute diseases of the respiratory organs (London) 306, diphtheria 106, measles 95, whooping-cough 71, fever 63, diarrhea 36, scarlet fever 34.

The death-rates ranged from 12.6 in Croydon to 24.6 in Gateshead; Birmingham 20.9, Bradford 17.8, Cardiff 14.1, Hull 19.3, Leeds 18.8, Liverpool 23.1, London 18.4, Manchester 23.3, Newcastle-on-Tyne 21.3, Nottingham 17.2, Portsmouth 16.2, Sheffield 19.2, West Ham 19.5.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JANUARY 12, 1899.

Banks, C. E., surgeon. Detailed to attend meetings of the National Pure Food and Drug Congress at Washington, D. C., January 18 to 21, 1899. January 10, 1899.

Kinyoun, J. J., passed assistant surgeon. Detailed to attend meetings of the National Pure Food and Drug Congress at Washington, D. C., January 18 to 21, 1899. January 10, 1899.

Stimpson, W. G., passed assistant surgeon. Granted leave of absence for two days. January 12, 1899.

Thomas, A. R., assistant surgeon. Upon being relieved from duty on U. S. transport "Obdam," to proceed to Stapleton, Staten Island, N. Y., for duty and assignment to quarters. January 6, 1899.

Greene, J. B., assistant surgeon. Detached from duty on U. S. revenue steamer "McCulloch," and directed to report to medical officer in command, San Francisco Quarantine, Angel Island, Cal., for temporary duty. January 12, 1899.

Grubbs, S. B., assistant surgeon. To report at Washington, D. C., for special temporary duty. January 12, 1899.

Rodman, J. C., sanitary inspector. Granted leave of absence for thirty days from January 12, 1899. January 12, 1899.

McGuire, E. S., hospital steward. Granted leave of absence for thirty days from February 4, 1899. January 12, 1899.

Goodman, F. S., hospital steward. Relieved from duty at the Cape Charles Quarantine Station and directed to proceed to Philadelphia, Pa., and report to Surgeon H. W. Austin for duty and assignment to quarters on the barge "Protector" *en route* to Havana, Cuba. January 6, 1899.

Carlton, C. G., hospital steward. To proceed to Chicago, Ill., and report to the medical officer in command of the Service for duty and assignment to quarters. January 6, 1899.

Southard, Frank A., hospital steward. To proceed to Stapleton, Staten Island, N. Y., and report to the medical officer in command of the Service for duty and assignment to quarters. January 7, 1899.

Purifay, John, Jr., hospital steward. To proceed to New Orleans, La., and report to the medical officer in command of the Service for duty and assignment to quarters. January 7, 1899.

SOCIETY NOTICES.

Suffolk District Medical Society. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, January 25, 1899, at 8 P. M.

Papers: Dr. E. L. Twombly, "A Tumor of Labium."

Dr. J. W. Courtney, "The Danger of Injuring Peripheral Nerves during Operations in the Trendelenburg Position."

Dr. W. M. Conant, "Extra-uterine Pregnancy, with Report of Cases."

R. A. Kingman, M.D., *Chairman.*
C. H. Hare, M.D., *Secretary.*

Medical Society of the State of New York. — The ninety-third annual meeting of the Society will be held January 31 and February 1 and 2, 1899, in the City Hall, Albany, commencing at 9.15 A. M. on the 31st and ending at 1 P. M. on the 2d.

Communications relating to the presentation of papers or to any changes in this preliminary programme should be sent to the Business Committee: Willis G. Macdonald, Chairman, 27 Eagle Street, Albany; Edward B. Angell, Rochester; James McF. Winfield, Brooklyn.

APPOINTMENTS.

Drs. Wm. H. Robey, Jr., Robert G. Loring and **Robert H. Vose** have been appointed district physicians to the Boston Dispensary.

RECENT DEATHS.

Charles Lawrence Edwardes, M.D., for many years a prominent physician in Hyde Park and a former member of the Massachusetts Medical Society, died last week at Cambridge, aged sixty-five years.

Alfred A. Kanthack, M.D., professor of pathology in the University of Cambridge and Fellow of King's College, died at Cambridge, Eng., on December 21, 1898, at the early age of thirty-five years. Dr. Kanthack, who was elected to the professorship in Cambridge a little more than a year ago, is the author of a "Manual of Morbid Anatomy," of a "Hand-book of Bacteriology," and of numerous and important original contributions to these sciences.

William Munk, M.D., Harveian Librarian of the Royal College of Physicians of London, and the compiler of the "Roll of the Royal College of Physicians of London," a work of great historical and antiquarian value, died December 20, 1898, aged eighty years.

Charles John Hare, M.D., consulting physician to University College Hospital, London, died December 15, 1898, aged seventy-eight years.

BOOKS AND PAMPHLETS RECEIVED.

Theatre Sanitation. By Wm. Paul Gerhard, C.E. Reprint. 1898.

The Radical Cure of Inguinal Hernia by Fowler's Method, with Reports of Cases. By H. O. Walker, M.D., Detroit, Mich. Reprint.

Original Articles.

WORK OF THE MASSACHUSETTS VOLUNTEER AID ASSOCIATION IN SANTIAGO.[1]

BY E. G. BRACKETT, M.D., BOSTON.

In the latter part of July it was decided by the Volunteer Aid Association to send a representative to the island of Cuba who should have direct charge of the distribution of the supplies sent by them, and who could determine from personal observation the needs of the Massachusetts men. Supplies had been sent by different transports, but not being in charge of any one, and there being no one to assume the responsibility for the Association, it was a question whether such supplies would reach their intended destination.

On the 24th of July I was asked to take this position, and start on the 25th with supplies intended for the men in Santiago. These supplies consisted of clothing, hospital supplies, prepared food, and delicacies for the sick, besides special contributions by friends and local societies. The lack of information of the conditions in Cuba at this time made the possibilities of the errand uncertain, except that the report of the sufferings from hardships and from disease allowed no doubt of its necessity. My directions from the headquarters of the Association were, therefore, somewhat indefinite, and I was asked to use my judgment in the distribution of supplies taken by me, and those which had already been sent by the *Harvard* and *Yale*, and after arrival to represent the Association in Santiago. The work was intended primarily for the Massachusetts troops, but it was desired that aid should be extended to other volunteers, and to the regulars when such was possible. The method of work, therefore, was entirely undecided, and for credentials I carried letters from the headquarters of the Massachusetts Volunteer Aid Association, and from Governor Wolcott.

It was necessary on account of the blockade and the quarantine of the Santiago Province to go by the way of Jamaica. Accordingly, arrangements were made by the Boston Fruit Company to ship the supplies on the steamer *Albert Dumois* to Jamaica, and to proceed from thence by sailing vessel across to Santiago. By courtesy of the Fruit Company, I was enabled to precede the goods and take passage on the steamer *Brookline*, arriving two days ahead of the *Dumois*. Then the goods were transferred to a thirty-ton sailing vessel called the *Little Wanderer*, the spare space in the hold being filled with barrels of limes which were obtained in Port Ontario, and after a three days' trip we reached Santiago.

At the time of arrival the city was in much the same condition as after the surrender, except the work of cleaning the streets had begun, and the American troops were beginning to be sent back to the States. The city was under military law, and was filled with the American and Spanish soldiers, and with the natives, who had not left the province during the siege. The city was still in a condition of extreme filth, it was the beginning of the rainy season, and the midsummer heat was intense. There was plenty of the army rations for the well, but a great scarcity of proper food and medicine for the sick and convalescent, and the sickness among our troops, as well as among the natives and the Spanish prisoners, had begun to be alarming. This sickness was principally a pernicious form of malaria, and there was some typhoid, and yellow fever. It was at once apparent that the special needs which could not be met in the city were suitable food for the sick and convalescent, and hospital supplies, and the Association was at once cabled to that effect. It is to the credit of the officials at headquarters that within two days from the receipt of this cablegram a shipment of such supplies was sent.

The work of the representative of the Association was evident, but the method of carrying this out was met with the greatest difficulty. The Cubans were not disposed to render aid in any way, and could only be persuaded to work by the payment of exorbitant prices, while the lack of interpreters where Spanish alone was spoken made confusion of otherwise simple work. The roads were in such a condition that the transportation by means of the only method possible, the small drays, was extremely slow. I at once reported to General Wood, and he extended every courtesy to me during the whole of my stay on the island. Every American had already more than he could do, and therefore one could not look to them for material aid, but every possible assistance to aid in the work was always given to the Association's representative. After a day's search a suitable warehouse was found on Enramados Street near the water front, and to this the goods were transferred by means of the small drays from the wharf. It was necessary in carrying on this work to constantly guard all of the supplies, otherwise they would be stolen by the native Cubans.

The work for the Association on the island was evident, for there was no question as to the needs of the men among the troops, and this consisted mainly of food for men in the camp, and hospital clothing and supplies for those in the hospitals. The hospitals especially needed prepared food, soups, stimulants and hospital clothing, and fortunately there was a generous supply of pajamas, hospital bedding, etc., which was always found to be of great use.

There were two ways which could be used in the disposition of the supplies, both to the men in the camp and in the hospitals: One was the personal distribution of the goods, which, under the circumstances, would have involved more time than would have been possible to give, particularly since no help could be obtained in means of transportation, and it also would have involved the possible friction with the prerogatives of the officials. The other method was to determine the special needs from the surgeons, the commissaries, and such of the officials who had charge of supplying the companies, and through them to see that the goods reached their proper destination. There were always some such men available, through whom such distribution of the goods could be made, and without interference with the regulations and routine, and this proved to be the most satisfactory. The distribution was made according to the comparative relative need, and was sent either by the regimental teams or by small drays, which could be hired in the city. This latter always proved to be a slow method, as the loads carried were very small, and usually it was necessary for some one to accompany these supplies to be sure of their safe arrival. At this time nothing in the line of additional food could be obtained in the city; therefore it was necessary to rely on the supplies which had been brought, and to make the best disposition possible of them.

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[1] Read before the Boston Society for Medical Improvement, December 5, 1898.

At the time of arrival there were two Massachusetts regiments which were camped on the island, the 2d and the 9th. The 2d were stationed about two miles north of the city, and it was expected that they would be sent home within a short time. The 9th were camped on the hill at San Juan, and it was generally understood that their stay on the island was probably to be an extended one, which proved to be true. Since the 2d Massachusetts was expected to leave so soon, it had little need of the supplies of clothing, but required food for the sick, both for use in the camp, and on the transport on the way home. At this time some of the supplies, which had been previously sent by the transports *Harvard* and *Yale*, arrived in Santiago, and were taken in charge by the Association. No word was received of their arrival, but one lot was found on the wharf, where it had been unloaded from one of the lighters, and the second lot was found on board one of the large tugboats, to which it had been unloaded from the transport. Many of the boxes had been opened, but in general the shipments arrived in good order. Much of these supplies, as well as selections from the stores in the warehouse, were sent to the camp of this regiment, the selections being made with the probable short stay of the regiment on the island in view. Fortunately the orders to leave came within a few days, and these supplies were used on board the transport on the way home.

The 9th were in camp three miles from the city, on the San Juan Hill, and had the same general needs as the 2d, but transportation to this regiment was much more difficult, owing to the distance and the condition of the roads. Later in August, from the longer exposure to the hardships of the climate, they being the last to leave the island, their condition became such that the need of additional food for the men on duty and for special food for those sick in quarters was still more urgent. The majority of the regiment were using only the hardtack and coffee of the regular rations, and the whole regiment began to show the result of their continued stay on the island. Just before the regiment left for Montauk a shipment of supplies sent by the Association by Mr. Austin arrived, and in time for the use on the way home on the transport. This lot of supplies contained a large quantity of prepared food, condensed milk, etc., and proved to be most useful. At the same time soups and condensed milk could be bought at the commissary department, and a sufficient quantity was obtained to last until reaching Montauk.

During August there was but one hospital, the Nautical Club, in the city under cover, and to this the sickest of the men were sent. It was found that there existed a scarcity at this hospital of hospital clothing, food and stimulants, and of any kind of delicacies for the convalescent. During the month of August frequent donations of these articles, as well as the alkaline waters, which fortunately could be bought in the city, were sent.

About the time when the last detachment of the 9th Regiment had left the island the representative of the Association was asked by General Wood to equip and take charge of a hospital in the city of Santiago. For this there was taken a building formerly built for and used as a hospital by the Cubans, called the "Centro Benefico," but which had been closed for some months. There was some of the hospital furniture which could be used, but in general it was necessary to select, for supplies could be obtained from different sources throughout the city. Medicines at this time were hard to obtain, but finally were found by collecting from the various sources about the city, and special foods for the patients were collected from the various supplies, which later had begun to come into the city. At this time there was left among the stores a quantity of supplies which could be used as hospital furnishings, and much of this, especially clothing, was used to fill this need of the hospital.

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CAMP WIKOFF, MONTAUK, L. I.[1]

BY W. H. PRESCOTT, M.D., BOSTON.

I went to Montauk, August 15th, as agent of the Massachusetts Volunteer Aid Association, and "to establish a diet kitchen to provide delicacies for the Massachusetts regiments which were coming." I arrived at Camp Wikoff about a week after the first patient was admitted to the hospital, and stayed until there were only twenty patients left.

When I arrived I found a great deal of confusion — there were few physicians, fewer nurses, and fewer still hospital-corps men, and new tents or wards were being erected.

Among the other causes of confusion were: (1) the limited number of cots; (2) the difficulty in obtaining supplies (of all sorts); (3) the lack of an index of the patients; (4) the constant changes taking place among the patients; (5) the presence, in the wards, of "outsiders"; (6) the lack of any policing, and, finally, the absence of a firm, controlling hand always within reach. The surgeon in charge, Col. W. H. Forwood, to whom I applied for permission to erect a diet kitchen (without expense or trouble to the Government), did not consider one necessary, and it was nearly two weeks later when permission was given to Mrs. Valentine Mott, representing the Red Cross Society. Immediately after permission was obtained Mrs. Mary Hatch Willard, an expert dietitian sent by the Red Cross Auxiliary No. 3, and I, working in hearty co-operation, planned, erected and equipped a large diet kitchen with a floor space of over 2,000 square feet, and capable of providing the delicacies needed for 1,500 men. It was intended to show that food could be neatly and satisfactorily prepared in a kitchen in a field hospital, and it fulfilled its mission. In addition to the diet kitchen erected at the General Hospital there were similar kitchens (although smaller) provided for the three division hospitals, and additional equipments furnished to the one established at the Detention Hospital by Dr. L. A. C. Hughes and Miss Fennessey.

Almost the entire expense of the erection and equipment of these kitchens was borne by the Massachusetts Volunteer Aid Association, as well as the running expenses, until they were turned over to the Government, which had also borne part of the expense of their establishment. And it seems to me that it was only necessary for the outside "helping" societies to take the initiative, get a thing started, and then turn it over to the Government. In my experience, those in authority were always glad of help, and willingly accepted the things turned over to them where their value had been established.

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[1] Read before the Boston Society for Medical Improvement, December 5, 1898.

The camp was an ideal one, situated as it was at the eastern end of Long Island — not too far north nor too far south for the purposes for which it was started. It was intended for a quarantine camp for those soldiers coming from Cuba. If it had been farther north the cold would have affected the men much more seriously than did the air of Montauk; if it had been too far south the danger from the spread of yellow fever, if it once got started in the camp, would have been great. There must be sufficient room for 25,000 men. The water-supply must be good and abundant. This was provided by the two large ponds, into which the horses and mules could be driven, and a well forty feet deep provided water for the men. The water in the ponds was brackish but not harmful, that in the well laxative but otherwise all right. A large force pump was put into the well, which forced the water through two large sand filters and then to the different parts of the camp.

The water in the well, in my opinion, never became contaminated — surely not before the sand filters removed any danger from its use, even if it had become contaminated. I used the water all the time I was there and never suffered any inconvenience from it. The water pipe leading to the hospital broke a few days after my arrival, and the only water for drinking purposes during the following three days was the Hygeia and Apollinaris, which the Red Cross and Massachusetts Volunteer Aid Association furnished.

The physicians varied as to ability and character, as they do in every part of the country: some were good, some were poor, but the average was above that which you would find in any large city. One doctor ordered four quarts of whiskey for his ward, and the patients received one quart, while he kept the rest; he was removed the next day. Another suffered much from rheumatism, for which he took large doses of whiskey, and on that account was unable to do his work, so he was relieved. Another cut off the uvula of a patient suffering with diphtheria, that he might breathe more easily, and he was discharged. Another was frightened by finding a case, as he thought, of yellow fever and ran away. To raise the average we had three of the prominent men of the country: Drs. Nancrede, of Ann Arbor, Senn, of Chicago, and Delafield, of New York.

The nursing was, on the whole, good. The majority of the female nurses, both the trained nurses and the Sisters of Charity, did their work conscientiously — perhaps the only criticism I would make of them was that they could not appreciate that the doctor was supreme in his ward. I cannot say as much for the male nurses, who came from the different parts of the country, and who found fault with everything instead of trying to make things better. Many of them stayed twenty-four hours or less, and it was a relief to the authorities to have them go. The hospital-corps men were for the most part untrained, and while they did as well as could be expected of them under the circumstances, it has seemed to me that there was a great mistake made in the manner of their enrollment, and that not enough inducements were offered to procure men qualified for such work.

There were five hospitals in all — the General, which at one time had a capacity of 1,800 beds, the Detention, with about 400 beds, and three division hospitals, which had altogether about 450 beds. The Detention Hospital was in Detention Camp, and was the hospital to which all suspicious cases were sent. When I arrived, this hospital was under the care of a captain in the regular army, — a bright capable man, — but utterly unfit for his position, because he was under the influence of liquor a part of every day. He was removed and Major Ebert, who had won a name for bravery and ability at Santiago, was appointed, and again proved himself to be a man of exceptional ability. The General Hospital was under the direction of Major C. L. Heizman, who had as assistants Major J. C. Brown, Major L. B. Almy, and Major H. D. Thomason. All of these were men of ability and did their work carefully and thoroughly, but were handicapped by the lack of authority. The plan of the hospital was an excellent one, but there was a lack of executive ability in the man who had charge of its construction and general charge of all the hospitals. It has seemed to me that this was one of the "outs" of the camp, for there was needed great executive ability and the power to delegate authority to "the heads of departments." The surgeon in charge had to sign every order, and, as he was not (and of necessity could not be) always on hand, the work dragged and much confusion resulted. Another source of trouble was the absence of written orders and the liability of having orders countermanded almost as soon as they were issued. Another "out" was due to the fact that the Government did not use the water-way for the transportation of food and supplies.

The Long Island Railroad is a one-track road, and it could not take care of all the supplies and people which it was necessary to bring to Montauk. The management of the road is to be congratulated upon the splendid work done and the great ability shown, but in spite of all that could be done there were many vexatious delays and much hardship as the result. The Volunteer Aid Association, through the generosity of one of its members, was able to provide the tug *Alert*, which made bi-daily trips between New London and Montauk, thus making it possible for me to get the supplies sent at regular times (and on time), and also made it possible for me to procure things quickly when, for any reason, they were needed.

The means provided for the furloughing of the men were inadequate, especially at first, and there was suffering in consequence. But many distressing cases of men taken ill at the station and on the train were due to other causes. The men had come from Cuba, and their cerebration was slow and poor, and they could not be relied upon (I am speaking of those in the hospitals) to do what they were told. The physicians were slow to realize that this was so, and when a man had no rapidity of pulse, no elevation of temperature, and said he felt well, he was recommended for furlough. It takes some time for a furlough to be made out, especially if there are fifty to seventy of them and only a few clerks to do the work. The furlough was made out at the hospital, and then the men walked to the station, a distance of a mile and a half, through the dust and in the sun. When they arrived at the station their transportation and commutation of rations had to be made out at the Quartermaster's Department, which meant a farther walk of 300 yards (150 each way) through sand up to one's ankles. Of course it took a good deal of time to do these things and by the time the train was ready to leave the men were tired out and some of them quite ill (their illness perhaps aggravated by a visit to the lunch counter and its pies). I saw many patients having severe chills in the barn-like waiting-room of the station, but it was seldom indeed that a man, no matter how ill he was, could be induced to return to the hospital. They were furloughed, and all you could do was to reason with them, and they could not understand any argument. They wanted to get home, and were near the train which was going towards their home, and nothing you could say would make them go back; not that they had been badly treated, but it was going away from home and they were going home. The quartermaster's office was finally moved to a tent near the station, and the Red Cross opened a tent right across the way where the sick men could be taken care of before the train was ready to start.

Then the long railroad journey was trying at best and especially so when made in an ordinary car without comforts. Mr. Ernest McMillan, of New York, with the aid and co-operation of Mrs. Willard, provided a hospital car which he ran at his own expense until it was turned over to the Government. The car (an ordinary baggage one) was lined throughout with white oil-cloth, and cots and reclining chairs put in. A nurse and doctor went with the car on each trip, and all the medicines and nourishment needed were taken along. Mrs. Whitelaw Reid soon after sent two Wagner cars to be used in the same way, but even under these circumstances a dusty ride of four or seven hours is a strain upon a sick man. After the second or third week a "board of investigation" was appointed, which went around every morning and decided what patients were able to be sent away, and after that I do not know of any one who suffered material injury because of his being moved. When for any reason a very sick man had to be moved, the cot upon which he was lying was taken and put into an ambulance, driven to the station, and then put into the "hospital car" and sent along on the train, so there was no moving of the patient between the hospital at Montauk and the one to which he was sent. The nurses in the "hospital cars" kept a record of the temperatures, etc., of all the patients carried, which will be published at some future time.

A great deal of my time was spent in the distribution of the supplies sent by the Massachusetts Volunteer Aid Association to the 2d and 9th Massachusetts regiments, and to every regiment of regulars. In this work I was aided by Grafton Cushing, Esq., who rendered invaluable assistance, and who soon became known to every regiment as the distributer of Massachusetts benevolence.

There was distress at Camp Wikoff, some of which was relieved and more prevented by the various societies which had representatives there. A great deal of the distress was due to the lack of preparation and to the nature of case, but in spite of it all, in my opinion, the hospitals at Montauk became model field hospitals.

Complaint has been made that taps were not sounded, salutes fired, nor sufficient attention paid to the dead. As the cemetery was within one hundred yards of the hospital, the cruelty and danger of taps and salutes can be readily appreciated. On one day there were seventeen deaths, and if these ceremonies (proper and impressive though they be) had been performed I believe that fifty more men would have died among the 1,600 patients, then in the hospital, as a result.

In conclusion I wish to pay my tribute of praise to the regular soldier. I found him to be brave, uncomplaining, obedient to orders, above the average in intelligence. No matter where he may be put, the American soldier will be a credit to the nation and bring honor to himself.

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GENERAL REPORT.[1]

BY JAMES BOOTH-CLARKSON, M.D., BOSTON,
Medical Agent of the Massachusetts Volunteer Aid Association for Porto Rico.

The Massachusetts hospital ship *Bay State* arrived at Ponce, Porto Rico, on Sunday, September 11th, but before anchoring was met by the port authorities with orders to go at once to Guanica for refuge from a hurricane signalled from Barbadoes. The ship had to go into the landlocked harbor of Guanica after dark and without a pilot, there being no other alternative, as, being near the land, and with only two days' coal on board, she could not have ridden out a hurricane at sea.

Next morning, September 12th, we went ashore to visit the camp of the First United States Engineers. This was one of the best if not the best camp seen in the island, as it had been intelligently selected, laid out, drained, and the discipline was similar to that of the regular army. Discipline had evidently been a successful hygienic measure, as the health of the men was much better than that of the regiment preceding them, who had found the same site a swamp and had camped in it without seemingly improving it. At the request of Dr. Williams, the *Bay State's* medical staff visited the hospital, which was in very good order considering the circumstances. Dr. Williams had made arrangements for getting eggs, milk, chickens, etc., from the surrounding country, so there was comparative comfort, at the same time he was very glad of some medical and other supplies from the *Bay State.*

There were about 35 cases in hospital (which, after all, was a large number for a company post), most of which were stated to be analagous to the mountain fever of Florida and the Southern States, with perhaps more pronounced intestinal symptoms.

The cases were most satisfactorily treated with intestinal antiseptics, as spirits turpentine, listerine, salol, stimulants, turpentine stupes to redness, and quinine as a tonic. He (Dr. Williams) had not discovered, neither did the microscope, any cases of malaria. There seemed to be more care to prevent disease in this regiment than in others met with; for instance, the camp was well chosen as to site, was well drained; the mules were three-quarters of a mile inland from the camp, and the sinks a considerable distance from it towards the sea; all trees except a few large ones were cut down; there was a U-shaped trench around the whole camp, besides trenches round tents, which had wooden floors; the men were warned what to avoid, such as mangoes, pineapples, bananas; and orders had to be obeyed, as there was none of the "If I were you I would" about orders there. Water was carefully filtered. The men took two grains of quinine thrice daily, and were encouraged to take oranges, limes, sweet limes and lemons. They found the regiment they relieved living in a swamp on the beach, and nearly all sick. They evidently thought a good deal of their medical officer (and justly so), and were desirous of following his advice.

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[1] Read before the Boston Society for Medical Improvement, December 5, 1898.

From Guanica the *Bay State* went to Ponce again, where we were informed that there was a great deal of sickness, a shortage of supplies, and a great deficiency in regard both to surgeons and nurses, while most of the latter available were totally untrained. It was also said that the 6th Massachusetts Regiment (our especial care) was at Utuado, to which place the roads from either Ponce or Arecibo were quite impassible, as mules and ambulances had fallen down precipices in trying to get there.

The general hospital was visited, and this, like all others seen, was most suitably built for the climate, namely, wards round a court-yard with a fountain and trees in the centre, and offices on each side of the entrance gate. There was no glass in the windows, but outside shutters. The wards were large and lofty, but were much crowded with our sick, being, like Boston street cars, indefinitely expansible, as "Necessity knows no law." Everything was short, and this was not well or easily distributed. While doing what was possible for both Massachusetts and other troops, both pecuniarily and otherwise, I was impressed with the fact that the so-called "contract surgeons" (who should have been called "acting assistant surgeons") of the United States Army were really worse off than either patients or nurses, and did what was possible to help them. Since then I have heard complaints about these gentlemen in the States, but I heard none in Porto Rico. It would not have been suprising if there had been, for if a so-called "contract surgeon" is treated worse than a mule, it is difficult to see how he can be very enthusiastic, when at his engagement he is told that he ranks as, and has the privileges of, a First Lieutenant in the United States Army, and then is threatened with court martial if he wants to buy a can of salmon from the commissariat stores. Seven out of twenty of these gentlemen were Massachusetts men, so I felt it quite justifiable to do all that was possible for them.

General Henry told me that a great deal of sickness among the volunteers was due to their not taking care of themselves, which I saw afterwards was probably true. Another camp of the First United States Volunteer Engineers was visited here, and was found to be in the same excellent condition as the one at Guanica. Certain camp rules had been established in regard to admitting pedlers, and the prices at which they had to sell fixed, which did not seem to be the case with any other troops met with in the island. The commanding officer said he was very short of officers in common with many other regiments, as officers had been appointed in the United States Army simply with the intention of being put on staff duty there, and never joining at all. While here there occurred two cases of supposed yellow fever, one of which seemed probably so, the second (which had just arrived from Panama) being a case of ptomaine poisoning.

Here it was realized how difficult it was to get any reliable information about anything — no one told the same tale; as an example of how far newspaper reports could be accepted, it may be mentioned that an ice-plant which was reported in the United States to be in working order, and invaluable to the sick, had not even been put up at all. Examples of the want of discipline occurred daily: many men who could hardly be considered sick came off to the ship and demanded a passage, without seeming to think it needful to get any permission from either medical or other officers; others wanted money, on the ground that they were going to be left at the landing point in the United States but not going to be sent home. It was claimed that many officers who even had arrived were political appointments quite irrespective of their knowledge of their work. There appeared to be very little drill, while the soldiers seemed allowed out from quarters at any time, irrespective of leave. Most of the men who were well were employed in driving apparently empty ambulance and army wagons between Ponce and Port of Ponce, a distance of about three miles, in spite of which activity every one said "that it was most difficult to get anything done," and that while "there was a shortage of stores it was very difficult to get even those there were distributed." The ration of bacon and hard-tack, with (when they were lucky) beans and canned tomatoes, was quite unsuitable for the tropics, and every one, whether sick or well, seemed anxious to get back home.

The *Bay State* arrived at Arecibo on Monday, September 19th, and was at once boarded by Dr. Manahan, who, with Dr. Crockett, had made a very stiff ride from Ponce to Utuado by an almost impassible road, with the view of taking immediate supplies to the 6th Massachusetts Regiment. Dr. Manahan was able to inform Dr. Burrell as to the real condition of things there, and as to the possibilities of moving the sick out, it having been decided before this that the sick of that regiment could not possibly be moved out via Ponce, while it was more than questionable if they could reach the ship by the way of Arecibo, which town was about twenty miles distant over a very bad mountainous road and still in the hands of the Spanish.

Dr. Burrell now decided to go himself to Utuado, so he and I started, but, it being late in the afternoon, most of the journey had to be done after dark, so Utuado was not reached till about 11.30 P.M., after some experiences, for a detailed account of which see "Burrell's Ride," as given at the Tavern Club dinner. Here it is only necessary to say, that, by the time we arrived, much respect was felt for the native horse, road, river, and man, and the latter had a story to tell about "two mad Americans," as he considered us.

Next morning we started back for Arecibo, following the sick train, which had been marched off earlier by Dr. Crockett. What was seen during our short stay was by no means inspiring, though, as far as the sick went, everything seemed to have been done that could have been under the circumstances.

That evening ninety sick were embarked, including Major Dow, the senior surgeon of the regiment. This made an already shorthanded medical staff still more so, and it was decided that I could be more useful in making headquarters (while in the island) with the 6th Massachusetts at Utuado than elsewhere. Having seen the condition of affairs at Utuado, and received statements regarding them from persons there, Dr. Burrell decided that he could leave two nurses, the Misses Parsons and Galt, and two baymen, Messrs. Kemp and Lyford, with me to assist in the care of the sick there. At the same time, they were to be still considered as part of the staff of the *Bay State*, and be treated accordingly.

Up to this time all my observations tended to show that no attention to either the comfort or health of either surgeons or nurses was in any way shown by the authorities, which had resulted in much sickness, want of efficiency, and discontent, so I was very particular in requesting full authority in regard to what may be termed the interior economy of my small contingent, as it was of the first importance that they should return to the ship in as good health as when they landed in Porto Rico — which they were! In order to be prepared for all possibilities, I suggested to Dr. Burrell that, should it be impossible for the nurses to avoid those (to my mind entirely unnecessary) discomforts, privations, and general inconveniences, which would certainly place them on the sick-list, it should be considered quite in order for me to take them to San Juan or Arecibo, and place them in the best hotel (this is not saying much) to be found there till the *Bay State* returned.

Finally, the afternoon of September 21st saw the *Bay State* sailing out, and us sailing in through the surf to what was called the "Embarkation Place," from which the party had to be transferred to three small boats, and sail a couple of miles to the town of Arecibo through a kind of shallow lagoon (made by the Rio Grande), making a curve round a sand-bar before reaching the sea. It was interesting to note that the women seemed to anticipate the prospect with more satisfaction than the men. Possibly the former were considering the picturesqueness of the situation, while the latter were thinking that the general comforts of Porto Rico would be much inferior to the *Bay State* — and in this they were right. Knowing that Arecibo would probably be a sort of base of operations, I called on the Spanish commander early next morning to get a permit attached to my appointment (originally received from Mr. Sherman Hoar) permitting me to pass the Spanish lines at any time, following my system of getting the endorsement of any senior American or Spanish officer in whose district I might be. On several occasions this document was found very useful.

The first part of the trip to Utuado was pretty easily managed, though it was all the ambulance with the nurses and baymen could do to get through the fords without wetting the passengers and the baggage. Next day these fords were impassible, and practically continued so for the rest of our stay in the island, leading to great convenience and considerable risk. While the party was lunching not far from the American outpost rain commenced, which thereafter continued rather more than less permanently. During this halt I was very seriously exercised in my mind as to what to do with my party, for no arrangements, except theoretical ones, had been made; there was no known accommodation, no hotels, and the knowledge of the language of Spain possessed by the Americans in Utuado and ourselves collectively did not amount to much. First impressions being very important, arrangements had, if possible, to be made, so that the sudden change from the comforts and admirable arrangements of the *Bay State* to the unadmirable arrangements of everything Porto Rican and Porto-Rican American should not cause too severe a shock, and I had a very depressing feeling that out of the whole party I alone knew practically what that meant. So pushing my razor-backed cavalry ex-cart horse to full speed I arrived, drenched, some three hours ahead of the main body, and, meeting an acquaintance to whom I explained circumstances, was met with the consoling reply, "Get out of those wet clothes or you will have fever, and put off till to-morrow," which did not elucidate matters much. I had with me, fortunately, Sergeant Edwards, a most excellent soldier, who, not only now but on many other occasions, was of the greatest assistance to the whole regiment and myself, and with his aid I was able to see several houses which might be suitable for us, as it was decided that the *Bay State* party must not be separated, as it would then be impossible to follow out in detail the general instructions. A very attractive residence was procurable, and under the circumstances the temptation was great to secure it at once, as it fulfilled all the requirements in regard to comfort, space, neatness, cooking, strict cleanliness, sanitary arrangements and water, and in fact everything, except that it was in a basement, which trangressed the perhaps most important rule for the preservation of health in the tropics, namely, that the living apartments should be as high above the ground as possible. However, with some search, apartments almost as comfortable were obtained in the house of a Señor Perada, and by the time the drenched ambulance arrived arrangements had been made which gave us a very pleasant home during the stay in Utuado. This was a matter of considerable satisfaction, for, with the exception of the First United States Volunteer Engineers, so often alluded to, the naval ships seen at various times, and ourselves, no one had seemed to try to be comfortable in the island, and this must have had a bad effect on the general health.

Señor and Señora Perada treated their American family with great kindness while in their house, and took great pride in the two nurses, particularly when they knew that they were the first American ladies who had been at the front — in Porto Rico at least.

As the great point in regard to tropical diseases is prevention, instead of treatment, as there is often too little time for the latter, at the first dinner attention was drawn to the few simple rules, which, from that time, were strictly followed out:

(1) Four grains of quinine were to be taken every morning at breakfast time.

(2) All water and milk had to be boiled.

(3) Abdominal bands to be worn.

(4) Needless exposure to heat, damp or fatigue avoided.

(5) Care to be exercised in eating fruit, and the less the better after breakfast. This precaution was not quite so necessary in the western as in the eastern tropics, but the Porto Ricans seemed to be very careful on the point themselves.

(6) Particular care to avoid whatever might tend to cause what, for want of a better name, must be called "chill," as keeping on damp clothes or boots, sitting in draughts, particularly when overheated, or too great indulgence in cold baths; also to have blankets handy for the cool hours of a morning, as tropical nights are very deceptive, and it is particularly during the early morning hours that the increased action of the skin renders the body more liable to take "chill," which produces congestion of the internal organs, particularly of the intestines.

(7) It was not necessary in this instance to emphasize great moderation in diet, smoking, and in alcohol particularly.

(8) Breakfast was to be at 7.30. A. M., lunch at noon, and dinner at 7 P. M., when the serious work of the day was over. Ample time was to be taken for meals, and a rest in the middle of the day. No so-called exigencies were to be allowed to interfere with this, because there was not the least reason for it.

(9) The women particularly had to have one half-day off a week, and if possible the baymen too, which half-day was to be made a pleasant holiday. The weather, however, did interfere with this mostly.

(10) That while on duty in the hospitals the nurses and baymen were to obey all orders, except any which might infringe or lead to the infringement of any of the above rules, in which case the matter was to be referred to me first; also, no new arrangements were to be permitted from outside sources while I was absent on various duties from Utuado.

On several occasions this latter regulation (which, like all the others, was strictly carried out) saved our position from changing from a fairly pleasant one to a very unpleasant one, when the character of the work done would probably have been less satisfactory, and it is probable that the nurses and baymen would neither have returned to the *Bay State* as well as when they left it, nor have been willing to remain longer on the island if required.

On comparing notes with the various persons met with in the island, whether soldiers or sailors, whether individuals or in bodies, it was interesting to learn that those who seemed to be in anything like good health claimed to have lived very much as we did, while it is certain that the majority of the sick could most conscientiously deny having followed out any rules at all. Just before our arrival in Utuado things seemed to have been in pretty bad condition, but the arrival of stores from the *Bay State* mitigated this considerably. There was still, however, a deficiency in some drugs, as chloride of lime, strychnine, alcohol, paregoric, brandy, glycerine, and anything in the way of mouth washes, while eggs and milk were sometimes difficult to get. There were about 400 sick in hospital, in quarters and at sick-call, with, for some days after our arrival, only one clinical thermometer for the lot; most of the nurses were quite untrained; there were only two medical officers, who had to attend three hospitals, sick in quarters, sick-call, and also some separate company posts.

After some arranging and rearranging, I was given charge of No. 1 Hospital, Miss Parsons and Mr. Kemp being also attached to it, while Miss Galt and Mr. Lyford went to No. 2, and all did what they could for No. 3. Hospitals Nos. 1 and 2 had about 70 cases each, and No. 3 about 25. Most of these cases were typhoid at first, but later on there were more cases of malaria and continued fever. Some of the typhoid cases seemed to be of a very severe character, and a great many of the nurses were taken sick and some died. At first sight the hospitals seemed to be in a very satisfactory condition, only, perhaps, a good deal crowded, but closer acquaintance showed how serious a matter the deficiency was in trained nurses. Of four stewards only one had received any hospital training, and barely a third of the nurses were hospital-corps men or civilians who had volunteered for the front. The hospital-corps men said they had only been instructed in first aid to the injured, and knew nothing about bed-making, bathing, or the ordinary care of a bed-patient. The remainder were men from the ranks. Some of these had volunteered to take care of special friends, and were willing to be taught, and when taught were faithful in their work; and of these many became sick and some died. Others, while doing the best they knew how, probably, but being quite untrained, would let typhoid patients stand on the floor while the sheets were changed, allow them to sit up in bed, use chambers instead of bed-pans, and get articles of food from outside or from other patients, as neither they nor the patients in any way appreciated the necessity for ordinary precautions, or for strict adherence to prescribed diet. Others, again, declared they would much prefer being in the guard-house to nursing in hospital, and some of them managed to get there. There was also a great want of trained cooks too, both for the diet kitchens and the regiment generally. This probably added much to the sick-list to begin with. Owing to a lack of kettles, boiling water could not be had to wash dishes, and until a laundry was established the bedding of typhoid patients had to be used longer without being washed than was advisable.

It will readily be seen how valuable the presence of the four trained nurses from the *Bay State* was under these conditions, and the moral effect of the presence of the ladies was very apparent. They themselves were frequently very discouraged and more than once said, almost in tears, that while they "knew the work they were doing was useful, still it seemed only to be a drop in the bucket compared with what ought to be done," but the general verdict was that they could not appreciate the amount of good their presence had done to both the patients and men generally. Meanwhile, in addition to the charge of No. 1 Hospital, I placed myself at the disposal of Dr. Washburne, to assist in whatever he considered conducive to the benefit of the regiment, such as establishing a wholesale water-boiling and milk-boiling plant and establishing another hospital, etc.

During the first week Utuado was quite shut off from the world; the road to Ponce was washed away, the fords to Arecibo were impassible, while the telegraph wire to each place was down, as it mostly was, so a cablegram sent to announce sailing of the *Bay State* did not reach Boston till after her arrival. About this time I had to go to San Juan to see if coal could be got for the *Bay State* on her return, and cabled in the affirmative. This was a very interesting trip, as, the fords being too high, the mountain pass had to be used. San Juan was still under Spanish rule, the commission was holding a daily session, and affairs generally were somewhat unsettled. On arriving at Arecibo again, there was a telegram from Dr. Washburne requesting me to arrange for receiving, putting up for the night, feeding, and embarking next day about sixty sick, to be called for by *Relief* October 5th, which was done; also incidentally to look at quarters which might be suitable for hospitals, headquarters, military offices, officers' mess, etc., which was also done. At intervals, also, there were numbers of letters to be replied to to America, about numerous relatives who were in or had been in the island.

While absent from Utuado some acting assistant surgeons had arrived, who were mostly distributed to the company posts hitherto without any, also some nurses, who in a week were very anxious to leave again, which was not surprising, in view of the instructions for their treatment telegraphed from headquarters, which was to the effect that "Women nurses were to be treated, rationed, and quartered as hospital-corps men, and no expense was to be incurred for them." On my return I was asked to take charge of N. 3 Hospital, and to make myself generally useful. In a few days a cablegram arrived announcing the sailing of the *Bay State*, and it was again necessary to go to Arecibo to meet her, which I did on Sunday, October 9th. Going by the mountain pass again, I could see the escort of the paymaster's money chests and a company of the 6th Massachusetts (which had started nearly a week before) detained between the fords, being quite unable to either go forward or return.

On arriving at Arecibo there was quite a lively little skirmish going on between the natives and the Spanish soldiers, in which five were killed and twenty-five wounded, which gave an opportunity of seeing a few bullet and machete wounds. The people were in a state of insurrection, and were being incited to mischief by leaders, who seemed to be denouncing the Spaniards and the acting American consul, Mr. Wilson, who had been a very good friend to every one, while the Spanish troops were drawn up under arms outside their own barracks ready to fire on the mob.

The only way to handle this position without much loss of life was to get some American troops in the town at once, to co-operate with the Spanish soldiers in keeping order, and as the Spanish commander very readily sanctioned this, a telegram was sent to Colonel Rice for permission to send a messenger to meet a company, then on the way by the mountain pass, and order it to come on to the American consulate. As the town was patrolled that night by both American and Spanish troops, the rioters had to console themselves by burning and looting the outlying estates, and at one time more than twenty burning plantation buildings could be seen from the American consulate. Every night, and often during the day, estates not guarded by troops were robbed and burned.

Next day Dr. Washburne telegraphed that he was sending down a number of sick the day after, which he wanted to place in the Spanish hospital, which I was "to get the best way I could." This proceeding did not hold out an altogether enjoyable prospect, for the Spanish still held possession of the town, and there were about twenty-five Spanish troops in the hospital, which, moreover, was not a military but a municipal one, and was controlled by Sisters, who were universally respected throughout the island, while in addition there were quite a number of the towns people occupying it.

Public opinion was strongly opposed to this performance as being against vested interests, but fortunately the Spanish commander was amenable to the suggestion that even the American Army might not be able to protect his sick soldiers after the exhibition of the previous day, and that they had better go with the regiment next day at any risk rather than be left to the fury of the people. The *alcalde* had to accept the position that "Necessity knows no law," and that he had to deal with the Sisters, while he was generously offered the use of any available building in his own town (except his own hospital) as a hospital, and finally the hospital was ready for the sick on arrival from Utuado.

Next day the Americans took over the town from the Spanish, and during a very interesting ceremony the anarchists of the district seized the opportunity to set fire to several residences belonging to so-called "Spanish sympathizers," which meant any one whose house was worth looting.

On October 12th the *Bay State* arrived, being rejoined by myself and the nurses the same evening, while the baymen came on board a few days later in San Juan, and all in as good health as when the ship left us, though had we remained in the island it is probable that work would have had to be carried on at less high pressure to have maintained as good a bill of health permanently.

Tropical diseases are still very obscure and very little has so far been done in temperate climates for the furtherance of their scientific study. This has been recently fully recognized in Great Britain, where a school for the study of tropical diseases has been founded, with the sanction and assistance of the Colonial Office, while a journal of tropical diseases is being published, edited by Surgeon-General Sir Joseph Fayrer, an Indian medical officer of great experience. Possession of both eastern and western tropical countries will give the United States great advantages for similar enterprise.

At present it is not easy to differentiate between malaria, typhoid, continued fever, the unclassified fevers, and, where it is liable to occur, yellow fever, while the treatment of these diseases, and also cholera, dysentery, plague, etc., seems to be empirical. When yellow fever can be excluded, owing to probabilities, and if in doubt, it seems safest to diagnose typhoid as being the most serious, which is shown by the experience of the American Army in the West Indies and Honolulu, the French in Algeria, Tonquin, and Madagascar, and the British in India and Egypt. In the latter army this disease still causes the largest mortality, which is about 43 per cent. of total deaths. The native army with other native races seems to be more immune, which immunity is apparently shared by the prisoners. Typhoid seems to spread more rapidly and be more virulent in tropical climates, and very careful investigations carried out in India seem to show that there must be some other sources of enteric contagion than those usually accepted.

As those taken sick in the tropics seldom seem to recover their former health without a trip "home," it is certain that preventive measures are the most important as regards armies (and in fact as regards every one), and it is encouraging to find that those armies in which this has been most carefully adhered to have suffered the least from disease. For example, the French Army, which, since the days of Napoleon the Great always has disregarded the advice of the medical staff, has always suffered more in its most healthy expedition than the British in its most unhealthy expedition. The British military authorities had learned enough before the last Ashantee Expedition for the commanding officer (H. R. H. the Duke of Connaught) to inform them on the parade at Aldershot "to do all the doctors told them," and had a certain royal prince followed out his brother-in-law's order he might have been alive now, but he thought, as a good many military officers did during our late war, and which fact I put before the investigating commission, that, in the former words of Lord Wolseley in the "Soldier's Pocket Book," "Medical advice is a very good thing — when it's asked for."

All that can be said is that persons, whether civil or military, who act on such a principle in the tropics will probably stay there.

As tropical diseases strike "butt end first," as sailors say of a white squall, and frequently leave no time for treatment, which at best is unsatisfactory, preventive measures should be particularly to the following:

(1) Selection of the soldier for service in the tropics who should be of good physique, not under twenty-two years of age, not anemic or of a strumous or arthritic diathesis.

(2) The rations, clothing, underclothing, and headgear should be suitable, and houses raised above ground should be used instead of tents.

(3) The water and milk supply should be most strictly supervised, as these are, so far, considered the main sources of malaria and other diseases.

(4) The fatigue work should be done by natives, and there should be no over-drill or instruction. Hence the commanding officers should not be a cross between a sergeant-major and a master-tailor, but should be in touch and in sympathy with their men.

(5) The simple rules for health in the tropics are those the *Bay State* party followed out at Utuado, which are before referred to.

(6) Regimental officers should be trained in the prevention of disease in an army in tropical climates.

(7) The life of the soldiers should be made as pleasant as possible to avoid home-sickness and *ennui*, which will certainly lead to other kinds of sickness.

(8) Commanding officers should be informed, and in no uncertain way, that medical advice in regard to the health of troops, especially in time of peace, is a "very good thing" even when "it is not asked for," and that they will be held very personally responsible for disregarding it even in time of war.

Finally, it would seem that Charles Lever, the author of "Harry Lorrequer," has condensed almost the whole duty of man, so far as living healthily and comfortably (it might be too much to use the word happily) in tropical climates, in the answer he gave a patient as to how to escape cholera, which was then raging in Ireland, during which epidemic Lever was working hard at a West of Ireland dispensary. His prescription was:

"Fear not, but be serenely gay;
Prudence in living show;
If you would have the men say 'Nay,'
In *corpore* say 'No.'"

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THE SHIPWRECK OF THE STEAMSHIP "LEWISTON."[1]

BY T. B. SHEA, M.D., BOSTON.

The Massachusetts Volunteer Aid Association, desiring to bring home Massachusetts sick soldiers from Camp Wikoff, chartered the steamer *Lewiston*, which, after being duly inspected and provisioned, sailed Saturday, September 3d, for Montauk. The *personnel* of this expedition, besides the captain and crew, consisted of Dr. Myles Standish with an ambulance corps, Dr. Donohue, Dr. Stubbs, Dr. McIntyre and myself representing the Aid Association.

We had a pleasant voyage to Montauk, arriving about four o'clock Sunday afternoon. Dr. Standish and I went ashore and hastened to the camp of General Wheeler, who was at that time in charge of Camp Wikoff. We found the general in the "detention camp," and I presented my letter of introduction from Dr. Bradford. General Wheeler received us very cordially, and praised Massachusetts highly for its part in the war, commending especially the good work of the Volunteer Aid Association. The general then gave me "passes" and a letter to Colonel Forwood, the medical director of the camp. Meeting Colonel Forwood at his headquarters, I explained our errand and plans for carrying it out. We were anxious to receive the sick soldiers the next morning and leave Montauk early Monday afternoon. To this arrangement Colonel Forwood demurred, saying that the soldiers would have to be furloughed, quartermasters must issue more clothing, transportation would be difficult, as most of the cases would require ambulances — in short, that it was an impossibility to have the men ready by the time named. After a little persuasion, however, the colonel consented to make the attempt, and calling the surgeons of his staff together he ordered them to discharge those cases which could be moved. After visiting the hospitals and looking over the cases we were to take with us, Dr. Standish and I left the camp about midnight. Upon reaching the wharf we learned that during our absence a transport had arrived from Santiago, and to make room for her the *Lewiston*, to our great disappointment, had been ordered out into the bay. I should say, in passing, that there was only one dock at Montauk large enough to serve a steamer of the *Lewiston's* dimensions. Procuring a boat we went aboard, and left word with those in charge for an early call. Up bright and early, we ran across a floating dock belonging to the New London steamers, and luckily enough secured it for the *Lewiston*. We had our ship signalled into her new berth and began preparations for receiving our patients. The ladies' saloon of the *Lewiston*, containing thirty-two berths, was selected as the hospital proper, Dr. Donohue having charge, and to this place we assigned our very sick patients. Dr. Stubbs had charge of the upper deck, starboard side, and Dr. McIntyre looked after the upper deck, port side. In accordance with General Wheeler's orders we expected the men at seven o'clock that morning, but ten o'clock having passed with no patients, Dr. Standish volunteered to go to the camp and ask the reason for the delay. Meanwhile I concluded to communicate with General Wheeler by telegraph. The general in reply promised that our patients would soon arrive. General Wheeler kept his word; not long after we saw the ambulances coming over the hill to the wharf, so that shortly after one o'clock we had all our patients safely on board.

With one hundred and nineteen men, we left Montauk about 2 P. M. Monday and headed for New London, to which place we had previously telegraphed for needed supplies. At about six P. M. the same day we left New London homeward bound for Boston. Everything went well until about eight P. M., when the grounding of the ship and sudden stopping of her engines told us something serious was wrong. Rushing out on deck we saw at a glance that the ship had gone ashore in the thick fog and was resting in a dangerous position. The men were assured that no immediate danger threatened, and thereupon kept their places quietly.

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[1] Read before the Boston Society for Medical Improvement, December 5, 1898.

The officers of the steamer, taking the usual precautions, sounded her whistles, burned colored lights and fired the signal gun. In answer to our signals of distress a tow-boat came alongside, and the captain, informing us that we were ashore on the Point Judith Breakwater, offered to tow us around inside of it, where the vessel could be beached. The offer was declined, as seven feet of water in the *Lewiston's* stern had just been reported. Our refusal proved judicious, for, as it appeared later, had we accepted the captain's proposition, serious results would certainly have followed. (Subsequently the owners of the *Lewiston* had her repaired and hauled off the breakwater, but she had to be abandoned almost immediately, in a sinking condition.) Then Captain John Dill came upon the scene with the Point Judith life-saving crew, and to him much praise is due. He suggested that a lighter, which was near by, could be brought around inside the breakwater, the men transferred to it, and then towed to Newport. Thinking his idea an excellent one, we began at once our preparations for moving all the patients. The lighter in place, Captain Dill and his crew commenced building temporary bridges, one from the steamer to the breakwater and one from the breakwater to the lighter. The bridges completed, and Dr. Standish ready with the medical supplies, we transferred the men to the lighter. When at last all was ready, some newspaper men who were with us decided to leave and make for Narragansett Pier. To one of them I entrusted despatches, one for Dr. Bradford, a second to the chief of police at Newport, asking for assistance there, and another to the train despatcher of the New York, New Haven and Hartford Road, requesting that a hospital train of seven cars be ready for us at Newport. Starting from the breakwater there was a tow of seventeen miles before us, but every one felt more cheerful, for by that time the fog had lifted, leaving the sea calm and the night bright and clear overhead. We made Newport in safety, but found no sign of the train we had ordered. I hurriedly telegraphed the train despatcher at Boston and learned that we could not have our train for three hours, as the only available one must come from Boston. The question what to do with our patients, about eight of whom were in a dangerous condition, seemed puzzling, to say the least. I determined, if we must wait, to send the dangerous cases to the Newport Hospital, but some one suggested that we might use the cars in the station for a hospital train, so I immediately telegraphed to Boston asking permission. The reply being favorable we succeeded, with the assistance of the chief of police, and other kind citizens of Newport, in getting the cars ready for the New London train which reaches Newport at 3.30 A. M. The run from Newport to Boston was without incident, the train moving into the station about 5.30 A. M. Tuesday morning. Dr. Bradford was on hand to take charge of the men, and into his care we delivered one hundred and nineteen men in as good condition, I hope, as when received by us at Montauk.

A NEW NEUROLOGICAL JOURNAL. — *L' Intermédiaire des Neurologistes et des Aliénistes*, a new journal of which the title sufficiently indicates the character, is to be published in Paris, by F. Alcan, under the editorial direction of Dr. Paul Sollier. It will be issued in three languages, French, German and English.

THE WORK OF THE MASSACHUSETTS AMBULANCE CORPS ON THE STEAMSHIP "LEWISTON" AND ELSEWHERE DURING THE SPANISH WAR.[1]

BY MYLES STANDISH, M.D., BOSTON.

WHEN the Congress of the United States at the outbreak of the Spanish war passed an act creating a volunteer army of 300,000 men it utterly omitted any medical department except one surgeon for each army corps, division, and brigade, in addition to the three surgeons and hospital stewards provided for each regiment. Apparently no provision was made for enlistment of privates in the medical department for use as nurses or ambulance-corps men. It seemed to be forgotten that there would be either wounded men or sickness to care for. This act prevented the ambulance corps of the Massachusetts Volunteer Militia from entering the volunteer service during the war. When the first call for troops was made the Surgeon-General of the United States Army requested Massachusetts to furnish 135 hospital-corps men and 15 hospital stewards. As I had been commander of the ambulance corps of the Massachusetts Volunteer Militia for nearly ten years, I was detailed by the governor to enroll the men thus asked for. We had many applications by men more or less fitted for such service. These applications included male nurses, cooks, drivers, some medical graduates and many medical students — not a few of them students of the Harvard Medical School. Most of them, with very little training, would have made excellent hospital-corps men. We received more than two hundred and fifty applications, but three days after we had undertaken this work a telegram was received from the Surgeon-General of the Army stating that under the law there was no authority for the organization of such a corps, and directing me to dismiss the men. Some three weeks after this I received from the surgeon-general a request that these applicants be enlisted in the hospital corps of the United States Army, with the promise that they should be discharged at the end of the war. The men by this time had scattered far and wide, and such as could be reached did not take kindly to the proposition. Many of the young men, medical students or others, who would have been glad to have enlisted in the volunteer army, when asked to enlist for three years as a private in the regular army of the United States declined to do so. This was of course natural and entirely to be expected. Some 20 men, nearly one-third of the ambulance corps, however, accepted these conditions and did so enlist; but it is not with what they did, but with what was done by the ambulance corps at home in assisting in the work of the Massachusetts Volunteer Aid Association that we have to do this evening.

You are all familiar with what they did in unloading hospital ships and trains in the city of Boston. In the course of six weeks the whole or details of the ambulance corps were ordered out on eleven different occasions. To these calls the men responded promptly, generally with only a few hours' notice. On one occasion ten men were required at an hour and a half's notice and they arrived at the train promptly, equipped and ready for duty. They not only came promptly but performed their work, which was often very laborious, efficiently and willingly. Of course all this duty was a great interruption in the business of the men and that of their employers. At one time a portion of the men were on duty four days in one week and three days in the following week. As these men are principally clerks and others on salaries, it is gratifying to state here that their employers cheerfully and willingly allowed them to leave their places of business whenever requested, with a single exception — in which case the employé was a young man in a national bank in an adjoining suburban town.

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[1] Read before the Boston Society for Medical Improvement, December 5, 1898.

The most notable work of the corps was that done in connection with the trip and wreck of the steamship *Lewiston*. Twenty of the enlisted men of the corps went on this ship to Camp Wikoff, Montauk Point, to bring to Boston such sick and fever-stricken patients from Massachusetts regiments or others as it seemed best to transfer to Boston hospitals. On the 5th of September we received on the steamer *Lewiston* 119 sick soldiers. These men were delivered by ambulances at the head of a long pier, and a very considerable number, who were unable to walk the distance to the boat, were brought aboard on litters. Their names and organizations were taken by the surgeons in charge, and the men assigned to quarters in the cabins and staterooms of the vessel. The members of the ambulance corps were divided into two reliefs for the care of the sick, and, although for many of the ambulance corps this was a first experience in anything more than the theoretical care of the sick, they did their work promptly and intelligently, winning warm commendation from the surgeons in charge. About nine o'clock that night, in a light fog, the ship ran full speed onto the jagged rocks of Point Judith Breakwater, several miles from land. It is said that a soldier in a battle knows nothing of what is going on except the part taken by himself and by his immediate comrades on either side of him. So, I think, it is in all great disasters of this sort — what any one man knows of what happened is limited to what he himself saw and did. My account, therefore, of this incident is necessarily limited to that portion in which I took part. I was standing on the forward deck at the time of the accident, and when the line of rocks came into view could scarcely believe my eyes. I walked to the bow of the boat to see what we were approaching. As I arrived there and leaned over the rail the ship struck; she was going at full speed, and the bell in the engine-room did not ring until the moment the accident occurred. The force of the blow was very considerable. The men in care of the sick were thrown from their feet, and the ship was pushed some fourteen feet up onto the rocks. The officers of the ship threw a rope over the bow and swung themselves down onto the rocks. It was soon evident that if those of us who were in charge of the sick were to know what had happened we must investigate for ourselves; therefore, I also slid down the rope onto the rocks, and with a lantern investigated the damage. I discovered a large opening through which a very considerable volume of water was rapidly pouring into the ship; meantime a cannon had been fired and whistles blown. Relief soon arrived in the shape of a tug which had been at work on the construction of the breakwater. On this tug came one Captain Dill, a United States inspector of construction for the breakwater. He proved to be just the man for the occasion. Knowing that there was a large lighter a short distance away, which had also been used in the construction of the breakwater, he soon had it brought and placed opposite the ship on the inside of the breakwater. With the lighter came a gang in the employ of the contractor. These men cut a large aperture in the side of the ship near the bow on a level with the main deck. There were on the ship, as I have said, 119 sick men, of whom 60 were physically unable to get up from their bunks and dress themselves. I was told that there was one hundred and twenty feet of water under the stern of the ship and that it was then high tide, and it became a question as to whether we could disembark these sick men before the ship would slide from her position on the rocks and perhaps founder. There was absolutely no confusion. The doctors in charge and the ambulance-corps men on duty all remained with their charges, and worked as rapidly as possible in dressing the sick soldiers. The sickest patients had been placed in the open cabins; those in the staterooms were supposed to be more or less convalescent. When it was determined to disembark the men, I went through the staterooms and directed each man to get up and dress himself, if he could, to gather together his small belongings, to take his life preserver and camp stool and sit in the cabin alongside the door of his stateroom, and to remain there until called. The discipline on the part of these convalescents is well worth mentioning. Although it took the larger part of an hour to carry the articles required aboard the lighter and to take off the sickest men on litters, every time that I looked up onto the saloon floor each man was sitting by the door of his stateroom leaning against the wall, apparently quiet, and I saw no two or three grouped together and talking, or leaving their position to go out and look over the side of the ship to see what had happened. There they patiently waited until called to leave the ship, although the lurching of the vessel must have been anything but reassuring.

When it became evident that the men must be taken off, I saw that it would be necessary to have hot food provided to take with us. Going immediately to the galley, where were a half a dozen colored cooks — some belonging to the vessel, others hired for this special trip — I found them helping themselves to whatever lay about, and raking down the fires preparatory to leaving the galley. I explained to them the necessity of carrying hot malted milk, bouillon, coffee and other articles of food with us, and demanded that they should remain and prepare them. To their credit be it said, they promptly returned to their work and prepared everything ordered without remonstrance or disposition to shirk. I then took the relief of the ambulance corps that was off duty and stripped staterooms and cabins of mattresses, blankets, sheets and coverlets, and had them thrown over the bow of the ship upon the rocks and thence taken aboard the lighter: meantime the contractor's gang and some of the deck hands were attempting to construct a sort of bridge from the opening in the side of the ship to the jagged rocks and thence to the lighter on the other side of the breakwater. By this time a crew of the United States Life-saving Service arrived and immediately took a hand in the work, displaying a quiet efficiency and discipline which won my unbounded admiration. This bridge was constructed of shutters, planks, doors, mattresses and anything else that could be obtained, and was in no way a stable or secure structure, its insecurity being heightened by the constant lurching of the ship, yet over it the men of the ambulance corps carried sixty sick men on litters without accident or incident. The footing was exceedingly precarious, as one plank would be firm and stiff, and the door alongside of it insecure and often at a considerably different elevation. During this disembarkation the men of the Life-saving Service stood at the side or under this structure in most uncomfortable positions, holding it up with one hand and with the other steadying the litters as they were borne past. They did this with such steadiness that I scarcely saw one change his position through the hour or more of disembarkation. After the sick had been taken off the ambulance-corps men transferred to the lighter cans of cooked food, which had been wrapped in blankets in order to preserve their heat. All the medical equipments, bedding and clothing, which had been sent by the Volunteer Aid Association, was also transferred to the lighter, and when all the patients had been disembarked the scene was one of almost theatrical strangeness. On the deck of the lighter the mattresses were placed side by side as closely as possible, and upon each lay a sick soldier carefully wrapped in blankets and other coverlets. The lighter was then towed to Newport and the patients were disembarked on litters with their mattresses and placed in the waiting-room of the Old Colony Steamship Company. A train of baggage and other cars was soon assembled, stripped of its contents by the men of the ambulance corps, and the sick, again carried on litters, were placed on mattresses upon the floors of these cars. The work of getting the patients on the train was lightened by a detail of twenty Newport policemen, who had reported in response to a telephonic message.

The care of the sick on the train during the trip to Boston was one of considerable difficulty. Many of the men were ill with dysentery or diarrheal diseases, which added to the difficulties of the situation; nevertheless, the men of the ambulance corps did the work cheerfully and well, and when the train arrived in Boston and the men had been delivered to the ambulances which the Volunteer Aid Association had in waiting I was much pleased to learn that none of the sick men or any of the surgeons had asked for anything in the way of food, medicine, or other requisite that had not been found to have been brought from the ship and placed upon the train, and also that none of the very ill were apparently the worse for this unexpected experience. The men of the ambulance corps were then dismissed, having had, on an average, less than three hours' sleep in the previous forty-eight hours.

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MASSACHUSETTS VOLUNTEERS AT CAMP THOMAS.[1]

BY J. B. BLAKE, M.D., BOSTON.

On Friday, September 9, 1898, I was requested by the Massachusetts Volunteer Aid Association to find two assistants and go to Camp Thomas, Chickamauga, and to bring home as many of the sick of the 8th Massachusetts Volunteers as were able to travel. I was fortunate enough to secure the aid of Dr. H. J. Perry and Dr. G. F. McIntyre, and we started on the evening of Saturday, September 10th. The Association gave us a complete list of all Massachusetts soldiers who were then in the Chickamauga Hospitals, and Adjutant-General Dalton kindly furnished a document which attested to our official characters, and we departed, anticipating an easy and pleasant journey.

We passed through the mountains of North Carolina by night, and found ourselves in the long, shambling, wooden station of the Southern Railroad at Chattanooga at 6 A. M., Monday, September 12th. Camp Thomas was situated at Chickamauga Park, the site of the battle, and about twelve miles from Chattanooga. Whatever criticism may be made of the water and the soil, certainly none could be offered concerning the beauty and the appropriateness of the position. On one side were the towering heights of Lookout Mountain, stretching for miles and miles towards the south, on the other the wooded hills of Missionary Ridge, and, behind, the portals of the great cemetery. At almost every point of the compass the eye rests upon objects which must have been a potent inspiration to the volunteer. The city of Chattanooga itself was at this time a most interesting study. Four months before, with a population of perhaps 45,000, it was by no means in a flourishing condition. Suddenly an army amounting at one time to 55,000 men — considerably larger than the city itself and three times the size of the army at Santiago — was dumped at its door, with all the needs that such an assemblage possesses, and with ready money to satisfy those needs. Business men of the city assured us that from $5,000,000 to $7,000,000 poured into Chattanooga in those three months, with an average profit of perhaps 50 per cent. — no discount for patriotism. As a result, the city had a boom somewhat resembling that which now and then strikes a Western mining camp.

We now began to realize for the first time the effect of location upon the interest centring in the war. In Boston, forty hours before, the thought and talk and newspaper headings were about the navy and its doings, and the men in Cuba. At Chattanooga the navy was seldom a topic of conversation, and the army was supreme, particularly that part of the army which was, or had been, at Camp Thomas. Even the soldiers at Santiago were regarded as of rather secondary importance, and long columns of controversy about drinking-water and camp supplies and the advantages which Tennessee possessed over Kentucky filled the papers. And, strangest of all, we discovered a regiment of Rough Riders, to whom Teddy Roosevelt's name was only a collection of letters.

The problem before us was to find the Massachusetts soldiers, obtain furloughs for all able to travel, and then make arrangements for private cars and for proper food on the return trip. This seemed simple enough, but two difficulties immediately presented themselves: (1) to get the cars, and (2) to find the men. About 45,000 soldiers had been moved in the three weeks preceding our arrival, and the few remaining were going at the rate of 3,000 a day. Every available car for thousands of miles had been sent away, and for twenty-four hours it was impossible to get a car of any sort, or indeed to get news of one. The agent of the Southern Railroad was very kind, and finally succeeded in finding one for us. We had hoped for a dining-car, but this was entirely out of the question, and we were finally glad to get a buffet, which was stocked with extra stores.

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[1] Read before the Boston Society for Medical Improvement, December 5, 1898.

The second difficulty presented itself when we went to Camp Thomas itself, three-quarters of an hour by rail from Chattanooga. We found, not a large open field, like an enlarged Framingham muster ground, but a good-sized territory of wooded, rolling country, about ten miles long by six wide, covering an area about one-half the size of the District of Columbia. This was the first surprise. The next was to find that the three hospitals at which the Massachusetts men were stationed were from one and one-half to three miles apart, and that an amount of confusion and ignorance existed in regard to them that makes one shudder to think what the condition must have been at Santiago. We were assured by several officers that the Third Division 1st Corps Hospital was already disbanded, and that the Massachusetts men were distributed to the Leiter and Sternberg Hospitals. Arriving finally at the Sternberg, we were greeted kindly by Major La Seur, who told us that he had but three Massachusetts men, and only one of them could travel. We then took a drive of one and one-half miles to Leiter, over the dustiest of roads, to find that only a single Massachusetts man was there (whom we afterwards brought). At the Leiter we met Lieutenant-Colonel Hoff, a courteous gentleman, who explained to us that the 1st Corps Hospital was not disbanded, that it had most of the Massachusetts men, and that it was three or four miles back in the direction we had just come. Retracing our steps, or, rather, bringing a team, we finally arrived there, and found that it contained about thirty-five Massachusetts men, and a complete list of all those able to travel would be ready on the following morning. After looking through the tents and chatting with the surgeons, we returned to Chickamauga tired and dusty, and impressed with the fact that the amount of territory comprised in Camp Thomas, large as it was, was still small in comparison to the amount of confusion that existed with it.

While on the way to the 1st Corps Hospital we passed the 9th Michigan Volunteers, in full marching order, proceeding on foot to the station to go home on furlough. It was a most interesting sight. The men were in high spirits, and tramped along in the heat unmindful of the heavy kits. There was much clanking of canteens and guns, and much of singing and talking, which the irregular route step only emphasized. The officers allowed a good deal of freedom, and some of the men had new-blown cotton blossoms in their caps. Many looked sick and tired, and seemed as if the three miles in the dust and heat to the station would try their endurance severely; but the thought of home is a wonderful stimulant. The long line swung slowly up the rolling hills and disappeared over the top like a huge brown snake. Later, on our way to the city, we were stopped by the train containing this regiment. It was by far the longest I had ever seen, consisting of thirty-one passenger-cars and a sleeper, and it broke in two on a slight grade ahead of us and delayed us an hour. The men, however, were still laughing and singing.

On Tuesday the buffet car was secured, and the Southern Company agreed to send it out to Camp Thomas, haul it to the Leiter Hospital, where the one Massachusetts man in that hospital was to be put aboard, and then bring it back to Battlefield station, the principal station of the camp, where the other men would embark. In the morning Dr. Perry went again to the 1st Division Hospital, ascertained the number of men who were able to go, and arranged with Surgeon Myers for their transfer in camp ambulances from the hospital to Battlefield Station. The car thus loaded was to be hauled to Chattanooga in time to catch the express which passed through at 3 o'clock Wednesday morning. The reason for this early start was that this train alone made through connections for Boston without delay or change of cars, and this route was the shortest possible one.

Every sick soldier is furloughed before being allowed to move from his hospital, and the governor furnishes transportation with the furlough. In the case of sick men the rule is that they shall be sent home by the shortest possible route. Taking it for granted that this would be properly done, and knowing that the Southern was the shortest and most direct road, I did not oversee the routing of the furloughs. This was a bad mistake, and almost upset the entire plan. A civilian clerk did the routing, and made out the transportation for another road, one hundred and twenty miles longer, which would have required eight or ten hours more by rail, and this was only discovered as the soldiers were unloaded from the ambulances and ready to go aboard the car, and when the offices of the commissary department were closed. The alternative seemed to be either to go by a long route, or to put the soldiers in the car and hold them over for another day. Finally, Mr. Billufs, the Southern Transportation Agent, brought me to Lieutenant-Colonel Lee, the head of the commissary, who, after a long and careful examination of the whole case, on his own responsibility, changed the routing entire, and allowed us to depart with our men a little before midnight. At Chattanooga we took on board extra milk and soft foods and medicines, and were attached to the Northern express and started homeward at 3 A. M.

We had altogether twenty men, most of them convalescents from malaria and dysentery, with a few typhoids. The lists, giving condition and treatment at the field hospitals, were for some reason not delivered to us, and we had to take the statement of the soldiers themselves on questions of diet. To be on the safe side, we gave them only milk and liquids, with a few crackers, for most of the first day, and kept them in the bunks as much as possible; but towards evening they became so hungry, and protested so strongly that the diet at the hospital had been far more generous than that on the train, that we allowed them soup and a little chicken, marching them into a dining-room at one of the stations and watching them as they ate. The amount of milk they consumed was astounding, and we were continually telegraphing ahead for supplies to meet the train, or borrowing from what we found in the baggage car. At times we were disappointed. We telegraphed to Biltmore, where George Vanderbilt's large estate is situated, only to find that the telegram had not been delivered, and that the milk which we needed very much was not forthcoming. Within the first twenty hours the men drank more than twelve gallons of milk, and simply exhausted the supply of suitable food in the buffet. The problem of satisfactorily feeding twenty convalescents from a buffet car in the South is not so simple as it at first appears. It was extremely difficult to keep the soldiers from eating anything and everything they could lay their hands upon, and lunch counters had to be watched at the stations, and finally the train boy excluded from the car, in order to keep indigestible foods out of their reach, and, in spite of our caution, I fear at times they were allowed too much.

An illustration of what may happen when sick soldiers travel home alone occurred on the day after leaving Chattanooga. We found a convalescent from the 8th who was furloughed after malaria and dysentery, from Lexington, Ky. He was in one of the forward cars on our train, and was just ordering lunch as I came through. It consisted of a soft-boiled egg, toast and weak tea, and ended with a preserve of sugared figs with cream. I suggested that this was rather tempting Providence; but the young soldier refused to sacrifice the figs, and politely remarked that he was not under my authority. So I left him, saying I should come when he sent for me. He sent in a hurry in about two hours, and in return I sent him to the Boston City Hospital that evening for two weeks.

The only other incident on the homeward trip was the discovery that our buffet car was one and one-fourth inches too high for the overhead bridges of Connecticut and Massachusett, and on account of this small margin we were compelled to change cars at Jersey City. Up to that time we were not aware that only cars of a certain prescribed size could travel east of New York. This seems to be an unusual and rather unexpected relic of New England narrowness.

We arrived in Boston at 9 P. M., September 15th, one hour behind time, and having covered about 3,000 miles in five days. Doctors, ambulances and a crowd awaited us, and we saw an excellent demonstration of the solution of the problem of receiving and distributing sick soldiers in Boston.

The hospitals at Camp Thomas as we saw them were clean, well supplied, and not overcrowded. The Leiter Hospital, which was situated in a large hotel, might be compared favorably with most city institutions, and the field hospitals, so far as a rapid examination went, were in a satisfactory condition.

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THE RECEPTION OF THE SICK SOLDIERS IN BOSTON.[1]

BY F. G. BALCH, M.D., BOSTON.

The reception and transportation of soldiers here in Boston was an entirely new problem to us, and as the system which we finally used was the outcome of our experience with several shiploads and trainloads of sick men I shall not try to speak of each occasion on which we had such work to do, but of the plan which we finally found most satisfactory in use. When Dr. Bradford was notified that men were to be sent to Boston or were already on the way there several questions arose which had to be solved promptly: (1) How many men were coming? (2) What was their condition? Here we recognized two classes, that is, those who could sit up and those who must go in ambulances. These classes were again subdivided into those who could bear transportation some distance and those who must be taken at once to the nearest hospital. (3) What could we get to transport them in? (4) How many could each of the various hospitals in and about Boston take in?

To take up the first question: We knew how many the *Bay State* could carry, and we were sure that she would have her full complement, that meant from 100 to 130 when we had to meet her. In the case of the *Olivette*, the *Relief* and the different trains, Dr. Bradford was able to find out by telegraphing, though in some cases the number we were to expect was a little indefinite.

The matter of the men's condition was a harder thing to find out. We knew in a general way that a load from Santiago meant a much larger proportion of very sick ambulance cases than a load from Porto Rico or Montauk, but it was usually impossible to tell exactly until the boat got to quarantine and Dr. Bradford had a chance to telephone us.

Boston is well supplied with means of transportation of sick soldiers, and the ambulances can be gotten together almost as rapidly as the fire apparatus. We never used quite all the ambulances which we could have had, but we had a goodly array on several occasions. The police ambulances have a single large stretcher in them, but that can be taken out and by laying a mattress in them they can carry two men each. In the case of the *Bay State* we did not move some of the sickest men at all, but they were sent to the hospitals on the frames which were the beds on the boat. The City Hospital ambulances also carry two, and have two very convenient short canvas stretchers in each ambulance. The patient is put into the ambulance on these and they remain under him. This saves two moves. The Massachusetts General Hospital ambulances carry two men, by using a mattress, but did not have the canvas stretchers. The Homeopathic ambulance carries two on stretchers. The Marine Hospital and Naval Hospital ambulances each can take two on a mattress, but did not have the canvas stretchers. For patients able to sit up we used the large diligences of the Armstrong Transfer Company and of the Boston Cab Company. The former carry comfortably about a dozen and the latter a few less. They ride rather hard unless pretty well filled. We used hacks to a limited extent, especially for the men who needed an easier running conveyance than the larger vehicle, and when we did not have a full load for one of the larger wagons. There was room for one man in the ambulances on the seat beside the driver. The Long Island Hospital cases were sent down on the *J. Putnam Bradlee*.

The City, Massachusetts General and Carney Hospitals all had tents in addition to the wards, and to these three hospitals and the Homeopathic Hospital most of the men were sent. The Long Island and Marine Hospitals also took a good many men. St. Margaret's and the Charity Club Hospitals offered to take soldiers, as did also the Eye and Ear Infirmary, but we did not have to call upon them. In addition to these near hospitals many others in the surrounding towns offered to take men, and many patients were sent to them after a few days in Boston. We had a list of thirty-eight hospitals which could and would take soldiers, and there were several other institutions where men could have been sent in an emergency. By the time the boats got to the wharf we knew just where we could place any number of men they could have on board, and usually two or three times as many as they could carry. We were caught unawares once, when the *Relief* came by quarantine without stopping, and the first we knew of her she was at the Plant Line dock. After that we were notified by the Chamber of Commerce, and knew as soon as the boats entered the harbor. Dr. Bradford went down on the *Vigilant* every time, except in the case of the *Relief*, and boarded the vessel at quarantine. In the meantime he had notified whoever was in charge of transportation, and that man had gotten his assistants together, either at the Volunteer Aid Association or at the wharf where the vessel was to dock. Each man had a list of people to be notified, such as the police, the ambulance corps, the hospitals, the cab company, the wharf, etc., and as soon as the boat was reported all of these people were warned to hold themselves in readiness. We telephoned to them again when we knew the hour the boat was expected at the wharf. The crowd of friends at the wharf was a more difficult problem, but with an efficient sergeant of police and a rope to keep the crowd back it was much simplified. No one but reporters, assistants and friends of sick soldiers should be allowed on the wharf at all, but this is a hard order to carry out. In the yard the ambulances and wagons were backed into position to take patients at once, and so that you could send a wagon out from any part of the line without disturbing the rest. No private carriages should be allowed in the yard. The ambulances were drawn up nearest the gang-plank, so as to make a short carry for the ambulance-corps men. There should be two mattresses on the wharf, so that in making the transfer from the ambulance-corps stretcher to the ambulance stretcher the patient need not be laid down on the board floor.

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[1] Read before the Boston Society for Medical Improvement, December 5, 1898.

If we knew there were 100 men coming, and the City and Massachusetts General Hospitals could each take 40, and the Carney Hospital could take 20, we made out cards for each hospital with numbers running up to these figures. These cards, which were of different colors, had the name of the different hospitals printed on them. In this way we had an exact and easy method of knowing at a glance how many men we had sent to each hospital. The colors gave a quick means of knowing which hospital a man was to go to, and facilitated the work of the ambulance corps and the man in charge of transportation. A man on one side of the gang-plank gave out the cards, while a man opposite him took the patient's name, and put down which hospital he had been sent to, so that we could have it for the record. For this work of assignment two men are needed, and a third should have charge of transportation. There should be at least two assistants in addition, whose duty it should be to run between the man in charge of transportation and the man who is making the assignment, in order that the wagons may be filled to best advantage. The ambulance corps was very useful and efficient in carrying the men from the boat to the conveyances, and in some cases in riding to the hospital with the very sick cases. In the case of the *Relief* the doctor in charge was anxious to have all those who were to be sent to one hospital sent there before we began on men for another hospital. This has advantages as well as disadvantages. It is simple, but made a considerable wait for carriages when we had to send several on such long trips as to the Carney or Marine Hospitals. On other occasions all the ambulance cases were sent first, or all the convalescents first. The transportation is quicker if the two classes of cases can be sent alternately, so that the wagons have a chance to get back. All the ambulances were used without regard to the hospital they came from. In all nearly 1,000 men, some of them desperately ill, were taken to the hospitals, and without a death in transit. The best record for speed was made in the case of the *Bay State's* second trip. There were 99 men, though few ambulance cases, and the whole of them were on their way to hospitals in less than an hour after the boat tied up to the wharf.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

REGULAR Meeting, December 5, 1898, the President, DR. R. H. FITZ, in the chair.

The discussion of the work of the Massachusetts Volunteer Aid Association in the Spanish War was continued.

DR. E. G. BRACKETT read a paper describing the

WORK OF THE MASSACHUSETTS VOLUNTEER AID ASSOCIATION IN SANTIAGO.[1]

DR. W. H. PRESCOTT read a paper entitled

CAMP WIKOFF, MONTAUK, L. I.[2]

DR. JAMES BOOTH-CLARKSON gave a

GENERAL REPORT.[3]

DR. T. B. SHEA gave a description of

THE SHIPWRECK OF THE STEAMSHIP "LEWISTON."[4]

DR. MYLES STANDISH read a paper entitled

THE WORK OF THE MASSACHUSETTS AMBULANCE CORPS ON THE STEAMSHIP "LEWISTON" AND ELSEWHERE DURING THE SPANISH WAR.[5]

DR. J. B. BLAKE read a paper entitled

MASSACHUSETTS VOLUNTEERS AT CAMP THOMAS.[6]

DR. F. G. BALCH read a paper entitled

THE RECEPTION OF THE SICK SOLDIERS IN BOSTON.[7]

DR. FITZ asked Dr. Burrell to close the meeting by telling the Society of what became of the hospital ship.

DR. BURRELL spoke as follows: As the hospital ship *Bay State* continued to do its work through its successive voyages it was finally determined to offer to the Government the vessel for a minimum price. A committee composed of various officers of the Association waited upon Mr. Alger and General Sternberg, who, when told of the offer to transfer the ship, fully equipped, for $100,000, were very much pleased. This sum of money had to be paid out of the war fund controlled by the President, and a committee of experts, composed of Messrs. Kirby and Clarke, came to Boston to inspect the vessel. She was carefully examined by these gentlemen, who told me that they were extremely interested in the details of her construction and equipment. The arrangement of berths for patients challenged the admiration of Mr. Clarke, who was at the time in the process of constructing and equipping a large number of vessels for transport service for the United States Army.

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[1] See page 81 of the Journal.
[2] See page 82 of the Journal.
[3] See page 84 of the Journal.
[4] See page 89 of the Journal.
[5] See page 90 of the Journal.
[6] See page 92 of the Journal.
[7] See page 94 of the Journal.

The ship was very interesting and instructive to them, and it has seemed to me that the Government was peculiarly fortunate in securing a vessel which cost approximately $175,000 for $100,000.

As a hospital ship she was complete in every detail. She did her work without any break-down in her equipment or her medical department. It is believed that she carried more patients for a given length of time, per tonnage, than any other hospital ship.

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THE AMERICAN PHYSIOLOGICAL SOCIETY.

Eleventh Annual Meeting, December 28, 29 and 30, 1898.

The eleventh annual meeting of the American Physiological Society was held in New York, on December 28th, 29th and 30th. The sessions of the first day were held at the College of Physicians and Surgeons, those of the second day at Schermerhorn Hall, Columbia University, and those of the third day at the Physiological Laboratory of the University and Bellevue Hospital Medical College. At the session of December 28th the following communications were presented and discussed:

ON EPINEPHRIN, THE ACTIVE PRINCIPLE OF THE SUPRARENAL CAPSULE, AND ITS COMPOUNDS.

Prof. J. J. Abel (Johns Hopkins): This substance, having the formula $C_{17} H_{15} N O_4$, is a grayish powder, resembling in a great many of its reactions the alkaloids. The free base prepared at high pressure is not active in affecting the beat of the heart and blood pressure, and its salts are but slightly so; but the free base prepared at low pressure is very active, as are its salts, the benzoate, picrate and sulphate — the last being most pronouncedly so. Future investigators may experiment with the active principle uncontaminated; the aqueous extracts of former investigators have been mixtures, and therefore uncertain in their action. One source of inconvenience and possible source of error encountered by those who worked with this gland is that the extracts are very prone to become oxidized. The theory that pyrocatechin is removed normally from the blood by the suprarenals, and when not removed oxidized and bronzed the skin, as in Addison's disease, is disproved by the author's work. The glands were carefully examined for pyrocatechin, and none was found.

THE ACTION OF SUPRARENAL EXTRACT ON THE MAMMALIAN HEART.

Dr. Geo. B. Wallace and **Dr. W. A. Mogt** (Ann Arbor): The dog's heart was used in the experiments, and tracings were taken directly from the heart by means of a modified Roy and Adami myocardiograph. It was found that the suprarenal extract stimulates the vagus centre, thus inhibiting the heart. It produces also a direct stimulation of the heart muscle, resulting, when the vagus influence is removed, in an increase in the force and frequency of its beat. Accompanying the heart action there occurs a rise in the systemic blood pressure, due to the contraction of the arterioles. The pressure in the pulmonary arteries, however, is not raised, these vessels not being acted upon as are the others.

ON THE CHEMISTRY OF THE MELANINS.

Dr. Walter Jones (Johns Hopkins): Pigment from the skin was the source of the melanins studied. It was found that by an extreme process of hydrolytic cleavage, acting upon these melanins by concentrated potassium hydroxide for a considerable period of time, a melanin was obtained resembling the original in degree of pigmentation but containing no sulphur.

SOME FACTS RELATING TO THE MELANINS.

Prof. R. H. Chittenden, Ph.D. (Yale): A preparation of antialbumid was subjected to a strong process of hydrolytic cleavage by the long-continued action of a 10-per-cent. sulphuric-acid solution. As a result a melanin was obtained containing a small percentage of sulphur. A proteid of very different nature, hemipeptone, was then acted upon in the same way with a simular result. It is therefore proved that the origin of the melanins is a proteid one.

ON THE PRESENCE OF CHOLINE AND NEURINE IN THE INTESTINAL CANAL DURING ITS COMPLETE OBSTRUCTION.

Dr. Beattie Nesbitt, of Toronto: Lecithin contained in the yolks of eggs was fed to dogs in which the intestine was ligated a short distance above the ileo-cecal valve. As a result of saponification lecithin may be broken up into choline, glycerine, phosphoric acid, stearic and palmitic acids. Choline, which is ethylol-trimethyl-ammonium hydroxide or bilineurine, was found to have been present in this experiment. Choline is a strong base which by a process of oxidation may be converted into muscarine. Choline may also, by a process of putrefaction, be converted into neurine, which is trimethyl-vinyl-ammonium hydroxide. Neurine is a base very similar to choline and of extreme toxicity. Neurine was also found in some of these experiments. This is of practical importance in cases of paralysis of the intestinal wall, or in the presence of strangulated hernia or other obstructions, when lecithin-containing food is being given, in view of the toxic constitutional disturbances produced under the above conditions.

Prof. W. T. Porter (Harvard) reported and demonstrated some of his later

EXPERIMENTS ON THE MAMMALIAN HEART.

These tend to prove that the co-ordinate contraction of the ventricles requires for its accomplishment the presence of neither nerve cells nor nerve fibres passing to the muscle cells; simple muscle continuity is sufficient. The synchronism of the ventricles is due not to nerve impulses coming from the auricles, but to muscular continuity of the two ventricles.

DIRECT AND REFLEX ACCELERATION OF THE MAMMALIAN HEART.

Dr. R. Hunt (Johns Hopkins): The experiments were performed upon dogs, cats and rabbits. The question of the tonic activity of the accelerators, about which the views of physiologists differ widely, was discussed. The results of these experiments show that in the above animals the accelerators are almost always in a condition of tonic activity — in fact, are much more constantly so than are the inhibitory nerves to the heart. When the accelerators are stimulated with an electrical current which causes a maximum acceleration the heart soon returns partially to its previous rate. The cause of this decrease in the rate of fatigue is twofold: first, there is a local loss of irritability of the nerve at the point stimulated; secondly, there is a genuine fatigue in the heart itself. If the vagi are in tonic activity or if they are stimulated simultaneously with the accelerators, the latter cause less fatigue, that is, the vagi have a protective influence over the heart. Reflex acceleration is due to inhibition of the tonic activity of the vagi.

As a result of these experiments it was thought that there are in most sensory nerves two sets of fibres, stimulation of one of which causes increased activity of the cardio-inhibitory centre and so reflex slowing, while stimulation of the other set causes inhibition of this centre and so reflex acceleration.

ON THE CAUSES OF THE ORDERLY PROGRESS OF THE PERISTALTIC MOVEMENTS IN THE ESOPHAGUS.

Dr. S. J. Meltzer, of New York: Mosso states that division of the esophagus does not prevent the progress of the peristalsis in the lower part and draws the conclusion that the advance of the peristalsis is of central origin. This is directly opposite to the statement of Wild; the latter claimed that the peristalsis advances only to a cut in the esophagus, which indicates that the progress depends upon a peripheral stimulus. Meltzer showed that both statements are correct, inasmuch as Wild experimented on animals under deep anesthesia, in which case the central advance of the impulse is abolished and only the direct reflex from the esophagus itself is left, while Mosso's animals were under such light anesthesia that the progress of the impulse within the centre of deglutition was not impaired.

AFTERNOON SESSION.

The afternoon session of the first day was devoted chiefly to showing new apparatus and new methods of work.

Prof. G. C. Huber (Ann Arbor) exhibited

METHYLENE-BLUE PREPARATIONS OF SENSORY NERVE ENDINGS IN TENDON — GOLGI'S TENDON CORPUSCLES.

Prof. W. T. Porter (Harvard) gave a demonstration entitled

THE CO-ORDINATION OF THE VENTRICLES.

Prof. F. S. Lee (Columbia) demonstrated

A SIMPLE ONCOMETER.

Prof. W. T. Lombard (Ann Arbor) gave a description of

AN IMPROVED FORM OF ELLIS'S PISTON-RECORDER.

Dr. E. W. Scripture (Yale) read a paper describing

NEW LABORATORY APPARATUS.

Prof. W. H. Howell (Johns Hopkins) gave a description of

A CONVENIENT FORM OF NON-POLARIZABLE ELECTRODE.

Dr. C. C. Stewart (Columbia) exhibited

A SIMPLE ETHERIZING BOTTLE.

Prof. F. S. Lee (Columbia) exhibited and described

A NEW RESPIRATION APPARATUS.

SECOND DAY.

On the forenoon of the second day a joint meeting of the American Physiological Society and the American Psychological Association was held. The papers that were presented were such as would interest the two groups of scientific workers in attendance.

Prof. J. McK. Cattell (Columbia) gave an exhibition of instruments used for the study of movement and fatigue.

Prof. F. S. Lee (Columbia) spoke upon

THE NATURE OF MUSCLE FATIGUE.

Experiments upon the frog, turtle and cat showed that the course of muscle fatigue in these three species differs, the one element common to them all being a progressive decrease of the lifting power of the muscle. Fasting does not influence the course of fatigue except to hasten it slightly. On the other hand, potassium lactate is sufficient of itself to put the muscle in a fatigued condition. The inference is that the main cause of normal muscle fatigue is poisoning by fatigue-substances, and not the consumption of contractile substance. Fatigue is an intermediate phenomenon, appearing during continued muscle activity between the state of freshness and the state of exhaustion. Its significance seems to be that of a protection against the latter serious condition.

Professor Münsterberg (Harvard) discussed

THE PHYSIOLOGICAL BASIS OF MENTAL LIFE,

maintaining that physiology and psychology are distinct sciences, each having its subject matter and its own methods.

Professor Huber (Ann Arbor) reported his

OBSERVATIONS ON THE INNERVATION OF THE INTRACRANIAL VESSELS.

In the pia mater of the dog, cat and rabbit two kinds of nerves were found, sensory nerves and vasomotor nerves. The sensory nerves accompany the larger vessels of the circle of Willis and its branches. They terminate, after repeated branching, in an end-brush situated mainly in the adventitia of the pial arteries and in the surrounding connective tissue. The vasomotor nerves were found in the form of a perivascular plexus of non-medullated nerve fibres. That they terminate in the muscular coat of the pial arteries and may, therefore, be looked upon as vasomotor nerves, was determined in pial tissue stained in methylene-blue. In the cranial dura mater nerves similar to the pial ones were observed.

Prof. G. T. W. Patrick (Iowa) read a paper on the

CONFUSION OF TASTES AND ODORS.

Numerous experiments were performed upon a subject having complete anosmia. The influence of sight in recognizing articles of food was taken into consideration, and this factor eliminated by blindfolding the subject. The capability of discernment by this and other subjects of the feeling of the various food stuffs in the mouth by the sense of touch was eliminated by giving all the solid substances in a finely divided state, and all substances were given at the same temperature. It was found that in the anosmic subject as the result of the exercise of the sense of taste alone but several different substances were capable of recognition.

Numerous normal subjects were experimented upon under these same conditions. The eyes were blindfolded, and the food was given in the same form and at the same temperature. When in these instances, after having plugged the nose, variously flavored substances were given, the same inability to describe more than a very few became manifest. When the senses of touch, in the mouth, of the appreciation of temperature and of sight were allowed to become active, singly or together, the faculty of discernment of different substances was surprisingly increased, and the greatest augmentation of this faculty of discernment occurred when the sense of smell was allowed to become active. It is evident, therefore, that for the full appreciation of that faculty commonly called by us taste the true sense of taste is a relatively unimportant factor; and that to convey those impressions to us, which were usually considered to be a result of the exercise of the functions of taste alone, there must be exercised in conjunction with this sense the senses of sight, smell, touch and appreciation of temperature, singly, or, to produce the most complete effect, together.

(To be continued.)

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Recent Literature.

Guide to the Clinical Examination and Treatment of Sick Children. By John Thomson, M.D., F.R.C.P. (Edin.), Extra Physician to the Royal Hospital for Sick Children, and Lecturer on the Diseases of Children in the School of Medicine of the Royal Colleges, Edinburgh. With fifty-two illustrations. Edinburgh: William F. Clay. 1898.

This excellent book of about three hundred pages is worthy of the highest commendation. It is intended, as the author states, to be introductory to the study of disease in children.

With this end in view it deals essentially with the rudiments of pediatrics. Beginning with the important parts of anatomy and physiology connected with early life and discussing the teeth and their development, the author devotes over a hundred pages to the methods of clinical examination in health and in disease, the article and its excellent illustrations of physiognomical diagnosis being especially noteworthy and interesting.

Hardly in accord with the very advanced and practical view which the author takes of infant feeding are the statements that in strong infants dilutions of milk with water varying from three-quarters for the first six weeks up to one-half in the fourth or fifth month can often be used.

To use such percentages as fat 0.90, sugar 1.05, and proteids 0.90 even in the first six weeks of life is now well known to frequently lead to malnutrition, even though the infant be strong at birth.

The chapter on Mental Deficiencies with its illustrations of the types of imbecility and idiocy is concise and instructive.

The illustrations and type of the book are clear and attractive.

The Medical News Pocket Formulary for 1899. Containing sixteen hundred prescriptions. By E. Quin Thornton, M.D., Demonstrator of Therapeutics, Pharmacy and Materia Medica in the Jefferson Medical College, Philadelphia. In one wallet-shaped volume, strongly bound in leather, with pocket and pencil. Philadelphia and New York: Lea Brothers & Co.

This pocket formulary will be valuable to the young practitioner not only because of its richness in prescriptions but also on account of the many useful hints in treatment other than by drugs. These hints, which follow the prescriptions, are given under the head of Indications and add immensely to the worth of the volume. The book is compact, attractive and well arranged, and is sure to make many friends. Even those physicians prejudiced against books of this type will be forced to admit the many merits of the Medical News Pocket Formulary.

An American Text-Book of the Diseases of Children. Including special chapters on Essential Surgical Subjects: Orthopedics, Diseases of the Eye, Ear, Nose and Throat, Diseases of the Skin, and on the Diet, Hygiene and General Management of Children. By American teachers. Edited by Louis Starr, M.D., Consulting Physician to the Maternity Hospital, Philadelphia, late Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania, Member of the Association of American Physicians and of the American Pediatric Society, Fellow of the College of Physicians of Philadelphia, etc., assisted by Thompson S. Westcott, M.D., Instructor in Diseases of Children, University of Pennsylvania, Visiting Physician to the Methodist Episcopal Hospital, Physician to the Dispensary of the Children's Hospital, Fellow of the College of Physicians of Philadelphia, and Member of the American Pediatric Society. Second edition, revised. Philadelphia: W. B. Saunders. 1898.

The second edition of Dr. Starr's large work, containing articles by sixty-five American physicians, comes to us showing an increase of fifty-four pages on the original eleven hundred and ninety. The book has already been so thoroughly reviewed in its different parts in the former edition that we shall not repeat the criticisms for and against the utility as a text-book of such a mass of material compiled by such a number of writers. We note some excellent additions to the text which bring the work more into line with the latest investigations in pediatrics. Of these a short and concise article of Dr. Westcott's on Modified Milk and Percentage Milk-Mixture, is especially worthy of mention, as is the article on Lithemia, by Dr. B. K. Rachford. An article on Orthopedics by Dr. James E. Moore has been added to the first edition, but it is of course questionable whether such a large field as is now embraced by this important subject can be spoken of with benefit in twenty-six pages.

The articles on Typhoid Fever, Rubella, Chicken-pox, Tuberculous Meningitis, Hydrocephalus and Scurvy have been rewritten. Many of the articles have been revised and brought up to date; thus notably the treatment of diphtheria by antitoxin has received recognition.

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TEACHING BY THE LECTURE.

At the last annual meeting of the Massachusetts Medical Society President Eliot, of Harvard University, remarked in the course of his speech that "there were still a few lecture-rooms left at the medical school." How this remark was meant we do not know, but it was taken as a witticism by the audience, which evidently saw in it a reference to the decline of the lecture-room as in itself a place for instruction in medicine. Whatever the merits of the case may be, the fact is unquestioned that the bedside or the patient brought from the ward, the laboratory and laboratory methods are rapidly usurping the place formerly held by the didactic lecture, so that now a lecture without accessories in the way, at least, of diagram and illustration is a rarity. The reasons for this are not far to seek; they are, essentially, that medicine has come to be regarded as a practical science, knowledge of which is to be obtained by each individual for himself, and that, therefore, the student to learn does not so much need the opinions of others as the cultivation of the evidence to be derived from his own senses; his knowledge, to be of value, must come at first hand. Acting on this general principle, the essential correctness of which no one will be disposed to question, a transformation has come over our methods of teaching, as shown notably by the decline of the didactic lecture, and the substitution of more direct means of instruction.

It is not our present purpose to discuss the merits of this latter system; they are unquestioned and mark an enormous step in advance, but is there not a certain danger, as in all useful reforms, that we may go too far and underrate a means of instruction, which may still have much to commend it, even in our present changed conditions? To a casual observer it seems clearly apparent that the medical lecture is usually misapplied. It too often deals with subjects which are totally unfit for such a method of presentation; it describes conditions and relations which are infinitely better demonstrated to the student; no lecturer, however skilled, can hope to describe a condition or an object in so vivid a way that the student will carry away as clear a mental picture as if he actually saw and felt and apprehended by his own senses the condition or object described. Through the repeated attempt to continue this form of lecture, not only do the students not learn, but the whole lecture system is receiving its death-blow. It is misdirected effort to attempt the regeneration of the lecture system on any such line as this. Nothing has been more clearly demonstrated in the last few years than the futility of the merely descriptive lecture; hence, as a perfectly natural consequence, we have seen grow up a system of lectures so modified by extraneous aids, as, for example, demonstrations and the like, that the dignity of the lecture in itself has been totally lost.

To what, then, is all this leading? There are two alternatives: either to give up the didactic lecture wholly, or to so readjust the teaching that it may again have its proper and legitimate place in the course of study. As in many other matters certainly here a readjustment is imperatively needed. A clear distinction should be drawn between those subjects which are best taught by demonstration and personal work, and those in which such a method is not available. This has never been systematically done, even in our most progressive medical schools, and the result is a continually growing arraignment of the lecture, as an effete method of instruction. For example the *Philadelphia Medical Journal* in a recent issue remarks editorially: "The didactic lecture is a survival of preprinting days, when knowledge was necessarily transmitted by the spoken word. But, surely, induction must now govern our knowledge, the clinics teach diagnosis, the laboratory determine all theories and the post-mortem end controversy. The summarization of knowledge exists in a thousand text-books, making the old-time didactic lecture a relic of an outlived age." This expresses admirably a certain nihilistic point of view, which apparently is now much in popular favor. No doubt the "old-time didactic lecture" is "a relic of an outlived age," but that certainly is no argument against the didactic lecture, as such. On the contrary, just here we think lies its opportunity for the future: to relinquish its former method and to devote itself solely to its proper field in a system of liberal medical education. This field lies in a correlation of the various branches of medical science, a survey of the relationships of facts to theories in any given branch, and a philosophical view of the development of medicine at large, as well as in its specialized fields. In our devotion to facts, there is danger that we may lose sight of principles, which alone make the facts intelligible. What the medical student misses is a clear exposition of the fundamental laws, upon which the endless details he is called upon to study are based. He is too apt to leave a course at the end of the year burdened with a whole storehouse of facts, but with the vaguest possible idea of the true meaning of those facts, both for the particular subject studied and also for the broad field of medicine of which they form a small part. With the growth of specialism this tendency is constantly increasing. Each instructor is bent upon showing the importance of his subject, rather than upon developing it before the student with a view to its relationship to other subjects. The student's whole view is thereby distorted, the degree of distortion depending largely upon the personal popularity and instructing ability of the teachers in the various departments. Any one who has had his ears open must frequently have heard medical students speak of anatomy or physiology or pathology as a matter quite without interest to them, when once the examination books have been handed in. It is only later that experience begins to teach them that these sciences are all part and parcel of one thing, and that no one is really intelligible without all the others. Making the utmost allowance for the somewhat careless student spirit, we are convinced that there is for this feeling a basis in erroneous teaching. Its remedy is certainly to be sought in properly conducted didactic lectures, which recognize clearly their limited scope, and never step beyond it. It is clearly the function of the head of each department so to present his subject to his students that they will not only have a philosophic conception of the details of the subject itself but will also be able to comprehend its relations to all other branches in medicine. Demonstration will not do this, nor diagrams, nor microscopes, and much less books, as the *Philadelphia Medical Journal* suggests. It must be done by lectures given by broadly educated men, who, while specialists in one sense, have yet a point of view which extends beyond their chosen fields. Here the didactic lecture has its place, a narrower one than it formerly held, but an infinitely more dignified one, and one in which it surely has scope for the development of those personal qualities bred of experience and learning of which we hear so much in great teachers in every line.

We are sure that the institution of such lectures would not be a step backward, but would tend rather to develop that scholarly element in medical teaching which is one of its great needs; they would further tend to unify in the student's mind subjects which, if left to themselves, will naturally become more and more independent of each other. The very fact that special teaching and teaching by demonstration has come, as it should, to have so firm a place in our medical instruction is the reason for the continuance of the didactic lecture, modified in some such way as we have attempted to suggest. We are convinced that it still has a place, and in certain essential respects a more important one than ever before. It is to be hoped that medical teachers will rise to a full appreciation of their possibilities in bringing about the needed readjustment between didactic and experimental teaching. Both certainly have a growing importance in any broad-minded scheme of education.

In his recent address on "Reform in Medical Education" before the American Society of Naturalists, Prof. H. P. Bowditch, its president, said in the course of his remarks: "To what extent the laboratory can replace the lecture-room will, of course, depend upon the nature of the subject taught. In such a branch as anatomy, where facts learned by observation form the greater part of the knowledge to be imparted, laboratory work can be substituted for didactic instruction to a greater extent than is possible in subjects like physiology and pathology, where inferences from observations and conflicting views must frequently be presented. In no department of medicine, however, will it probably be found possible to dispense entirely with a systematic course of lectures in which a trained instructor may give to his class the benefit of his accumulated experience."

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MEDICAL NOTES.

"EMBALMED BEEF." — Dr. W. H. Daly, of Pittsburg, Major and Surgeon in the field with General Miles, testifies that that beef was prepared with borax and salicylic acid, materials not favorable to digestion.

THE RED CROSS SOCIETY THANKED. — A joint resolution has been adopted by the Senate, tendering the thanks of Congress to Clara Barton and the officers and agents of the Red Cross Society for their humane services toward the Armenians and toward both sides in the Hispano-American War.

SICKNESS AMONG OUR SOLDIERS IN CUBA. — Gen. Leonard Wood, M.D., thinks at least 50,000 United States troops will be needed in Cuba, and of this number not more than from 45 per cent. to 50 per cent. will be available for active duty at any one time. Such is the effect of the climate even under reasonably favorable conditions. Is it a white man's country?

THE CLEANSING OF HAVANA, AND THE WAR DEPARTMENT. — The country is apparently to look for the cleansing and sanitation of Havana to the War Department or some department of the War Department, where Colonel Waring's report seems to have been pigeon-holed for many weeks. There is a chance to earn much credit or much additional discredit in this matter. The time before the summer heats and the rainy season is short. The condition of our troops about Havana and the freedom of our Southern States from yellow fever depend in a large measure upon the policy pursued and whether a sensible policy is promptly executed.

THE SEVENTH INTERNATIONAL CONGRESS AGAINST THE ABUSE OF ALCOHOLIC LIQUORS. — This Congress will be held in Paris April 4–9, 1899. The preliminary programme gives promise of the widest discussion of this topic ever made at any one gathering. Nearly every aspect or phase of alcoholic injury and loss is treated by persons familiar with and able to discuss it. The morning sessions are to be confined to scientific studies. The afternoon meetings are to be open for educational, moral and sociological studies of the drink problem. The second afternoon the temperance cause in the primary schools will be discussed by many of the leading educators of France Germany, Switzerland, the Netherlands and other places. The third afternoon session will take up alcoholism among workmen in city and country. The fourth session will study alcoholism on native races and the means of prevention. The evenings will be open for the discussion of special topics by leaders and specialists. One will be devoted to the work of societies, the other to the influence of law and legislation, the other to women's work, the other to the crime phases of the question, and so on. Short papers are earnestly solicited on any one phase of the subject from American workers in this field. All letters should be addressed to the American Chairman of the Organization, T. D. Crothers, M.D., Hartford, Conn.

BOSTON AND NEW ENGLAND.

Salary of Massachusetts Health Board's Secretary. — The Committee on Public Service has reported adversely on a proposition to increase the salary of the Secretary of the State Board of Health from $3,000 to $3,500. Such a report is, we think, to be regretted. The work of the office has been greatly increased in the last ten years. None but a first-rate man should hold that place: it takes all the incumbent's time, and the present salary is not a remuneration.

Cruelty to Antivivisectionists. — The Antivivisectionists in this neighborhood seem to be treating themselves with cruelty. Some one should interfere and have a law passed to protect them from each other.

Bequest to a Natick Hospital. — By the will of Edgar S. Hayes, of Natick, filed for probate recently at East Cambridge, the sum of $5,000 is left to found a free hospital bed in the Leonard Morse Hospital, to be known as the Rufus Morse Free Bed, in memory of an uncle of the testator.

The Boston Lying-in Hospital. — From the report of the Executive Committee of the Boston Lying-in Hospital, read at the annual meeting held recently at the hospital, it appears that 625 women were treated at the hospital during the year, 540 of whom were residents of Boston. In the Out-Patient Department 1,675 women were treated, the number of visits involved being more than 22,000. The year's expenses amounted to $19,680. The night nursery, established by the trustees as a memorial to Bertha J. Raemisch, a graduate nurse of the hospital, has proved a valuable addition to the work. Twenty-two nurses were graduated from the training-school.

The City Hospital Club. — The Club will hold its annual meeting and dinner at the Parker House, on the evening of Wednesday, February 1, 1899, at 6.30 o'clock. As there are many new buildings and much of interest to see at the Hospital, it has been voted by the Executive Committee that Wednesday, February 1st, be a Hospital Day, and that the members of this Club be invited to the Hospital on that day, when the following programme will be carried out: 10–12.30 — Inspection of new buildings and apparatus; medical and surgical ward visits; operations. 12.30 — The Trustees invite the Club to luncheon in the Library. 2–3 p. m. — Addresses by members of the staff and others. 6.30 p. m. — Business meeting and dinner at Parker House.

The Rhode Island Hospital. — The annual report of the Rhode Island Hospital for the year ending September 30, 1898, which has recently appeared, shows that during the year 2,681 patients have been treated in the wards of the hospital, of whom 1,036 were surgical patients, 855 medical, and the rest distributed among the various specialties. In the Out-Patient Department 6,189 new patients were treated, and the total attendance was 22,145. During the summer the hospital received from Montauk Point 125 soldiers for medical treatment. A new pavilion is now building, at an estimated cost of about $160,000. The expenses of the hospital, exclusive of the ambulance service, amounted to $81,367.68, exceeding the income by the sum of $13,628.23.

Boston Society of Medical Sciences. — A meeting of the Boston Society of Medical Sciences was held January 17th at the Harvard Medical School. Dr. J. L. Goodale reported the results of a histological examination of sixteen cases of acute lacunar tonsillitis. In most of the cases there were found diffuse proliferative changes in the follicles, cocci in the tissues, and leucocytes occasionally containing bacteria. Fibrin was present in the cases of greater clinical severity. About a quarter of the cases studied showed local and suppurative lesions. Dr. R. C. Cabot gave the results of his investigations in fifty-five cases, of substitutes for tuberculin in diagnosis. He used normal salt solution and a preparation of somatose. The results were practically negative with salt solution. With somatose he found that in eleven cases of tuberculosis there was a fairly typical reaction; in six cases the temperature rose to slightly over 102°, with constitutional symptoms. His general conclusions were that the agents employed did not take the place of tuberculin. Mr. Francis Blake described in detail the microtome devised by him, which goes under the name of the Minot-Blake Microtome. Dr. J. H. Wright gave a demonstration of its working. Dr. Mark W. Richardson read a preliminary report on the part played by bacteria in the production of gall-stones. He attempted to produce gall-stones experimentally in the rabbit by the injection of a culture of typhoid bacilli into the gall-bladder. The experiments have not been completed, but as far as prosecuted tend to demonstrate the possibility of the formation of concretions through the presence of the bacilli. Dr. Langdon Frothingham spoke of his experience in the investigation of rabies in the vicinity of Boston. Of thirty cases sent him for diagnosis since March, 1897, twenty have been positive. He described the present method of diagnosis, and stated that the virus is easily destroyed by heat, but maintains its virulence for a long period when exposed to cold. Dr. Hibbert W. Hill described and demonstrated branching diphtheria bacilli. He found that branching forms were not discoverable, on being studied from injected animals, but that numerous transplantations in media merely diminished their number. Dr. J. Orne Green read two papers by title, one on "The Primary Infection in Acute Suppuration of the Tympanum" and the other on "The Bacteriology of Mastoiditis."

NEW YORK.

New York Foundling Hospital. — At the last meeting of the Medical Board of the above institution the following new members were elected to the Board: Attending Obstetrician and Gynecologist, John Aspell, M.D.; attending physicians, successors to J. Lewis Smith and Joseph O'Dwyer deceased, L. Emmet Holt, M.D., and Rowland G. Freeman, M.D.

Death of Dr. John P. Sharer. — Dr. John P. Sharer, aged seventy-five years, for fifty years a practising physician at Little Falls, N. Y., died suddenly, on January 8th, of cardiac disease.

Malpractice Suits. — The following resolution has been adopted by the Rochester, N. Y., Pathological Society: If any member be confronted with a suit at law for alleged malpractice, or similar charge, it shall be his duty to notify the Society. The president shall thereupon appoint a committee of three to investigate the merit of the action, to advise the member brought into litigation, and to recommend to the Society such measures as they consider should be taken.

The New York County Medical Association. — At the annual meeting of the New York County Medical Association, held January 16th, the following officers were elected: President, Dr. F. H. Wiggin; First Vice-President, Dr. P. Syms; Second Vice-President, Dr. E. G. Mason; Recording Secretary, Dr. O. C. Ludlow; Corresponding and Statistical Secretary, Dr. C. E. Dennison; Treasurer, Dr. John H. Hinton; Members of the Executive Committee, Drs. G. T. Harrison, F. J. Quinlan and J. Shrady. With the exception of the case of Dr. Hinton, the Treasurer, this result is a victory for the Medical League, whose candidates were defeated by a large majority in the recent elections at the Medical Society of the County of New York and the Academy of Medicine. The vote, however, was a close one, and its outcome would probably have been different had not stormy weather prevented the attendance of a large number of members.

The State Charities Aid Association. — The twenty-sixth annual report of the State Charities Aid Association, just issued, shows that in New York County the general administration of the charities department has shown marked improvement during the year, and calls particular attention to the substitution of paid and responsible employees for irresponsible workhouse prisoners in the hospital wards. With special satisfaction it is announced that the Infants' Hospital on Randall's Island, from being one of the worst institutions in the department, has become one of the best. The buildings have been greatly improved, modern plumbing has replaced the obsolete plumbing that was a menace to the inmates' lives, the number of wet-nurses has been quadrupled, and the experiment has been made of boarding in carefully selected families in the country a number of infants, mostly foundlings, for whom wet-nurses could not be provided in the institution. The Committee on Hospitals makes an argument for the establishment of a State colony for indigent consumptives, and cites the example of the State of Massachusetts and several European countries in support of such a scheme. An account of the Craig Colony for Epileptics is included in the report, which shows very gratifying results. Seven patients were discharged last year as cured, and eighteen as improved. Over 80 per cent. of the patients in the colony are regularly employed, mostly in outdoor labor.

The Medical League. — At the annual meeting of the Medical League, held January 20th, Dr. J. E. Janvrin was re-elected President, Dr. J. C. Schminke, Secretary, and Dr. J. J. Noll, Treasurer.

Official Compliments for Dr. Doty. — In announcing the reappointment of Dr. A. H. Doty as Health Officer of the Port of New York Governor Roosevelt took occasion to pay a high tribute to his character and qualifications for the position.

Tuberculosis in New York. — Accompanying the report recently presented by the Senate Commission on tuberculosis in the State was a report on the spread of the disease in New York City, prepared some time since by Dr. Arthur R. Guerard, of the Bacteriological Department of the Health Board. Dr. Guerard made a special investigation of existing conditions in the tenement districts of the lower east side, and states that in the old Fourth Ward there were in three years 541 known cases, out of a population of 18,425, and that consumption was found in 248 out of 663 dwellings. In the old Sixth Ward the disease was found in 239 out of 630 houses, or 37.9 per cent., and the number of cases in three years was 465, there being an average of 1.94 cases to each infected house. Many of these houses had one or more cases every year for three consecutive years, some of them as many as from eight to eleven cases during this period, while several houses in which cases of tuberculosis have been reported in the last three years have had deaths from the disease in them for eight or nine years. In the old city entire a summary made for five years shows: Total number of dwellings, 81,828; number of dwellings in which deaths from tuberculosis occurred, 18,771; percentage on total, 22.94; houses with deaths in one year, 14,479; total deaths in same, 15,511; deaths per house, 1.07; houses with deaths in more than one year, 4,292; total deaths in same, 11,232; deaths per house, 2.61.

The Signs of Death. — A bill entitled "An Act to Prevent the Occurrence of Premature Burial" has been again introduced in the Legislature by Assemblyman Redington. Like the bill of last year, which failed to pass, it is modelled on the German law, and was drawn up by Mr. H. Gerald Chapin. The principal change to be noted is in the "Signs of Death," which are given as follows: (1) Permanent cessation of respiration and circulation; (2) purple discoloration of the dependent parts of the body; (3) appearance of blistering around a part of the skin touched with a red-hot iron; (4) the characteristic stiffness known as "rigor mortis"; (5) signs of decomposition. The signs required before burial enumerated in last year's bill were that incisions into arteries produced no flow of blood; that no transparent appearance existed in the hands and fingers when held close to a light; that a mucous covering upon the eyes had been found; and that no moisture appeared upon a mirror held within half an inch of the lips and nostrils.

Death of Dr. Julius A. Roth. — Dr. Julius A. Roth died on January 15th, after a short illness. He was born in New York City, in 1858, and was graduated from Bellevue Hospital Medical College in 1882.

Death of Dr. McGillicuddy. — Dr. Timothy J. McGillicuddy died at his residence in New York, on January 16th, of pneumonia. He was forty-one years of age and a native of Lewiston, Me. He was graduated from the Medical Department of the University of New York in 1882, and was a frequent contributor to current medical literature. Dr. McGillicuddy was lately the plaintiff in a law-suit which has attracted considerable attention. The suit was against the Farmers' Loan and Trust Company as temporary administrator of the estate of a deceased patient, to recover a balance of $23,865 claimed to be due him for professional services. The case was lost, and it was during Dr. McGillicuddy's last illness that the court rendered a decision refusing a new trial, the complaint being dismissed on the ground that, in accordance with the present laws of New York, a physician or surgeon suing for services cannot establish his case unless this can be done without the disclosure of information acquired in the course of his professional attendance. An effort was made to evade the statute by calling as a witness Dr. Cerio, who attended the patient in conjunction with Dr. McGillicuddy, the claim being made that, although Dr. Cerio was a duly licensed physician, he had never registered his license, as required by law, and was consequently not incompetent as a witness. The court refused to admit this testimony, stating that "a patient has a right to act on the presumption that every practitioner is regularly licensed. Registration is a regulation which concerns the practitioner and the State. It was not intended to infringe upon the rights of patients, and does not assume to do so."

Miscellany.

CÆSAREAN SECTION IN THE PHILIPPINES.

In view of the pending question with regard to the acquisition of the Philippines, it is not uninteresting to learn of the popularity there of an operation which is now not infrequently performed in this community. The following account is taken from the *British Medical Journal:*

Dr. Lobti, of Biarritz, furnishes us with information about obstetrics in the Philippines, even more remarkable than the recent reports as to the strange social and political relations of the inhabitants of those islands. Owing to well-known religious prejudices, craniotomy is doubtless rarely, if ever, practised, but Cæsarean section after the death of the mother is not rarely performed as a religious duty. In 1821, the year when a deadly epidemic of cholera ravaged the Philippines, six post-mortem Cæsarean sections were undertaken in Bohol alone. The parish register contains a notification of the baptism of the children, two being reported as strong, and the remaining four likely to live. No serious comment need be made on this alleged saving of all the six infants who survived the algid stage of cholera and the death of the parent. In another village the same operation was undertaken in one case, and the child lived, it is said, seven hours. Even more incredible is the case of a woman in Cabancalan, Isle of Negros, who died pregnant; her abdomen was opened twenty-four hours after death. The child, it is related, showed every sign of life. Six years later, at Mandana, a child is said to have been extracted seven hours after the death of its mother. Not only was it reported as living, but it is said to be yet alive to witness the truth of the report. In the Isle of Negros a living female fetus was removed from the body of a woman who had been murdered two hours previously. Lastly comes an announcement — as long ago, we must observe, as December 12, 1854 — in the *Official Bulletin* of Manila. Cæsarean section was performed on the body of a woman five months pregnant five hours after her death. The fetus lived for half an hour. Of the above statements, reproduced in the *Journal d'Hygiéne*, it may be confidently asserted that they include two facts mixed up with a mass of what we may gently term inaccuracies: first, that post-mortem Cæsarean section is often undertaken in the Philippines, no doubt more frequently than above reported; and secondly, that there is an extreme prejudice in its favor which makes the natives eager and ready to believe that the aim of the proceeding is not missed.

METEOROLOGICAL RECORD

For the week ending January 14th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....8	30.34	26	32	20	63	58	60	S.W.	S.W.	12	18	C.	C.	
M...9	30.21	36	41	30	53	66	60	S.W.	N.	12	10	O.	O.	
T...10	30.48	18	30	5	40	47	44	N.W.	N.W.	12	18	C.	C.	
W..11	30.56	12	23	1	40	47	44	N.W.	N.W.	16	15	C.	C.	
T...12	30.53	22	31	12	34	26	30	N.W.	W.	10	6	C.	C.	
F...13	30.41	25	33	17	47	87	67	N.W.	E.	5	3	O.	O.	.01
S...14	29.75	33	36	30	95	100	98	N.	S.	7	6	R.	R.	.38
☞														.39

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week

RECORD OF MORTALITY

For the Week ending Saturday, January 14, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1275	332	7.98	21.77	.98	.77	2.59
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	272	69	5.40	31.68	.36	1.44	1.80
Baltimore . .	506,389	225	65	7.04	13.64	.88	1.76	3.96
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	170	56	12.39	25.52	—	6.96	1.74
Washington .	277,000	145	46	8.84	19.72	1.36	2.04	1.36
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	83	22	4.84	35.09	1.21	—	1.21
Nashville . .	87,754	31	9	—	12.92	—	—	—
Charleston . .	65,165	35	9	11.44	8.58	8.58	2.86	—
Worcester . .	108,240	43	12	11.62	23.25	—	2.33	6.99
Fall River . .	95,919	34	15	11.76	41.16	5.88	—	—
Cambridge . .	89,724	33	14	6.06	12.12	—	—	3.03
Lowell . . .	88,641	50	14	6.00	22.00	4.00	2.00	—
Lynn	66,703	19	2	10.52	10.52	—	—	—
New Bedford .	66,340	25	7	8.00	4.00	—	—	8.00
Somerville . .	61,101	23	5	—	17.40	—	—	—
Lawrence . .	57,263	46	12	6.51	19.53	—	6.51	—
Springfield . .	56,501	32	6	15.65	21.91	—	3.13	3.13
Holyoke . . .	43,424	15	3	13.33	—	—	—	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem	36,883	11	4	—	18.18	—	—	—
Malden . . .	34,613	13	2	—	30.76	—	—	—
Chelsea . . .	33,468	21	5	—	28.56	—	—	—
Haverhill . .	32,022	14	2	7.14	14.28	7.14	—	—
Gloucester . .	30,589	12	4	—	25.00	—	—	—
Newton . . .	29,716	—	—	—	—	—	—	—
Fitchburg . .	29,438	9	1	—	22.22	—	—	—
Taunton . . .	28,167	7	1	28.56	28.56	—	14.28	14.28
Everett . . .	25,338	7	2	14.28	28.56	—	14.28	—
Quincy . . .	23,549	11	3	18.18	36.36	—	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	10	1	—	30.00	—	—	—
North Adams .	20,971	5	2	—	40.00	—	—	—
Chicopee . .	17,842	—	—	—	—	—	—	—
Medford . . .	16,511	5	1	—	—	—	—	—
Newburyport .	14,915	5	0	—	—	—	—	—
Melrose . . .	14,032	3	0	—	—	—	—	—

Deaths reported 2,708; under five years of age 730; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 225, acute lung diseases 638, consumption 289, diphtheria and croup 75, typhoid fever 44, diarrheal diseases 27, whooping-cough 23, scarlet fever 16, cerebro-spinal meningitis 15, erysipelas 14, measles 12, small-pox (New York) 1.

From whooping-cough New York 7, Pittsburg 3, Providence, Fall River, Holyoke and Quincy 2 each, Boston, Washington, Lynn, Haverhill and Gloucester 1 each. From scarlet fever New York 12, Pittsburg 2, Boston and Springfield 1 each. From cerebro-spinal meningitis New York and Washington 4 each, Worcester, Cambridge, Lowell, Lynn, Springfield, Gloucester and Hyde Park 1 each. From erysipelas New York 11, Boston, Somerville and Springfield 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending January 7th, the death-rate was 19.1. Deaths reported 4,174; acute lung diseases (London) 365, diphtheria 96, measles 84, whooping-cough 80, fever 47, scarlet fever 30, diarrhea 30.

The death-rates ranged from 12.6 in Cardiff to 27.7 in Halifax; Birmingham 16.7, Bradford 15.2, Bristol 18.0, Derby 14.7, Gateshead 12.7, Hull 18.0, Leeds 21.4, Leicester 16.8, Liverpool 23.8, London 19.1, Manchester 22.1, Newcastle-on-Tyne 22.6, Nottingham 19.6, Portsmouth 16.4, Sheffield 17.2, Sunderland 21.5, West Ham 15.1.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 21, 1899.

J. C. Byrnes, surgeon, ordered to additional duty on board the "Puritan."

W. M. Garton, assistant surgeon, detached from the "Supply" when put out of commission and ordered to the Washington Navy Yard.

E. M. Blackwell, assistant surgeon, detached from the "Vixen," and ordered to the "Franklin."

J. R. Waggener, surgeon, orders of January 3d, detaching from the Mare Island Navy Yard and ordering to Washington, D. C., amended; ordered to be examined at Washington, D. C., and then home to wait orders.

S. H. Griffith, surgeon, detached from the "Mayflower" when put out of commission, and ordered home to wait orders.

G. H. Barber, passed assistant surgeon, detached from the "Glacier" when put out of commission, and ordered to the Naval Academy.

C. F. Stokes, passed assistant surgeon, ordered to the Naval Hospital, New York.

R. C. Holcomb, assistant surgeon, detached from the Naval Academy and ordered to the Washington Navy Yard.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JANUARY 19, 1899.

Wertenbaker, C. P., passed assistant surgeon. To proceed to Clinton, Ga., for special temporary duty. January 13, 1899.

Gardner, C. H., passed assistant surgeon. To report at Bureau for special temporary duty. January 14, 1899.

Board convened to meet at the U. S. Marine Hospital at Chicago, Ill., on Tuesday, February 14, 1899, at 10 o'clock A. M., for the examination of candidates for appointment as assistant surgeon in the Service. Detail for Board: Surgeon **Henry W. Sawtelle**, Chairman; Surgeon **Charles E. Banks**, Passed Assistant Surgeon **J. O. Cobb**, Recorder.

APPOINTMENT.

George A. Gregory, of Maine, to be acting assistant surgeon at Boothbay Harbor, Me. January 14, 1899.

SOCIETY NOTICES.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, January 30th, at 8 o'clock.

Papers: Dr. John Dane, "Some Practical Results of Recent Studies upon the Feet of Young Children."

Dr. Wm. N. Bullard, "Cases of Paralysis after Cerebro-spinal Meningitis."

Dr. Henry Jackson, "Etiology of Abscess of the Liver."

Arthur K. Stone, M.D., *Secretary*, 657 Boylston St.

Massachusetts Medico-Legal Society.—The next regular meeting will be held at the Medical Library, 19 Boylston Place, on Wednesday, February 1st, at 12 M.

The following papers will be read:

"Medical Expert Testimony," by Dr. Irish.

"A Double Homicide; Its Mystery," report of the case by Dr. Brown.

"The Murder of John Dean," by Dr. Hoitt.

Members of the medical profession are cordially invited.

Julian A. Mead, M.D., *Secretary.*

American Orthopedic Association.—The thirteenth annual meeting of the Association will be held at the New York Academy of Medicine, May 31, June 1 and 2, 1899. The officers of the Association for this year are Dr. W. R. Townsend, 28 West 59th Street, New York City, President, and Dr. John Ridlon, 103 State Street, Chicago, Secretary.

BOOKS AND PAMPHLETS RECEIVED.

Pneumotomy. By Dudley Tait, M.D., and Albert Abrams, M.D., San Francisco. Reprint. 1898.

Die Prophylaxe der Sepsis bei Laparotomien und bei Eingriffen am Uterus. Von Dr. B. Credé, Dresden.

The Use of Quinin in Malarial Hemoglobinuria. By Albert Woldert, Ph.G., M.D., Philadelphia. Reprint. 1898.

Forty-third Annual Report of the Trustees of the Northampton Lunatic Hospital for the Year ending September 30, 1898.

The Medical Record Visiting List, or Physician's Diary for 1899. New revised edition. New York: William Wood & Co.

Transactions of the American Gynecological Society, Vol. XXIII, for the year 1898. Philadelphia: Wm. J. Dornan. 1898.

Bleeding Polyp of the Septum (Telangiectoma): Report of a Case. By George L. Richards, M.D., Fall River, Mass. Reprint. 1898.

Diseases of the Ear as a Specialty. Some Remarks About the Study of Medicine in Germany. By Emil Amberg, M.D., Detroit, Mich. Reprints.

Bulletin of the Medico-Legal Congress held at the Federal Building in the City of New York, September 4, 5 and 6, 1895. Published by the Medico-Legal Society. 1898.

Thirteenth Annual Report of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania. Transmitted to the Governor December 1, 1897. Vols. I and II. Printed by the State. 1898.

Original Articles.

THE PRESENT STATUS OF THE ANTISTREPTOCOCCIC SERUM.[1]

BY F. J. COTTON, M.D., BOSTON.

When, in 1895, the news was spread broadcast that Marmorek, of the Pasteur Institute, had produced an effective serum for protection against streptococcus infections, public attention was forcibly called to the alleged solution of so important a problem. The fact that Marmorek reported not only laboratory experiments but clinical cases as well much heightened public interest, and clinicians on the continent at once began to try the new serum on patients.

Before considering the clinical application, however, it may be well to review briefly the laboratory data on the basis of which the treatment is advocated.

The real innovation in Marmorek's work was in the use of media containing serum of the horse or ass, or human serum, and the consequent possibility of dealing with highly virulent streptococcus cultures with some accuracy. For in these media the rapid loss of virulence occurring in ordinary streptococcus cultures was avoided, and it was possible, after raising a given culture to high virulence by passing it through a succession of animals, to keep it at a practically constant virulence in artificial media.

Marmorek used the horse or ass for immunization, which he carried out by successive injections of living pathogenic cultures in increasing dose and virulence. After a long period of immunization and a month's rest (to get rid of the toxic properties of the serum) these animals furnished a serum strong enough to protect rabbits against an otherwise fatal injection of streptococcus culture. He found 0.2 cubic centimetres (of one serum) injected eighteen hours before inoculation would protect a rabbit against ten times the fatal dose of streptococci.

If the serum is not injected till some time after the inoculation far larger doses are needed: with an original infection of ten times the fatal dose, one centimetre of serum will save the animal if injected within three hours; at five hours five centimetres are necessary; and six hours or more after inoculation with a highly virulent culture no amount of serum will check the infection. In case of less virulent cultures, the infection may be checked by serum injection even twenty-four to thirty hours after inoculation.

The weak point about all this is that the protection against increased dosage of streptococci by increasing dosage of serum is effective only up to a certain limit. This Marmorek admits, and says that with highly virulent cultures, injected in larger doses, death is the rule in spite of large injections of serum. What the limit is he does not state, but when we consider that he tested his serum against a coccus the fatal dose of which was one ten-millionth of a cubic centimetre, the whole matter, though legitimate, seems far removed from the conditions of infection to be met with clinically.

Marmorek's work, and especially his laboratory results, was, of course, soon tested.

Aronson and Petruschky, men of some authority, published rather discouraging articles on the subject. Aronson produced a serum by methods similar to Marmorek's, which protected rabbits up to a certain limit, but on testing Marmorek's own serum he found it of very little if any power. This he was inclined to attribute to degeneration in the bottle, the more so since he found a serum of his own much weakened by three months' keeping.[2]

Petruschky experimented with Marmorek's own streptococcus culture, but did not succeed in increasing its virulence to nearly the point attained by Marmorek.[3] On testing Marmorek's serum he utterly failed to demonstrate any protective powers, though he tried two samples. Nor did the "Lyon" brand seem any better.

Merieux and Niemann defended the "Lyon-Vaise" serum, which they found to have protective powers both against their own and against Marmorek's streptococcus. Marmorek's serum was also active against both cultures, but each serum acted best against the individual streptococcus culture used in the preparation of that particular serum.

Zenoni found the serum from the Pasteur Institute possessed of protective power against small dosage or against less highly virulent streptococci.

Courmont found Marmorek's serum of no avail against streptococci cultivated *direct* from erysipelas cases.

Van der Velde found immunization might protect against certain streptococci while of no avail against other streptococcus cultures.

Bornemann worked with a streptococcus obtained from Marmorek, of considerable virulence, against which he found the Paris serum only weakly active, though he tried three samples. A serum of his own, similarly made, proved more active. Schenck continued Bornemann's work, showing but little protective power for the serum.

Bordet found the serum efficacious.

Bullock, following Marmorek's methods, got a serum showing a moderate efficacy, as did also Bokenham.

Paltauf has recently succeeded in showing some protection, more especially against the culture of streptococci used in preparing the serum used.

Dr. Williams, of the New York Board of Health Laboratory, has done work, not yet published, showing definite protection by serum in animals.

Certainly it seems that a passive immunization can be obtained which protects against certain streptococci up to a certain limit. A high degree of passive immunity has not yet been shown possible, and cure of infections well under way seems as yet hardly possible, even in the laboratory.

It remained, however, for Koch and Petruschky, in a recent article, to bring in a further element of doubt as to the clinical application of the serum. Marmorek assumed man to be more susceptible to streptococcus infection than any of the animals, but these investigators demonstrate clearly that virulence of a given culture for animals is no index of its action on man. In the course of a test series of inoculation with erysipelas in malignant disease they experimented with many cultures, and found it impossible to produce infection in man with several different cultures highly virulent for rabbits; among these was Marmorek's streptococcus culture. In one case a subcutaneous injection was given, in quantity of 5 centimetres, of a culture fatal to rabbits in the dose of one one millionth centimetre: not even a local infection resulted. It is, then, questionable whether a serum like Marmorek's, protecting against a streptococcus not virulent to man, would be of great use against a clinical infection.

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[1] Read at the Obstetrical Society of Boston, November 15, 1898.

[2] This lack of permanency of the antistreptococcic serum has lately been confirmed by Dr. Park of the New York Board of Health.

[3] Fatal dose one one-millionth *vs.* one one-hundred-millionth.

Further experiments by Petruschky bear directly on this. He finally succeeded in producing erysipelas by using cultures from human erysipelas and peritonitis, and in one patient could, with a certain culture, produce erysipelas regularly. Twenty-four hours before certain of these streptococcus inoculations, this patient received injections, in turn, of ten cubic centimetres of Marmorek's and of Aronson's serum, and of a serum made by Petruschky. None of these "protective" injections apparently hindered or modified the erysipelas which ensued.

Considering all these things, it must be admitted that the *a priori* case for the serum as a therapeutic agent in man is not as strong as might be desired, and some of the soundest critics have insisted that its place is still in the laboratory.

The serum has, however, been used clinically in a variety of conditions, most conspicuously often in puerperal fever. Marmorek himself reported 15 puerperal cases: 7 of these showed streptococci alone; of these all recovered. Five had staphylococci as well; of these 2 died. Three showed mixed streptococci and bacteria coli; all these died. The cases with pure streptococcus infection reacted promptly to the serum and did well in every way. The doses used varied from 15 centimetres upward. Bar and Tissier reported 12 cases, in 10 of which streptococci were demonstrated. There were streptococci alone in 7 — 4 died; streptococci with coli in 2 — 2 died; streptococci with pneumococci in 1, which recovered. Porak had 3 cases with 1 death, but took no cultures; in 1 case even the clinical diagnosis is not clear. Gaulard had 2 cases with 1 death; in one, serum and douches determined a rapid recovery; in the other, death occurred five days after the temperature reached normal.

At a meeting of the French Obstetrical Society, April 10, 1896, Charpentier spoke of 40 cases he had collected (including the above cases of Bar, Porak and Gaulard), with a mortality of 42.5 per cent., or, excluding those *in extremis* when treatment began, of 35 per cent. Of pure streptococcus infections there were 16 cases, of which 8 died; a mixture of streptococci with bacteria coli occurred 9 times with 4 deaths. Dubrisay reported a case which ended in recovery, but did not show clearly any effect from the serum. Bar was inclined to attribute some value to the serum, but in mild cases mainly; while Bué, Boissard and Budin, after having tried it, were still less in favor of its use. Charpentier thought its usefulness still to be demonstrated. Marmorek's advice to abstain from all other treatment in cases when the serum is indicated was strongly condemned and the consensus of opinion was in favor of relying mainly upon known surgical measures until further data are obtained.

McKerron reports 3 cases with 1 death, in all of which there was some subjective improvement and a steadier pulse after the injections. Haultain had 2 cases with streptococci present in the discharge. One recovered rapidly; the other died at seven days. Durante and Siron report a case with streptococci present, which died at two weeks with extensive organic lesions due to the sepsis. Berthod, Ausset and Rouzé, Chrobak and Ledrain all report single cases with apparently favorable results.

In most of the other cases on record the serum was obtained not from the Institute but from other sources which either drew on the Institute for supplies or made their own serum. In so far as Marmorek's methods were followed in the preparation of the serum the cases are included.[4] This covers many English, some French and some American cases.

Stansby reports a case where the patient ten days after delivery was unconscious, with a temperature of 103° and a pulse of 140. After the serum injection she became conscious, and the temperature fell to 101°, the pulse to 92. The temperature rose later, but the patient remained conscious throughout, and ten days later was afebrile.

Groth had a case where streptococci were demonstrated in the blood two weeks after delivery, with a temperature of 105.8°. Serum injection, followed by a drop in the temperature; the patient was convalescent, however, only after six weeks.

Hastings reports a case where streptococci were present, where each injection was followed by an improvement in general condition with a fall in temperature.

Shaw, on the other hand, notes a case also shown to be a streptococcus infection, where each injection determined not a fall but a rise in temperature, though the patient recovered. Marx had five cases, all of which proved fatal, despite the use of serum.

Besides these there are at hand reports of 34 other cases, with 5 deaths, reported by twenty-five observers.[5]

Taking all cases in the list collected, we have a total of 107 cases with 34 deaths, a mortality of 31.7 per cent. Many of these cases were, of course, severe, and the treatment began late. The serum was in most cases given in doses varying from 10 to 30 cubic centimetres.

As to pyemia, endocarditis and other general sepsis cases, Marmorek reports a successful case of endocarditis of puerperal origin. Sainsbury had an endocarditis case where streptococci were present in the blood; treatment began late, and recovery was rather slow.

Wignhoff reported a streptococcus osteo-myelitis with streptococci in the blood, which recovered, but only after twelve weeks of fever. The dozens of serum injections had no obvious effect.

Coleman and Wakeling had a septic pneumonia with streptococci in the blood, which recovered; the effect of the serum was not obvious.

Thomson and Kemp note a case where the blood showed streptococci — a chronic endocarditis. He was treated with many serum injections, but without result, and finally died.

Low found streptococci in the blood of a child with otitis after scarlet fever; the case recovered under serum treatment.

Ballance and Abbott note a case of hemorrhagic septicemia, without cultures, remarkable for the prompt subjective improvement after the injections.

Butlin notes a case of streptococcus pyemia, fatal in spite of surgery and serum.

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[4] This applies to the "Lyon-Vaise" serum, to that of the British Institute of Preventive Medicine (Bullock), of Burroughs, Wellcome & Co. (Bokenham), of Gibier, of the Pasteur Vaccine Co., of Chicago, of Parke, Davis & Co., and probably to others.

[5] Cases by Charrin and Roger, Denys and Leclef and others, where the serum used was prepared on different principles with different technique, are not included here.

Many cases[6] of essentially local sepsis, from phlegmon to peritonitis, are reported with various results, but rarely with any indication of specific action of the serum. Pozzi, Chrobak, Weir and Gerster have used it in sepsis following operation. Senn advocates this use, but without personal experience, it seems. Cheyne and Boucheron have used the serum before operations as a preventive of probable sepsis, and advocate this use, as does Durham, but they give no convincing data.

In erysipelas the serum has often been used, but the only considerable series seems to be Marmorek's own. He treated 413 cases, with a mortality of 3.87 per cent. against a 5.12 per cent. mortality in a previous series in the same service treated without serum. In these cases he notes a definite improvement in general condition after five to twelve hours, often with a rapid fall of temperature and pulse, and an improvement in the local condition which was often rapid and permanent. He used doses of 5 to 20 cubic centimetres, with total amounts from 10 to 120 cubic centimetres. Rondot used the serum with similar results on a considerable number of erysipelas cases. Bokenham's results from injection in this class of cases were satisfactory. Gouin, Richardière, Chrobak, Polycoktoff and Magill note successful cases of its use.

Steele used the antistreptococcic serum in a case of erysipelas neonatorum, and reports a rapid recovery, but Comby notes three such cases so treated — all of which died; and both of Bar and Tissier's cases in infants were likewise fatal.

The treatment of pseudo-membranous angina with streptococci has not been a success, according to Sevestre; and the series of broncho-pneumonias in children treated by Marmorek in Comby's wards is said to have shown, at one time, 16 cases with 16 deaths (Lutaud).

Scarlet fever has been treated with the antistreptococcic serum, partly because the streptococcus has been suspected as the infective agent, and partly because streptococci are so frequent in the complications of the disease. Marmorek treated 96 cases with doses of 10–30 cubic centimetres of serum in totals up to 80 cubic centimetres; the mortality is stated by Comby as 8.3 per cent. Baginsky reports 48 cases, with a mortality of 16 per cent. Polycoktoff notes 17 cases with 8 deaths.

Josias had in two series a mortality of 2.08 and 5.3 per cent. respectively; those treated without serum showed a mortality of 5.8 per cent. These are, in part, the same cases reported by Marmorek.

Marmorek frankly admits that the serum has little or no effect on the scarlet fever itself, but finds a favorable influence on the complications, especially nephritis and adenitis. Baginsky, with a much worse series, is more impressed with the value of the treatment.

With so large a number of clinical cases on record, it would seem possible to draw some conclusions, but unfortunately many of the cases are not so presented as to be of any particular value, and such conclusions as can be drawn must be mainly negative. Before drawing conclusions as to the value of any remedy one must either see its effect in disease ordinarily running a definite typical course, or there must be a decided drop in a heavy mortality, or else an opportunity to compare long series of cases with and without the given treatment under otherwise like surroundings. In the present case the first two conditions are in no way fulfilled, the third only apparently; apart from Marmorek's own cases, a large proportion of the cases of all sorts have been reported in ones or twos by different observers. This is, at best, a poor way of getting statistics, and here especially unfortunate, since these are just the sort of cases where the personal equation should enter in as little as may be. This criticism applies to all the series recorded, with the exception of the scarlet fever cases. This scarlet fever series we can set aside; the case is not proven, and is, at best, not really relevant. Nor is much to be made out of the cases of local and post-operative sepsis; serum and surgery are too hopelessly mixed.

The cases of general infection, puerperal fever and erysipelas are more directly available.

In the series of cases of general sepsis there are some in which the diagnosis is not quite satisfactory; others, on the other hand, of recovery which is surprising under the conditions actually shown. Cases recovering after streptococci were found in the blood are surely striking, but it must not be lost sight of that the clinical course of these cases was not unusual,[7] the happy result not always very directly attributable to the serum, and that such recoveries are not entirely unknown where no serum-therapy has been employed.[8]

In the puerperal cases the difficulties are: (1) the cases are mainly isolated observations by different observers; (2) many cases reported are without any bacteriological evidence; (3) the course of puerperal fever is most varied, the prognosis notoriously uncertain; (4) many of the reported cases were efficiently treated surgically as well as by serum.

It is hard to draw just conclusions under these circumstances. The mortality, 32.3 per cent., cannot be called low, even granting that the series includes many desperate cases. It is perhaps not fair to compare this with any ordinary series of cases of puerperal sepsis, but certainly on such figures as a basis there can be no talk of any considerable reduction of mortality.

In individual cases the use of the serum would seem to have helped definitely, but these are more than counterbalanced by cases of streptococcus infection alone where no effect whatever is to be attributed to the serum. The irregularity of course in puerperal fever, the difficulty of distinguishing the results of other treatment from those of the serum, cannot be too clearly borne in mind.

In a proportion of cases, however, there does appear, apparently as a definite result of the use of the serum, a marked improvement in subjective condition, in the pulse, and often in the temperature. This is by no means constant, and apparently bears little if any relation to the general course of the infection, but it seems definite and must mean something.

In the erysipelas cases, again, the mortality figures are not convincing, for, as Therese points out, the ordinary mortality varies from 1 to 5 or 6 per cent., while Marmorek's figure was nearly 4 per cent.

Here again there appears the same improvement in subjective condition, pulse and temperature following injections, but more often in this erysipelas series, and often accompanied by a rapid improvement in the local process. This is noted by Rondot as well as by Marmorek. Unfortunately, even here, Petruschky's experiments with inoculation erysipelas and serum must make us a little conservative in interpreting the clinical notes.

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[6] Marmorek, Rondot, Crossing and Webber, Boake, Pearse, Lockwood, Lillienthal, Cook, Heatherley, Weir, Grandin, Johnson, Vineberg.

[7] For example, Wignhoff's case with a three months' run of fever.

[8] Petruschky, Zeitschr. f. Hygiene, xvii, p. 59, and Bernheim, Jahrb. f. Kinderh'k., 1896, xlii, 208, report ten such cases of their own.

Probably no one will now contend that the antistreptococcic serum is, broadly speaking, effective against streptococcus infections. Beyond a doubt, a certain degree of passive protection is possible in the laboratory, and probably something of the sort is possible in man. There seems, in view of recent work, no ground for drawing sharp distinctions between alleged species of streptococci, and, though it would be a mistake to assume too close a parallel between the conditions of infection in man and in animals, yet probably a serum really effective in protecting rabbits against streptococci would afford some aid to the human organism in its struggle against a like infection. It is likely enough that this is the explanation of the temporary relief of symptoms so often noted. It does not seem that this represents a strong action against the infection, but it is something, and in many cases a very little may turn the tide.

This seems reason enough to give the serum further trial — as a symptomatic treatment if no more. There seems to be no good reason against its use. Urticaria, erythema, joint pains, etc., are of not uncommon occurrence, but of no great moment. Abscesses at the point of injection, sometimes containing streptococci, are not rare, and would indicate care in using a bacteriologically tested serum. Bué and Thomson have thought the serum a cause of albuminuria, but this must be either unusual or slight, judging by reports.

If the serum is to be used in earnest, it should be used in considerable doses. Probably in many cases the dosage has been too small. To protect a rabbit against a ten times fatal dose needed 0.2 centimetres of Marmorek's serum; this is one seven-thousandth the body weight, corresponding to about 10 centimetres in man. The potency of different makes of serum varies, and they seem to lose notably by keeping. Hence, while there are no accurate data for dosage in man, yet the problem is not to protect against an infection, but to cope with an infection in full swing, and that with a serum of doubtful efficacy; the needed dose will probably be large, if anything is to be accomplished. The limit of dosage must vary, but the untoward effects above noted are not frequent, and plenty of cases have borne 25 cubic centimetre doses. In one case a total of 1,030 cubic centimetres was given, though this in a case of some duration; there were no ill effects beyond a slight erythema.

There seems, then, some reason for continuing the use of the serum in cases of demonstrated streptococcus infection; care is needful in selecting the serum to be used; it should be used, if at all, in considerable amount; and, above all, until more evidence of its power is forthcoming, it should be used as an adjunct only, and never to supplant or modify other treatment of the case.

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SOME OVERLOOKED CAUSES OF COUGH.[1]

BY F. E. HOPKINS, M.D., SPRINGFIELD, MASS.

Riegel says "the intensity of paroxysms of cough is in no way immediately dependent upon the extent or intensity of the local alterations, so that we cannot form any definite conclusions from the nature and severity of the cough as to the seat and extent of the pathological alterations." This statement may well serve as the text for a paper dealing with extra-thoracic causes of cough. In a general way there are two kinds of cough: in one the explosive effort is attended by the dislodgment of some material within the air passages; with this we have nothing to do. In the other, sometimes called a useless cough, there is no expectoration. It may be tormenting, persistent and painful, but it is not attended by any systemic disturbance. Some of the causes of this latter will claim our attention. This kind of a cough is essentially chronic, since it depends upon a persistent lesion and, although worse in winter, it often persists throughout the year. You will readily understand from the foregoing that I do not propose any panacea for cough as ordinarily met with, nor advise that the chest be less thoroughly investigated in any case of cough; but I shall try to emphasize the fact that there are causes of cough outside the thoracic cavity.

The reflex cough, excited by the presence of a foreign body within the external auditory canal, is noteworthy for other reasons than that of being a mere pathological oddity, as each of you may know from experience if a probe has been passed into your ear, thus demonstrating the peculiar sensitiveness of a part of the canal. The irritation of other branches of the pneumogastric nerve may give rise to cough, and in this connection Dr. Leaming's facetious remark upon the nerve may well have place: "The pneumogastric is a chummy, friendly nerve. It is the source of all our friendships. We dine together, drink together, smoke together by its influence, and in an assembly of people a cough will immediately be answered by coughs through the hall." Prof. W. H. Thompson enumerates fourteen kinds of useless cough, but I am especially interested in only such as are dependent upon some abnormality of the upper air passages.

Beginning with the nose, the subject of reflex cough due to irritation within its passages has been studied for some time. Such a cough is almost invariably set up when the nasal mucous membrane is touched with a probe, or when even a bland spray is used in the nose for the first time. It were easy to wax eloquent over adenoids and faucial tonsils as a cause of cough; but I forbear, for individually and collectively during the last three years we have exhaustively discussed this subject.

That follicular pharyngitis — really lymphoid tissue on the posterior wall of the pharynx — may be a cause of persistent cough has been well shown by Dr. Mayer, who reported twenty such cases, and devised a special instrument to remove the redundant tissue. A relaxed and elongated uvula occasionally causes an annoying tickling and a cough; but this usually innocent bit of tissue has been so sinned against that one hesitates to refer to it in this connection. "Our good daily paper" for a long time bore the advertisement of a man who named nine kinds of palate catarrh, against which he warned the public and for which he had the cure. I have seen cases in which he has amputated the uvula, short, as a step in the treatment but not the relief of the patient.

Dr. McCoy has investigated a nocturnal cough of children which he considers due to the drainage of mucus and saliva toward the larynx while the child lies upon its back — a sudden paroxysm of cough following the entrance of the fluid into the upper part of the larynx.

The most common of the, so to speak, outside causes of persistent cough is the presence of lymphoid tissue and varices at the base of the tongue, and since this is the most important I shall confine myself to its consideration. The foregoing causes should, however, be in mind when searching for the source of a persistent cough which does not yield to the usual treatment.

The entrance to the pharynx is surrounded by a ring of lymphoid tissue, which is made up of adenoids in the naso-pharynx, the faucial tonsils upon either side of the throat, and completed by a more or less irregular mass of lymphoid tissue upon the base of the tongue. Although to the eye these various aggregations of tissue seem somewhat unlike, they all belong histologically to the same class — lymphoid. That at the base of the tongue is sometimes spoken of as the lingual tonsil. It extends from near the circumvallate papillæ toward and into the glosso-epiglottic fossa. It is separated into two lateral halves, being divided in the median line by the central glosso-epiglottic ligament. The degree of hypertrophy of course varies, and it never reaches the large proportions observed so often in the faucial tonsils. I recall one case in which, upon drawing the tongue forward, two large masses presented upon either side of the base of the tongue, and stood up to such a height that a mirror was unnecessary for examination of their upper and anterior surfaces. Usually the hypertrophy does not exceed three-eighths of an inch in thickness and often is not more than one-eighth of an inch. It is made up of irregularly rounded masses of about the same color as the surrounding mucous membrane.

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[1] Read before the Springfield Medical Club, December 14, 1898.

The superficial blood-vessels connected with the lingual tonsils are often much enlarged, standing out like varicose veins, hence the term "lingual varix" as applied to them. This point is worthy of note, as they are themselves sometimes the cause of symptoms referable to the throat; and a rupture of one of these vessels gives rise to hemorrhage which, taken to be of pulmonary origin, is a cause of much alarm. Dr. Robertson says "perilous hemorrhage has occurred more than once" from division of one of these vessels by a galvano-cautery point applied for the reduction of these or of the near lymphoid hypertrophy. My friend Dr. Waterman, of New York, told me of a serious hemorrhage in a case of his own following application of galvano-cautery. Dr. Joal has reported three cases of supposed hemoptysis in which examination of the sputa showed no bacilli nor could any lesion be found in the chest. Examination of the base of the tongue showed bleeding from lingual varices. Others have referred to the same source of hemorrhage, and Lennox Browne has called attention to the taste of blood in the mouth on waking, which he attributes to a venous leakage from this source.

Lymphoid hypertrophy at the base of the tongue has been studied for but a relatively brief period, though its image appears in the mirror whenever this is introduced for examination of the larynx; yet the eye always sought the better known and more interesting region of the larynx, and the explanation of the disturbances which its presence induces was sought in other regions.

Redundant tissue in this locality causes direct mechanical irritation of the larynx. It is situated just above this organ and in front of the epiglottis, whose upper free border often curls forward upon itself, bringing it in contact with the hypertrophied tissue at the base of the tongue. Indeed, cases are reported in which the degree of hypertrophy was so great that the free border of the epiglottis was incarcerated in the mass and had to be pried out with a probe. In singers a most annoying tickling, resulting in cough, is caused by the vibration of the epiglottis in contact with the base of the tongue during vocalization. The following cases are marked examples of this hypertrophy as a cause of cough:

Case I. Mrs. B., age thirty years, consulted me March 6, 1897. Had coughed every winter for twelve years, at times so constantly and violently that she had been compelled to take to bed; on one occasion was confined to bed for a period of six weeks. All her friends considered her case one of tuberculosis, though no pulmonary lesion could be found. She had some small remains of adenoids, the tonsils were slightly hypertrophied, and there was a marked enlargement of the lingual tonsil with the largest varices I have seen. Treatment of the base of the tongue with the galvano-cautery cured the cough, and restored a normal use of the larynx. She had been a singer with a strong contralto voice, but for years was unable to sing because of inability to control the voice, and because of hoarseness which followed any attempt to use the voice. She was a member of a literary society, and though contributing papers was unable to read them because of the same hoarseness. She now sings, and reads her own papers.

Case II. Mrs. R., a large, strong, healthy woman, fifty years of age, complained only of local throat symptoms and a persistent cough. There was a sense of fulness, obstruction and tickling referred to in the throat, and the patient was hoarse. During the winter of 1895–96 she coughed nearly all the time, sometimes incessantly day and night. Ordinary remedies were of no avail. At the beginning of the winter 1896–97 the same experiences were repeated. Because of the local symptoms, and hoping that treatment of the throat might have some influence on the cough, her physician advised her to consult me. She declined to trust herself to a specialist and coughed on for some weeks longer. Finally, on February 17, 1897, she plucked up courage enough to come to my office. Nothing abnormal could be found in the upper air passages except lymphoid hypertrophy at the base of the tongue, and its removal cured the cough. She went through last winter without coughing, and called upon me within a few days to assure me of her perfect comfort.

Case III. Mrs. M., forty-five years of age, consulted me February 1, 1897. She was a frail looking woman, and might properly be spoken of as having a nervous temperament. Seven years previously she had an attack of influenza attended by a severe cough, and each winter since had been tormented by a persistent spasmodic cough, usually without expectoration and which failed to yield to medication. Careful and repeated examination by her attending physician discovered no pulmonary cause of the cough. Spasmodic attacks often occurred at night and some demulcent was kept beside the bed for immediate use. Such violent attacks came on upon waking that the patient dreaded to have morning come. The only abnormality found in the upper air passages was lymphoid hypertrophy and varices at the base of the tongue. This was reduced by the galvano-cautery, with entire cessation of the spasmodic, useless cough.

Case IV. Mrs. S., age forty-six years, a plump, vigorous individual, who said she was in perfect health except for a cough which had tormented her for a year. It began with an attack of bronchitis, which resulted from an exposure to cold and dampness. The general symptoms subsided, but the cough continued. She was under the care of her physician for a long time and finally deserted him for a homeopath, gaining nothing by the change. She came to my office September 24, 1898. The nose and naso-pharynx were normal, but the tonsils, especially the right one, were much enlarged, and she had lymphoid hypertrophy at the base of the tongue. I advised the removal of the tonsils, as well as cauterization of the other hypertrophy, but the patient strongly objected to any cutting operation, and, as there were no symptoms referable to the oro-pharynx, treatment was begun by reduction of the lingual tonsil, and with the accomplishment of this end cough was relieved.

Case V. Mrs. C., of middle age, wife of a prominent medical man of this city, gave a history of a more or less persistent cough since the age of twelve years, often as bad in summer as in winter. There was no period of any duration when she was free from the cough. Examination of the chest by the most careful diagnosticians failed to discover any cause for it. No medication short of narcotics could check it. No locality either at home or abroad could be found where she was free from it. The paroxysms at times have been so prolonged and severe that the chest walls have been made exquisitely painful from the mechanical violence of the cough. At times sleep was so broken, both for herself and, through her, for others of the household, that narcotics in some form and sufficient in quantity to quiet the cough had to be given. On January 28, 1898 (the date of her call at my office), there was no lesion of the upper air passages save at the base of the tongue, where I found hypertrophy and intense engorgement of the blood-vessels. With reduction by the galvano-cautery the cough was cured.

The causes of hypertrophy of lymphoid tissue in this region may be the same as for the growth of the pharyngeal and faucial tonsils. The starting point may well be an attack of measles, diphtheria or scarlatina. While this hypertrophy has long been looked upon as a chronic process and peculiar to adult life, it certainly occurs in children, and there are not lacking records of acute inflammation of this tissue. During this summer two cases of this hypertrophy associated with adenoids and enlarged tonsils in young children came under my observation. In one, a girl of eight years, the hypertrophy was so marked and the symptoms such that it seemed probable that treatment would be necessary, but upon removal of adenoids and tonsils the symptoms referable to the throat, together with the cough, disappeared. Swain saw forty cases of acute inflammation of the lingual tonsil in three years; of these but two went on to the formation of abscess. I recall a case in which, from the history and symptoms presented, I expected a case of severe tonsillitis, and was much surprised on examining the patient's throat to find the faucial tonsils normal. There was marked inflammation of the lingual tonsil, with more pain and difficulty in swallowing than occurs with ordinary tonsillitis. Robinson read a paper before the American Laryngological Association at its last meeting, in which he spoke of this enlargement as a cause of cough in children, but the impression left with me was that in the cases he observed the swelling was acute. In the discussion, Gleitsmann and Rice stated that they had not seen such cases in children. Even though enlargement occur in children, the same train of symptoms is not produced as in adults, for their throats are far less sensitive. For the most part, we may consider this hypertrophy as belonging to adult life and that the process is a chronic one. The tissue increases slowly, and up to a certain limit produces no symptoms, when an acute attack, as of *la grippe* or bronchitis, inducing congestion of the throat, may cause a further increase in thickness sufficient to bring it in contact with the epiglottis, and cough results. The acute attack subsides but the cough remains. Women are much more prone to suffer from the symptoms described than are men, for obvious reasons. I have treated many cases in men, but you observe that all the cases herewith reported are women. They were selected as the most marked cases of which I have notes. From the November number of the *Journal of Laryngology, Rhinology and Otology*, I am able to give the latest word said on the pathology of this tissue as given by a French society of laryngologists. In the normal adult the lingual tonsil is represented by a few scattered follicles, sometimes so few and small that the tonsil may be said to be completely atrophied. The pathology follows the lines of that of the pharyngeal and faucial tonsils. The following affections are met with:

(1) Catarrhal tonsillitis, uncomplicated or associated with diffuse angina.

(2) Phlegmonous tonsillitis, (*a*) suppurative; (*b*) peritonsillar phlegmon, that is, suppuration of the fascia forming the floor of the tonsil.

(3) Chronic hypertrophy. This is common and occurs with equal frequency in both sexes, though, as previously stated, the symptoms are more marked in women than in men. The chronic hypertrophy falls into three clinical groups: (*a*) latent; no symptoms; (*b*) those cases in which the symptoms might be spoken of as local; sensation of foreign body present, pharyngeal tenesmus, desire to swallow, reflex cough, nausea, clearing the throat and phonatory disturbances, in singers hoarseness or loss of voice and change of register; (*c*) nervous reflexes — convulsive tic, etc.

(4) Varicositis at the base of the tongue may give rise to symptoms similar to those of hypertrophy, and also to hemorrhage.

The hypertrophies and inflammations are met with only in adults.

Anatomical differences: ciliated epithelium lines the crypts of the lingual but not of the other tonsils. The distribution of the glosso-pharyngeal nerve explains the pains due to inflammation of the lingual tonsil. The distribution of the superior laryngeal explains the laryngeal reflexes.

Pathological differences: the lingual tonsil is rarely affected in children. Lesions do not extend to neighboring structures, as in the case of the faucial tonsils.

While this paper should deal, strictly speaking, only with the symptoms of cough due to lingual hypertrophy, as an aid to diagnosis other symptoms should be borne in mind. These include tickling and irritation in the throat, and a sensation as if something were present which must be got rid of, causing a constant desire to clear the throat. In singers and public speakers hoarseness and uncertainty in placing the voice is induced, and the throat is soon exhausted in the effort at phonation. This is no doubt the lesion of clergymen's sore throat.

The diagnosis, that is, the assignment to lymphoid hypertrophy its due share in the cause of cough in a given case, may not be an easy matter. The whole upper air tract should be examined. If the nose, naso-pharynx and oro-pharynx are normal, if no other cause of cough be discovered, if the laryngeal mirror shows marked hypertrophy at the base of the tongue, and especially if the epiglottis from its form and position presents its free border in contact with this tissue, then it is reasonable to consider the lymphoid hypertrophy a cause of cough and treatment will soon render diagnosis positive. Bosworth suggests that the examination be made without drawing the tongue forward, as in its natural position the amount of impingement upon the epiglottis is more clearly estimated. He also speaks of an ingenious diagnostic suggestion made by Siefert, who cocainized the sensitive areas, thus giving for a time relief to the symptoms. In treatment the general condition of the patient, as well as the local lesion, usually calls for consideration. As a local application, various preparations of iodine have been recommended with more or less authority, but in chronic hypertrophy of a marked degree more radical measures are called for. The use of a modified tonsillotome, the snare and the galvano-cautery are recommended. Because of the existence of large veins in connection with these growths, in some cases the cutting instrument involves a risk which should be avoided. The snare is applicable only to prominent growths. The galvano-cautery leaves little to be desired in the way of results, though the patient could be pardoned if immediately after treatment he made disparaging remarks of the method. The part should be thoroughly cocainized, and but a small area upon one side treated at a sitting. For a few days following treatment the food should be soft and bland, and use of the voice in reading and singing should not be allowed.

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A NEW METHOD FOR THE OPERATIVE CORRECTION OF EXAGGERATED ROMAN NOSE.[1]

BY J. L. GOODALE, M.D.,
Assistant Physician for Diseases of the Throat in the Massachusetts General Hospital and in the Boston Children's Hospital.

THE patient, a girl, thirteen years of age, was brought to me in June, 1898, with reference to the operative treatment of what may be best termed an exaggerated Roman nose. As seen in Fig. 1, an obtuse angle of 140 degrees existed on the bridge of the nose at the junction of the nasal bones with the cartilaginous structures in front. A heavy beaked appearance was produced, which was a source of acute mental discomfort to the patient. With this was associated a narrow high-arched hard palate, with exposure of the upper front teeth. An operation for the removal of adenoid hypertrophy had been done some years previously and no vestiges of the structure were to be seen at the time of my examination. The nasal septum was vertical and without spurs. The middle and lower turbinates were apparently normal.

With the object of altering the external configuration of the nose to approximate as closely as possible the Grecian type, I performed the following operation June 21, 1898, at St. Margaret's Hospital: The patient was etherized and placed in the Rose position. A pair of short curved scissors with the convexity uppermost was introduced into the left nasal vestibule. One blade was made to penetrate the triangular cartilage at its anterior extremity immediately beneath the integument, and a cut was made along the superior margin of both cartilaginous and bony septa, terminating at the junction of the perpendicular plate of the ethmoid with the cribriform plate. The superior margin of the septum was thus separated from the integument and from the nasal bones by this incision, the outline of which was essentially parallel with the angular outline of the bridge of the nose. The extremities of this angular incision were next connected by a straight cut made through the septum with straight scissors and the portion of septum included between the two incisions was removed with forceps. A septum with a straight superior outline was thus produced.

The next step consisted in depressing the bony bridge of the nose so that it should rest upon the now straight septum. A small nasal saw was introduced with the teeth uppermost into the left nasal passage and the articulation of the nasal and maxillary bones sawn through from below upwards. A similar saw cut was made through the corresponding articulation on the right side. The nasal bones were thus left articulating only with the frontal bone and with each other. A few comparatively gentle taps upon the nasal bones sufficed to break the frontal articulation and depress them, still firmly united with each other, until they came into contact with the upper margin of the septum. With the depression of the nasal bones, the bridge of the nose assumed a straight line from tip to forehead, but a ridge at the same time appeared on either side, formed by the maxillary bone along the line of the nasal articulation. As determined by me previously in experiments on the cadaver, two or three light blows with a protected mallet upon this ridge fractured the maxillary bone, which is here very thin, along a line situated about one centimetre outside the nasal articulation and parallel to it, with the result of depressing the ridge and producing a perfectly smooth and even cutaneous surface. The operation occupied about forty minutes and was attended by comparatively slight hemorrhage. An external splint was applied to hold the nasal bones and the fragments of maxillary bone in proper position. The recovery from the operation was uneventful, being without headache or elevation of temperature. There was a slight nasal discharge for about ten days, which then ceased. The bones were firmly established in their new position in five weeks.

Inspection four months after the operation showed a straight superior outline of the nose, smooth lateral walls, and a perfectly normal skin. The tip of the nose was not decurved, but the upper lip covered the incisors better than before the operation. (Fig. 2.) Examination of the interior of the nose showed a straight septum, while the turbinates presented no discoverable change from their appearance previous to the operation. Nasal respiration and olfaction were normal. No abnormal subjective nasal symptoms were present.

In recapitulation, the essential features of the preceding operation may be said to consist in the excision of the redundant portion of the septum, the separation of the nasal bones from their maxillary articulation, depression of the bony bridge to approximate the newly-formed superior septal margin, finally, fracture and depression of the lateral maxillary ridges, the whole operation being performed intranasally and without wounding of the skin.

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Clinical Department.

ON THE NECESSITY OF REMOVING THE APPENDIX AT THE FIRST OPERATION.

BY JOHN HOMANS, M.D., BOSTON,
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As time goes on I become more and more convinced that one ought always, in operating on a case of appendicitis for the first time, to remove the appendix, and although I did not do this in my first case, in January, 1886, and the boy has grown up strong and well, yet other cases have shown me that until the appendix is removed there is no assurance of freedom from a fatal attack. I do not mean to assert that every case should be operated on as soon as seen, — that is a very different question, — but I do mean to say that whenever an operation is done for the first time the appendix should be removed.

There are many cases when one can say decidedly and with conviction, "I think that things will quiet

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[1] Extracted from a paper read before the Middlesex South District Medical Society, October 12, 1898.

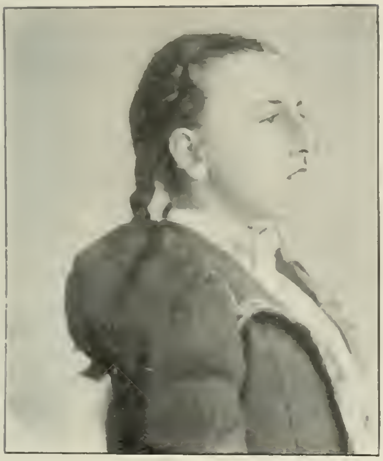


Fig. 1.

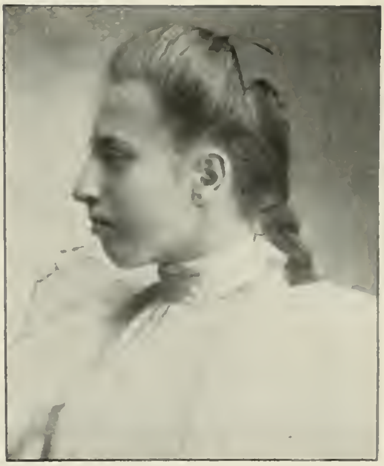


Fig. 2.

down and the appendix can be removed safely a week or two hence." This is often the wisest course of action, but if the abdomen *is opened* to empty an abscess and cure peritonitis, then the appendix should be removed at the same time, even if much searching is necessary to find it. If it is left behind it will be a source of infection, and its presence may, and very likely will, be the cause of a subsequent and, possibly, fatal attack.

Every active surgeon can recall cases where persons have recovered from attacks of appendicitis because abscesses had been opened and drained. Subsequently many of these persons have been so uncomfortable that life has not been worth living, and they have clamored for relief, which has not been obtained until the appendix has been removed. In these cases life is a burden until the abdomen has been relieved of the presence of the appendix. Every surgeon can tell of one or more such cases.

Other cases can be recalled where an operation has been done and the appendix has' been left in the abdomen and the sufferers have been apparently cured, and yet a second or third attack has been fatal. It is safe to say that the appendix might have been more easily and safely removed in the first attack than in the fatal one. These fatal attacks may come on months or years after the first one. I will support my position by quoting two illustrative cases:

In the spring of 1894 a young man, thirty years old, was attacked with appendicitis in Mexico. He was treated with very large doses of morphia, and at length, as a desperate and last resort, started in a special car to reach this city and get relief. He reached St. Margaret's Home in a state of extreme exhaustion and emaciation. An enormous abscess occupied his right lumbar and iliac regions. This was opened at the most dependent point, and several pints of offensive pus and much sloughing tissue were removed. He recovered, gained much flesh and strength, and became robust, so that in the autumn he weighed more than ever he had done in his life, and was ruddy looking and very active. He returned to Mexico, was attacked in the same way in the following summer, tried to reach Boston, but died in the cars on the way. I ought to have removed the appendix after his recovery, before he went back to Mexico.

Another case which will illustrate the point I wish to make is the following:

A machinist, thirty-eight years old, was brought to the Massachusetts General Hospital on April 3, 1898, and gave the following history of his past illness: He was taken with general abdominal pain on October 9, 1897; he kept his bed for a week and the pain gradually became localized in the right side of the abdomen. He did not vomit, his bowels were regular. When first seen, a week from his seizure, he could not straighten his right lower extremity on account of pain. His right thigh was flexed to an angle of 45° and there was a "cake" in the right iliac region, tender to the touch. His temperature was 101°. Four days later an extra-peritoneal abscess, containing about three ounces of pus, was emptied. A gauze wick was left in. The peritoneum was more or less drawn together with catgut, the muscles were partially drawn together and provisional silkworm-gut sutures were put in but not tied. Subsequently the abscess drained poorly and various methods of drainage were practised and the abscess cavity was frequently syringed. At length, six weeks later, the wound healed. The man went to work in about ten days, and after working for three days became feverish, nauseated and had a chill and general abdominal soreness. Bowels loose, tongue heavily furred, right lower quadrant of abdomen more prominent than left, increased muscular rigidity, and a tumor in the site of the former operation. Temperature 102.5°. The abscess was again opened, outside the scar of the previous operation, and about six ounces of foul-smelling pus were evacuated. The abscess was thought to be entirely extra-peritoneal. A long sinus was found running under the cecum, too long to be explored to its depths with the fingers, and another ran into the pelvis. No trace of the appendix was found. The abscess cavity was drained by gauze. The temperature became normal the day after the operation, and at the end of six weeks the patient was entirely well except for a superficial sinus, which he dressed himself.

Two months later, April 3, 1898, the man was brought to the hospital in an ambulance and I saw him for the first time. He had been working steadily and had gained flesh and strength. Two days before entrance he began to have some slight pains, and twenty-four hours later vomiting set in and has continued ever since. Bowels loose, pain persistent, with agonizing paroxysms. No definite point of extreme local tenderness. He found most ease by lying on his side with his knees drawn up; he was in great pain, crying out spasmodically. Tongue dry and coated, abdominal muscles tense, great tenderness everywhere universal throughout the abdomen.

Temperature 100.8°. I made a three-inch incision between the two scars of the former operations and came upon a loop of small intestine much injected. On drawing this aside an abscess cavity was opened and foul pus came out; several other pockets containing offensive pus were emptied, the intestines were injected and here and there covered with fibrinous exudate. The appendix was at length found doubled on itself so that the base and tip lay side by side, and at the point where it was doubled was a small perforation with gangrenous edges.

The appendix was tied off and removed. The abdomen was washed out with salt solution and a gauze drain left in the wound going down to the stump of the appendix. For the next three days the patient was comfortable and the temperature came down to the normal point. In another twenty-four hours there was distress and vomiting with a rapid and weak pulse. No pus could be found in the wound or in the abscess cavity. He was taken away by his wife five days after the last operation and died soon after reaching his home.

I think this last case a typical one as illustrating the wisdom of the dictum that the appendix ought to be removed at the first operation.

The experience gained during the late war is not, according to the *Clinical Review*, to be without its effect upon the army medical department in the matter of general hospital preparedness. It is announced that sixty portable hospitals are under order of construction, each hospital to be large enough to accommodate forty patients. Full equipment is, of course, to be provided, along with ambulance corps and stores of all kinds necessary.

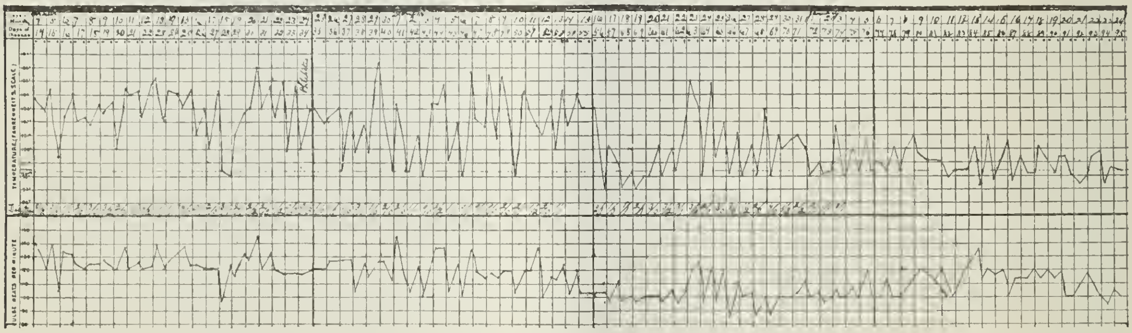
A CASE OF PUERPERAL SEPTICEMIA TREATED BY SUPPORTIVES AND STIMULANTS; RECOVERY.[1]

BY CHARLES M. GREEN, M.D., BOSTON.

MRS. A., aged twenty-three, entered the Boston City Hospital November 4, 1897, with the following history:

She was delivered of her first child eighteen days before entrance, at full term. Three days post partum she began to have fever, and flowed somewhat profusely; her physician this day removed from the uterus a piece of the placenta. Since that time there had been more or less fever, some pain, and moderate lochial discharge.

Physical Examination. — The uterus was slightly larger than normal, the os patulous; a swab from the cervical canal showed numerous pus cells, but no organisms, and the culture was sterile. The right Fallopian tube was somewhat distended and tender, but high in the pelvis; on the left of the uterus was a hard exudate which masked the appendages. The abdomen was not distended, the mind was clear, the pulse 140, the temperature 103.5°. A chill occurred that evening, with a temperature of 106°. The clinical appearance was that of profound general sepsis.



Treatment. — The uterus was curetted, but was found to contain but a small amount of *débris;* the uterine cavity was washed out, and lightly dressed with iodoform gauze. Supportive and stimulant treatment, consisting of alcohol, quinine, strychnia, and liquid food, was prescribed.

Progress of Case. — Nine days after entrance, and again several days later, the patient having in no way improved, although holding her own, she was seen by Dr. George W. Gay and myself in consultation, with a view to considering surgical interference. The right Fallopian tube was still moderately distended; there was a material increase in the exudate on the left, but there was no fluctuation, and it seemed obvious that any surgical approach must be through abdominal incision. The uterus was apparently no longer a focus of infection, and the point to be decided was whether the patient's chances of recovery would be increased or diminished by abdominal section, and removal of probable foci in one or both broad ligaments. It was agreed that surgical interference was at that time inadvisable.

November 20th. The mass on the left was diminishing in size, and was very hard to the touch, while the right tube was less distended, and the uterus more movable; but on the 24th a phlebitis developed in the left leg.

November 26th. The mass on the left was scarcely perceptible; on the right, an indistinct, boggy feeling, and no pelvic tenderness.

November 30th. The mass on the left had disappeared; on the right the tube could no longer be made out. No pus focus could be felt in the pelvis, although the temperature seemed to indicate it. The previous evening there was a severe chill, with a temperature of 105.5°, dropping in a few hours to subnormal.

December 1st. The forty-first day a blood count showed 32,000 white corpuscles; two days later the count was 20,000.

December 11th. The temperature still continued high, at times reaching 107° after severe chills, as indicated on the chart. The pulse was stronger, and the general condition improved. The patient took her nourishment well and slept well. The phlebitis of the left leg had disappeared.

December 16th. There had been no chills for several days, and the patient was feeling very well. Bimanual palpation showed nothing abnormal in the pelvis, except that the uterus was not freely movable.

December 29th. The patient had had a normal temperature for several days. A blood count showed the white corpuscles to be 6,800.

General improvement continued, although on January 16th there was an unexplained temperature of 106°. On the 22d the patient was feeling perfectly well, except for want of strength, and two days later, ninety-five days after entrance, she left the hospital with a normal temperature, a pulse of 100, and with a negative pelvic examination. In the first week after returning home the patient is reported to have had three chills, and she was confined to her bed or room for three weeks; but in March she was up and about the house, with a good appetite and good general appearance.

I have selected this case to report this evening from among many of general puerperal infection that I have had the opportunity of watching. The case affords a good illustration of the results of the so-called old-fashioned treatment. While a single bacteriological examination of the uterine discharge disclosed no organisms, the clinical picture was that of a mixed infection, with a preponderance of the streptococcus, and possibly this patient might have recovered more promptly under serum-therapy, which may yet prove as successful in selected cases of puerperal sepsis as it has already proved in the treatment of diphtheria. Surgical interference, whether by prompt removal of the appendages by celiotomy, or their drainage by vaginal section, might have cut short the convalescence; or, on the other hand, might have cut short the patient's life, or at least have made future childbearing impossible. But in cases like the one I have reported, if the patient can be kept alive until the scavenger phagocyte shall have had time to seize upon and eliminate the offending organisms we may not only restore the woman to health, but also to her complete sexual functional activity.

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[1] Read before the Obstetrical Society of Boston, November 15, 1898.

In conclusion, I would add that throughout the tedious and prolonged course of the case I have detailed, in spite of temperature and chills, I was led to cherish a favorable prognosis by the following circumstances: The stomach bore nourishment and stimulants well, the mental condition remained good, the respirations rarely varied from between twenty and thirty, the leucocytosis gradually diminished, the patient maintained her strength well, and, above all, never lost her courage.

Medical Progress.

RECENT PROGESS IN LARYNGOLOGY.

BY A. COOLIDGE, JR., M.D., BOSTON.

NASAL BACTERIA IN HEALTH.

Park and Wright[1] publish the results of their experiments on this very interesting subject. The question of the bacterial cleanliness of the mucous membrane of the nasal cavities has been answered in widely different ways during the last few years. It is generally admitted that the vestibule is full of bacteria, but varying results have been obtained by cultures taken from the septum and turbinates, well inside of the nasal openings, in healthy persons. In these experiments the secretion from the nasal mucosa of thirty-six individuals was examined, the greatest care being taken that it did not become contaminated in the vestibule. Cultures were made upon different media: in six cases no bacteria were developed; in eight, less than fifty colonies; in eight, between fifty and one hundred, and in fourteen, one hundred. No attempt was made to identify the various forms of micro-organisms, except to search for streptococci, none of which were found in any case. This was in marked contrast to the results obtained from cultures of the nasal mucus from a number of children living in an asylum, in 60 per cent. of whom streptococci were found. The nasal mucous membrane in none of these was quite normal. The bactericidal effect of the nasal mucus was also studied, both by sowing a culture of streptococcus upon the nasal mucous membrane of rabbits, and by collecting nasal mucus and noting its effect upon diphtheria bacilli, pseudo-diphtheria bacilli, staphylococci, streptococci and a coccus obtained from the normal mucus. In no case was the nasal mucus found to have any bactericidal action. Although a number of bacteria are found in normal nasal cavities, it is doubtless true that the mucus from a healthy nose is not as full of germs as might at first be supposed. This comparative scantiness is probably due (1) to the action of gravity, clear serum draining down from regions in the nose to which the inspired air does not have free access washes away the bacteria deposited by the tidal air; (2) to the action of the cilia; (3) to the fact that the nasal mucus, while possessing little or no bactericidal power for most bacteria, is not a good medium for most bacteria to grow in; (4) in some cases, to the filtering action of the hairs; and (5) to the fact that ordinarily the inspired air contains very few pathogenic germs.

The authors conclude that for bacteria which have developed in the blood or secretions of other animals, the bactericidal power of the nasal mucus is little or nothing and cannot be depended upon to prevent an infection from virulent bacteria if they are carried into the nose by instruments.

THE SUPRATONSILLAR FOSSA AND ITS AFFECTIONS.

Patterson[2] calls attention to the region just above the faucial tonsil. This region has been described as an anatomical space by His in 1885. The author considers that this recess is of great importance both from a clinical and pathological point of view, and that it has been so far entirely overlooked by writers on diseases of the throat. It is often mistaken for an enlarged tonsillar crypt, out of which cheesy material can occasionally be turned. An examination of the anterior palatal arch often shows a fold of mucous membrane rising from its free border and stretching backwards toward the tonsil, which it partially covers. This fold is, in well-marked instances, triangular in shape, and to it His has given the name "plica triangularis." At its apex it blends with the arch and becomes lost in the velum palati. The base disappears in the structures at the root of the tongue, whilst the free edge may extend over the tonsil for a variable distance and often be closely adherent to it. At the upper part of the tonsillar region, immediately behind the plica, a probe may be passed into a cavity which extends into the soft palate for a variable distance, and bears an important relation to the tonsil. This space His calls "the supratonsillar fossa."

In the development of this region, below the soft palate, the faucial tonsil is formed by the development of lymphoid tissue in the cleft between the second and third visceral arches, and in the upper part of this space the remainder of the cleft unoccupied by the tonsil constitutes the supratonsillar fossa. Between the fourth and fifth month of fetal life the anterior palatal arch widens and forms the free edge of a triangular fold of mucous membrane which projects behind over the curve in which the tonsil is developed. This is the plica. The free edge of the plica may fall over the opening into the fossa, the main direction of which is upwards and backwards into the palate. As both the plica and the glandular tissue of the tonsil vary much, the fossa may be anything from a shallow recess to a deep cul-de-sac. The edge of the plica may remain free, but it often gets merged in the substructures and cannot be separated from them. As a rule, the upper part of the tonsil remains free, while the lower part may be covered. If the tonsil disappears the plica recedes and approaches the posterior pillar. When the plica is adherent to the tonsil a space is enclosed on the anterior aspect of the gland behind the anterior palatal arch which occasionally becomes filled with cheesy material. Sometimes, by adhesions of the plica to the tonsil, the fossa may be prolonged far downwards behind the palato-glossus muscle almost to the lower jaw. The author looks upon this pouch as a frequent source of infection in peritonsillar abscess.

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[1] Journal of Laryngology, March, 1898.

[2] Journal of Laryngology, Rhinology and Otology, No. 4, 1898.

The mode of development of the lymphoid tissue gives rise to many variations in the fossa. As a rule, the upper part of the tonsil is much less compact than the lower half. Little processes of adenoid tissue may run up from the tonsil in the lining membrane of the fossa, forming fine bands or little eyelets embodied in the membrane. Towards middle life, as the tonsil atrophies the fossa becomes more shallow; it may ultimately be nothing but a mere dimple. The fossa may be the seat of an acute or chronic suppuration, or a receptacle for the collection of dirt or foreign bodies.

THE TREATMENT OF CANCER OF THE LARYNX.

Chiari[3] in an exhaustive *résumé* of this subject comes to the conclusion that the endo-laryngeal method of removing malignant growths of the larynx is very seldom possible. In carcinoma of the cords or ventricular bands, splitting the larynx and removing the soft parts is the best method. In disease of other parts of the larynx, whether the cords are involved or not, a partial or total extirpation is indicated. Partial resection has the advantage of resulting in less functional disturbance, whereas total extirpation has given a larger number of cases in which the disease has not returned. The latter operation has resulted in more cases of death as the immediate result of the operation, but this may possibly be avoided by the recent method of Gluck, who stitches the trachea to the skin, making an external tracheal opening, before the operation for resection. The fact that it is only by great luck that any voice is left after total extirpation should be considered in choosing the operation. The question of when cancer of the larynx is inoperable is dependent upon the question whether there is a probability of being able to remove the whole disease, bearing in mind that thyrotomy is a severe operation, and requires considerable constitutional strength on the part of the patient.

CYSTS OF THE FLOOR OF THE NOSE.

Kelley[4] describes a cyst which must be considered a pathological entity although not many cases have been recorded; it is probable, however, that it occurs much more frequently than this would imply. From the recorded cases the following may be taken as the features of the disease:

It occurs most frequently in females, but is found at various ages. There is either no evident cause or the onset is dated from an acute inflammation of the neighboring tissues. The cyst first shows itself as a small swelling beneath the ala, which sometimes remains stationary for months and gives no trouble, sometimes, however, it enlarges rapidly and causes considerable pain. A fluctuating growth can be felt in the incisor fossa, which is not adherent to the skin or bone. As the growth becomes larger there may be a slight fulness of the lower half of the nose on the affected side; later a distinct protrusion, which is best marked at the attachment of the ala. Inside the nose, when the cyst is small, it forms a grayish hemispherical eminence about the middle or outer half of the floor of the nose, just behind the junction of the skin and mucous membrane. It may extend backwards to the anterior end of the inferior turbinate, but rarely inwards as far as the septum. If the cyst is small it may be opened and cauterized, but if it is large nothing short of its excision is of avail.

These growths have no connection with the teeth. In order to find, if possible, the anatomical conditions which favor the development of cysts in this region, the author made several sections of the lining membrane of the floor of the nose, commencing posteriorly. The lining membrane in almost its entire thickness is made up of glandular tissue; in passing forward and approaching the alar cartilage the membrane increases in depth and the glands are gathered into large and sharply-defined collections with fibrous tissue between. From these glandular collections long ducts pass upward and open on the surface, where its characteristics are intermediate between skin and mucous membrane. These ducts are probably the cause of these cysts, which are therefore really retention cysts.

THE TREATMENT OF HEADACHE BY INTRANASAL USE OF HOT AIR.

Vansant[5] reports several cases of headache which he has relieved by forcible syringing of the nasal accessory sinuses with a stream of hot dry air. In many of the cases the headache was in the frontal region, and suggested the frontal sinus as its source, but this was not always the case. Even headaches of some years' standing, and where the sinuses were not suspected, were relieved either immediately and entirely, or improved. He accounts for it by supposing that the condition causing many headaches consists in the blocking and stoppage of the outlets of the sinuses, especially the ethmoid cells and frontal sinus, with the retention of fluid or gases, or else an absorption of air and consequent vacuum, as is observed in the middle ear. He has employed for this purpose hot air, sometimes medicated, and also nitrous oxide, but he does not describe his technique.

PAPILLOMA OF THE LARYNX IN YOUNG CHILDREN.

The treatment of papilloma of the larynx in young children has for some years been one of the most difficult subjects with which the laryngologist has to deal. The difficulty of an operation without an anesthetic, the danger of an anesthetic without a tracheotomy, a tracheotomy followed by operation through the mouth, the wearing of an intubation tube, and the opening of the larynx in the removal of the growth, have been frequently discussed. Railton[6] reports two cases in which tracheotomy alone was done, the tube worn from two to four years. During this time the papilloma entirely disappeared and the larynx became in every way normal. As one of the disagreeable facts of this disease is the liability of recurrence and the necessity for further operation, these cases can hardly be said to be finished.

Baumgarten[7] recommends a special instrument, introduced by Loeri, of Buda-Pest, several years ago, modifications of which have been used in different cities. This instrument resembles a metallic catheter, the lower edge of the eye being sharpened to cut off and hold pieces of the growth as the instrument is withdrawn. He has been able, by the use of this instrument, to keep papillomata in children well in hand, without the necessity of tracheotomy.

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[3] Fraenkel's Archiv., Bd. 8, Heft 1.

[4] Journal of Laryngology, June, 1898.

[5] Philadelphia Medical Journal, May 7, 1898.

[6] British Medical Journal, February 19, 1898.

[7] Archiv. für Laryngol., Bd. 8, Heft 1.

TREATMENT OF OZENA BY ANTI-DIPHTHERITIC SERUM.

Migind[8] has used this method of treatment since the publication of the paper by Belfanti and Della Vedova.[9] The theory on which this treatment was first tried, that ozena is caused by the presence of a bacillus which must be considered as a weakened form of the bacillus of diphtheria, can hardly be accepted. The author was induced to try this method of treatment on account of the effect of injections of anti-diphtheritic serum upon the mucous membrane of the upper air passages, tending to show that it had a stimulating effect on the diseased mucous membrane. The ten cases treated were all genuine ozena. Ten cubic centimetres of the serum with a strength of about 100 anti-toxin units to each centimetre was the first dose given to adults. The second dose was not given for from eight to twelve days. A very marked effect upon the mucous membrane of the nose was noticed, generally beginning towards the end of the first twenty-four hours, the patient discharging the crusts much more easily. During the following days the mucous membrane of the nose loses its dry and pale appearance, becoming moist and of a natural red color, and also swelling considerably, but without having the appearance of irritation, and mucous secretion appears on the surface. This gradually disappears, but after the second or third injection all the cases observed have shown a lasting improvement. This improvement has in some of the cases been small but in most of them very considerable, one case approaching very near to recovery. No local treatment was used. Among the drawbacks are the painful swelling of the skin around the place of injection, the different forms of skin eruptions, and occasionally of joint affections, especially if too large doses are used.

The author is conducting experiments to find out why this serum has this effect in cases of ozena. Although these experiments are not concluded he seems inclined to believe that the presence of the toxins is of no importance, and that it is the serum alone which acts, and he thinks that as good results may be obtained with injections of normal serum of horses. This is surely a startling statement.

THE ADENOID FACE.

Siebenmann[10] attempts to prove that the narrow high arching palate has no connection with the existence of adenoid vegetations. The palate was measured in a series of persons with and without adenoids. Those free from adenoids showed as large a percentage of high arched palates as those with them, and adenoids were found in as large a proportion of cases where the palate was broad. These high palates occur in people whose nasal cavities and post-nasal space is narrow and consequently more liable to be obstructed by an amount of adenoid hypertrophy which, in a person of broad and large naso-pharynx, would not produce symptoms of obstruction, and consequently would not be seen by the laryngologist. The long, high nose is found in these cases of high palate, and consequently has been received as a type of the adenoid face.

A second set of measurements, taken in cases of ozena, the author believes to prove that this disease is not always accompanied by a short septum.

CHANGES IN MUSCLES AS A RESULT OF PARALYSIS OF THE RECURRENT NERVE.

Friedrich[11] describes the microscopical appearance of the muscles of the larynx in the case of a man who had had paralysis of one recurrent laryngeal nerve for four years. On cross section the fibres were much atrophied; they were oval or round and did not fill out their sarcolemma, and in some places were completely destroyed. On longitudinal section, they were found uneven in thickness, but the longitudinal and transverse striæ were retained. The interstitial connective tissue was in some of the muscles largely increased. The degenerative changes were much more noticeable in the crico-arytenoid lateralis, less in the vocalis, crico-arytenoid posticus and thyro-arytenoid, none in the inter-arytenoid and crico-thyroid.

THE ABSORPTION OF FOREIGN BODIES BY THE TONSILS.

Goodale[12] has studied this subject by injecting carmine into the crypts, which were more or less hypertrophied, at varying intervals of time before excision of the tonsil. He arrives at the following conclusions:

Absorption exists normally in the tonsil and takes place through the mucous membrane of the crypts. The path of absorbed substances in the tonsil is in the interfollicular lymph-spaces in the direction of the larger fibrous trabeculæ. During the process of absorption foreign substances encounter phagocytic action on the part of the polynuclear neutrophiles situated in and adjoining the mucous membrane. Bacteria are normally present in the crypts, but are not, at least ordinarily, demonstrated in the tonsillar tissue.

In view of the preceding facts, the supposition appears possible that bacteria may be continually making their way into the tonsillar tissues, but at the moment of entering ordinarily encounter conditions which terminate their existence.

DIRECT EXAMINATION OF THE TRACHEA AND BRONCHI.

Killian,[13] following the lead of Kirstein,[14] has used a straight speculum for examination of the trachea and larger bronchi. The larynx is painted with a 20-per-cent. solution of cocaine, especially on the epiglottis and posterior wall, and a tubular speculum with a diameter of nine millimetres is passed down through the larynx. In case of a previous tracheotomy the tube may be passed deep into the bronchus through the tracheal wound. When passed directly from above usually the bifurcation only is visible, although the author has passed a speculum into the right bronchus and seen the division into the middle and lower branches. It is necessary to gradually accustom the patient to the passage of the speculum, although there is no trouble in breathing or in coughing.

PROBING THE FRONTAL SINUSES.

Sheier[15] describes the different ways in which the x-rays may be of practical use. There has been much dispute among different authors as to the ease with which the frontal sinus may be probed. Some think that it can be reached in nearly all subjects, while others believe that it is very rare to get farther than the ethmoid cells. The author passed a probe apparently into the sinus in thirty cases. In five the shadow was clearly seen in the sinus, while in the others it was seen to be in one of the ethmoid cells.

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[8] Journal of Laryngology, Rhinology and Otology, August, 1898.

[9] See Boston Medical and Surgical Journal, December 9, 1897.

[10] Münch. med. Woch., September 7, 1897.

[11] Fort. der Med., Oct. 15, 1897.

[12] Archiv. für Laryngologie, Band vii, Heft 1.

[13] Münchener med. Woch., No. 27, 1898.

[14] Boston Medical and Surgical Journal, Dec. 9, 1897.

[15] Arch. International de Laryngol., Rhinol. & Otol., April, 1898.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

MALCOLM STORER, M.D., SECRETARY.

Meeting, November 15, 1898, the President, Dr. F. H. Davenport, in the chair.

Dr. C. M. Green reported

A CASE OF PUERPERAL SEPSIS TREATED WITH SUPPORTIVES AND STIMULANTS; RECOVERY.[1]

Dr. F. J. Cotton, by invitation, read a paper on

ANTISTREPTOCOCCIC SERUM.[2]

Dr. J. G. Blake: The importance of this subject comes home to those of us who have charge of this department at the City Hospital, where every year we see a number of these cases. The unsatisfactory nature of old methods of treatment has forced us to seek new ones, and my interest in the antistreptococcic serum, stimulated by the papers read before this Society last spring by Drs. Williams and O'Connor, led me to try it in my last service in three cases. In two of these, in which the presence of streptococci was demonstrated, an unsatisfactory result followed, and thinking that possibly the fault might lie in the brand of serum employed, I have asked the State Board of Health to make a serum of standard strength.

Dr. Pratt: I have collected the cases of puerperal septicemia that have been reported as treated with antistreptococcic serum, with the following result: cases 118; recoveries 76; deaths 42; percentage of recoveries 64.4; percentage of deaths 35.5. Of course the cases of most value are those in which streptococci were demonstrated in the uterine discharge. Of the 11 cases reported since January 1st, 5 recovered and 6 died, a mortality of 54.5 per cent. In 38 cases in which streptococci were not demonstrated there were 7 deaths, 18.4 per cent. It is probable that in many cases too small an initial dose has been employed. Cox has said that in all grave cases an initial dose of 30 cubic centimetres is advised, to be followed by doses of 10 or 20 cubic centimetres every twelve or twenty-four hours. Dr. Abram points out that in most of the cases where no apparent benefit followed the use of the serum there was no proof that the patient suffered from streptococcic infection. Every case ought to be diagnosed bacteriologically before resorting to the serum.

Dr. Blake: I should like to hear from Dr. Smith as to the desirability or practicability of the State Board of Health establishing such a plant for the manufacture of this serum.

Dr. Theobald Smith: The problem of serum-therapy in streptococcus infections is a difficult one to handle. While, on the one hand, it does not seem wise to discourage practical attempts to make a streptococcus serum before the experimental side of the problem has been cleared up, it must be confessed, on the other hand, that the outlook from the experimental side is not very flattering. The actual production of antitoxins against bacterial and vegetable toxins, whenever such toxins were demonstrable, has been in general successful. Besides the antitoxins of diphtheria and tetanus, antitoxins for vicin, abrin, snake venom, toxins in the blood of eels, and botulismus (meat poison) have been produced. When we come to deal with those bacteria which do not produce a soluble diffusible toxin, but which have poisons either stored up in their bodies or represented in their body substance, the production of a satisfactory therapeutic serum has not yet been placed beyond doubt. It would seem that immunity towards these latter poisons cannot be pushed beyond the endurance of a relatively small dose, and certain investigators have, for this reason, looked upon the bactericidal functions of immune serum as the only hopeful prospect. It is now generally known that through the work of Pfeiffer and others upon typhoid and cholera bacteria such serum, which does not manifest, outside of the body, more than agglutinative power, does actually start bactericidal forces in the animal body when introduced with bacteria.

It is probable that the action of streptococci is subject to the same laws. If this phenomenon should be found generally true of the invasive bacteria (that is, those which enter the body and multiply therein, and not simply act from some one point through absorbed toxins, as is the case with diphtheria), it follows that any serum-therapy, so called, to be successful, must come into play either before and immediately after the time of infection in order that the multiplication of the bacteria may be checked before much poison has accumulated. It is probable that between the strictly toxin-producing and the infectious bacteria transitional species will be found for which an antitoxin may be of some use because of the presence of traces of toxins set free by the bacteria. This hypothesis may account for the favorable results occasionally reported after the administration of streptococcus serum.

As regards the efficacy of Marmorek's serum conflicting reports come from different laboratories, although nearly all trustworthy experimenters have acknowledged that streptococcus serum may be produced in horses which shows distinct protective powers. On the other hand, the curative value seems to be very low. It is interesting to note here that Neufeld failed to notice any protective action of serum from a case of streptococcus septicemia after full recovery.

The most discouraging fact against the use of any streptococcus serum is the repeatedly confirmed statement that not all streptococci are influenced by the same serum. Van der Velde found a difference in protective power as high as 1 to 50. This observer resorted to the device of immunizing the same horse with cultures of two streptococci whose antitoxins excluded any immunizing relationship. He hoped thereby to obtain a sufficiently wide range of action of the resulting serum.

The practical difficulties surrounding the manufacture of serum are thus put into a clear light. Others of more theoretical import might also be cited, such as the loss of virulence towards man resulting from the passage of streptococci through rabbits, and thereby greatly augmenting their virulence towards that species.

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[1] See page 114 of the Journal.

[2] See page 105 of the Journal.

I have no doubt that the mystery which hangs over the whole subject of acquired immunity will be largely cleared up within the next decade, or sooner, and that thereafter the groping after antitoxins will be replaced by definite, purposeful experiments, aimed simply to overcome practical obstacles.

Dr. **Whitney**: I have had no experience with this serum. As regards Dr. Green's case, in which scrapings from the uterus gave a negative culture, I remember an autopsy in which the placental site was free from infection in which the infection had entered by tears in the cervix.

Dr. **Blake** asked as to the mortality usual without the use of the serum.

Dr. **Green** mentioned a series of fifteen consecutive cases at the City Hospital in which no serum was used, all of which recovered. This was of course quite exceptional. Before we can come to any conclusion as to the value of the serum we must get a series of cases treated with the serum and nothing else. In most of the cases we read of the serum was used only as an adjunct to supportive treatment. In such cases we cannot say that they would not have recovered without the serum.

Dr. **Worcester**: I do not quite agree with Dr. Green in demanding so stringent a test. For example, in diphtheria one would not think it necessary to use antitoxin without any supportive treatment.

Dr. **Green**: I still think we must get direct evidence of the value of the serum, and that can be done only by using it alone.

Dr. **Engelmann**: It seems to me that these statistics are rather unfair to the serum, for, as I remember, it has been used chiefly in desperate cases. I have lately seen many reports of successful cases. It is apparently of great importance what kind of serum is used. Marmorek's is apt to deteriorate. I prefer a fresh serum made here. It is unjust to use the serum only in grave cases. I think it is now fair to say that no damage is done by its injection.

Dr. **Blake** spoke of the good results of Marmorek's serum in one case in which he had used it.

Dr. **Worcester**: If the State Board of Health do not wish to undertake the preparation of this serum could they not at least undertake to standardize the various serums on the market? I am led to say this by my wish that the various kinds of tuberculin could be standardized. I understand that they can be ranked as regards potency, and if the State Board could do it it would be a great step towards successful treatment.

Dr. **Smith**: I think it could be done, but it would have to be done as regards different streptococci, for, as I have said, a serum potent against one kind may be inactive against another, and the different groups can be differentiated only by the effects of the serum used. The great difficulty would be to get a serum that would counteract a number of groups. Dr. Smith spoke of the possibility of the transference of streptococci from animals to man.

Dr. **Worcester**: In a case I reported some years ago the husband of the patient had been taking care of a case of puerperal sepsis in a cow (digging out a gangrenous placenta manually) on the very day the child was born, and had handed his wife dressings which she applied to the vulva.

Dr. **Smith**: I have recently isolated the streptococcus longus from a guinea-pig that had recently received milk from an infected cow.

Dr. **Chadwick**: Am I to understand that mixed infection occurred in some of these cases?

Dr. **Pratt**: I have examined the records of 14 cases at the City Hospital, with the following result: streptococci present in 9, staphylococcus albus in 3, colon bacillus in 2, staphylococcus pyogenes aureus in 1, anerobic unidentified bacilli in 2, sterile 3. Three were cases of mixed infection, both streptococci and staphylococci occurring in 1 and streptococci and colon bacilli in 2. The percentage of deaths is generally about 41.

Dr. **Chadwick**: If then in about half the cases other bacteria and not streptococci are the cause, what is the good of injecting this serum? In my twenty years' experience I have of course seen many cases, and I can only say that a thorough and prompt disinfection of the uterine cavity even without curettage will bring about recovery. I have had three successful cases lately, in one of which nothing was done for five days after infection, yet the woman recovered.

Dr. **Blake**: I have suggested to the President of the State Board of Health that it should undertake the preparation of this serum, and if the experience of this Society warrants it, it might be well for us to pass a vote recommending it to do so.

Dr. **Whitney** showed the specimens from a case of double hydrosalpinx removed that day at the Free Hospital for Women. The ends were enlarged to globular sacs, giving them the appearance of the so-called tubo-ovarian cysts.

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THE AMERICAN PHYSIOLOGICAL SOCIETY.

Eleventh Annual Meeting, December 28, 29 and 30, 1898.

(Concluded from No. 4, p. 98.)

Prof. **C. F. Hodge** (Clark University) reported the results of experiments performed in conjunction with Mr. H. H. Goddard to examine the

POSSIBLE AMEBOID MOVEMENTS OF DENDRITIC PROCESSES OF CORTICAL NERVE CELLS.

The method adopted consisted in killing the brains of young or small animals suddenly, thus catching the cells in the condition and relative positions occupied during life. Rested and fatigued animals were compared, and the results go to confirm Demoor's results. The rested preparations show the dendrites and contact granules uniformly expanded, while in fatigue the dendrites are contracted and varicose.

Dr. **E. W. Scripture** (Yale) read a paper on

METHODS OF DEMONSTRATING THE PHYSIOLOGY AND PSYCHOLOGY OF COLOR.

Dr. **G. W. Fitz** (Harvard) read a paper describing

A NEW CHRONOSCOPE.

Prof. **O. N. Rood** (Columbia) read a paper describing

THE FLICKER PHOTOMETER.

AFTERNOON SESSION — SECOND DAY.

On the afternoon of the second day a joint meeting of the affiliated scientific societies was held. The address of welcome, by **President Seth Low**, of Columbia University, was followed by a discussion of the

ADVANCES IN METHODS OF TEACHING.

Prof. E. G. Conklin (University of Pennsylvania) spoke on Zoölogy; **Prof. G. S. Huntington** (Columbia) on Anatomy; **Prof. W. T. Porter** (Harvard) on Physiology; **Prof. H. Münsterberg** (Harvard) on Psychology; **Dr. F. Boas** (Columbia) on Anthropology, and **Prof. W. F. Ganong** (Smith College) on Botany. Professor Porter's paper has already been published in this Journal. Professor Huntington's remarks were in brief as follows: The most marked and important advance in methods of teaching anatomy during the past decade is founded upon the recognition of man's scientific position in the vertebrate series, involving the acceptance of both comparative anatomy and embryology by the instructor in human anatomy as his most valuable aids. The great truths of evolution, while they have long inspired morphological research, have only begun to be utilized by teachers of anthropotomy. Instruction designed to bring into clear relief the main morphological and functional characters of the human body can only be founded on the study of its development and on comparison with the structure of the lower vertebrates. Simple antecedent conditions, both embryonal and as presented in the adult form of lower types, not only constitute the proper starting-point for the consideration of the complicated and highly specialized structures found in man, but they likewise lead the student to the correct appreciation of human regressional structures undergoing reduction.

The comprehension of involved and complicated adult human structures, such as the central nervous system, organs of special sense, peritoneum, etc., is directly facilitated by studying the manner in which they develop. The great advantage of comparative anatomy, from the standpoint of instructor and student, lies in the fact that by its aid a small demonstration of the main human developmental stages is rendered possible on macroscopic objects.

The equipment necessary to the successful prosecution of the method outlined is found in the morphological museum. No single circumstance indicates the changed spirit and conception of anatomical instruction more clearly than the recognition of the museum in the modern sense as one of the most important and essential educational factors.

In the application of the method in practice notable advances are to be recorded in the matter of substituting some object-teaching for theoretical didactic instruction. The development of the courses in practical anatomy and the replacemement of the general lecture by demonstrations of the actual objects to small sections are instances of this advance. The lecture assumes its proper place in the general scheme of anatomical education as furnishing the orderly, connected and systematic thread which is to guide the student in his work, and as presenting the opportunity for discussing the broad morphological principles of vertebrate structure. But the acquisition of the detailed knowledge on the part of the student is only accomplished by direct personal examination and study of the structures in the dissecting-room and demonstration.

As secondary advances in methods of instruction appear the complete pedagogic separation of elementary and advanced students, improvements in anatomical technique, in the preservation of material and in museum preparations, and the introduction of special courses in general morphology.

THIRD DAY.

Prof. G. Lusk (University and Bellevue), in the absence of **W. H. Parker**, read a paper entitled

ON THE MAXIMUM PRODUCTION OF HIPPURIC ACID IN RABBITS.

If a quantity of benzoic acid (as a lithium salt) be fed to fasting rabbits in sufficient quantity to unite with the glycocoll formed in the animal, but not sufficient to produce toxic symptoms, a fixed ratio is found to exist between the hippuric acid nitrogen and the total nitrogen of the urine. The ratio, which is about 1:20, would indicate that five per cent. of the nitrogen of proteid may be eliminated in the form of glycocoll. The ratio is not increased after feeding carbohydrates, nor is it changed after ingestion of gelatine. Glycocoll is probably a cleavage-product of proteid in metabolism to the extent indicated above.

Prof. R. H. Chittenden, Ph.D. (Yale), read a paper entitled

A CHEMICO-PHYSIOLOGICAL STUDY OF CERTAIN DERIVATIVES OF THE PROTEIDS.

Prof. G. N. Stewart (Western Reserve) read a paper entitled

EXPERIMENTS ON THE MOLECULAR CONCENTRATION AND ELECTRICAL CONDUCTIVITY OF CERTAIN ANIMAL LIQUIDS WITH SPECIAL REFERENCE TO BLOOD.

In making these experiments on electrical conductivity there was used blood in which the corpuscles were intact, blood in which the hemoglobin had been removed from the corpuscles and was present in the serum, and blood in which the electrolytes had been removed from the corpuscles and were present in the serum.

The hemoglobin and electrolytes were removed together from the corpuscle by dilution with water. Upon diluting with serum the hemoglobin alone came out, as was also the case in freezing the blood. When the blood was laked by saponin the hemoglobin and electrolytes came out together, as was also the case when blood was heated. By comparing the electrical conductivity of the blood when the hemoglobin and electrolytes had been removed together with that when the hemoglobin alone was removed it was possible to determine the changes in conductivity produced by the removal of the electrolytes. Experiments were also made to show the influence on the electrical conductivity of the blood by bacteria introduced into it.

Dr. J. K. Mitchell presented through **Prof. H. P. Bowditch** a paper on

INFLUENCE OF MASSAGE UPON THE NUMBER OF BLOOD GLOBULES IN THE CIRCULATING BLOOD.

The general results of a large number of observations in healthy individuals and in patients suffering from anemia showed that in health massage increases the number of red corpuscles, and to a less degree and not so constantly their hemoglobin value. In all forms and grades of anemia there is a very constant large increase in the number of red corpuscles after massage. It is evident that our present definitions of anemia are insufficient. An essential part of the description in all of them is that there are defects of number, of color, or both, in the blood. This is not always true. The fault may lie in a lack of activity or of availability in the corpuscles. As there are cases in which normal blood counts and hemoglobin percentages are found when the patients present every external and subjective sign of blood-poverty, and since it is highly improbable that any great reduction in the total volume of blood can long persist, we are driven to the supposition that in these instances the corpuscles have in some way had their usefulness impaired.

DR. P. A. LEVENE, of New York, read a paper on

IODINE IN THE TISSUES AFTER THE ADMINISTRATION OF POTASSIUM IODIDE.

The tissues of hens were investigated as to their power of binding iodine intramolecularly. The eggs were examined from time to time during ten weeks, at the end of which time the other tissues were analyzed. During the first three weeks no other iodine than that in the form of potassium or sodium iodide was found. Beginning with the fourth week the iodine appeared as an organic compound, apparently as iodofat. In none of the tissues could an appreciable amount of organic iodine be detected, with the exception of the bones, where a noticeable quantity of iodofat was present. Comparing these results with all that is known on the subject, it was concluded that only certain keratins, as that of the hair, are capable of binding iodine in the organism; only certain proteids, as that of the thyroid gland, and only certain fats, have the same faculty.

PROF. G. C. HUBER (Ann Arbor) read a paper entitled

A NOTE ON SENSORY NERVE ENDINGS IN THE EXTRINSIC EYE MUSCLES OF RABBITS — ATYPICAL MOTOR ENDINGS OF RETZIUS.

Retzius draws attention to an "atypical motor ending" found in the extrinsic eye muscles of the rabbit. That these atypical motor endings are sensory and not motor nerve endings was argued from the following data:

(1) The nerve endings in question were found mainly in the anterior third of the recti muscles of the eye, while typical motor endings are found in the middle third.

(2) The nerves terminating in this ending present near their termination short internodal segments, branch frequently and are surrounded by a thin sheath of Henle, agreeing in these respects with sensory nerves in other parts of the body.

(3) The ending is found in the connective tissue immediately outside of the sarcolemma of the muscle fibres between which they terminate, while the motor nerves end under the sarcolemma of the nerve fibres.

(4) No other sensory nerve endings have been found in the extrinsic eye muscles of the rabbit, while in other mammals studied such endings may readily be found.

PROF. R. H. CHITTENDEN read for PROF. L. B. MENDEL (Yale) a paper entitled

THE PATHS OF ABSORPTION FROM THE PERITONEAL CAVITY.

There has been an apparent discrepancy in the results of work upon this subject. It has been stated that the rapidity of the absorption from the peritoneal cavity by the lymphatics is greater than that by the blood. In this series of experiments fasting dogs were employed and a very small amount of coloring matter was injected into the peritoneal cavity. The coloring matter first made its appearance in the urine and afterward in the thoracic duct.

DR. P. A. LEVENE (with I. LEVIN), of New York, read a paper entitled

PRELIMINARY COMMUNICATION ON THE ABSORPTION OF PROTEIDS.

A ten-per-cent. solution of iodoproteid was injected into a previously cleaned and ligated loop of the colon and rectum, and the proteid searched for in the lymph of the thoracic duct. The results of three experiments were negative. Thus the experiments tend to corroborate the old theory that proteid is absorbed from the alimentary canal by the blood system.

PROF. E. O. JORDAN, of Chicago, read a paper entitled

THE PRODUCTION OF FLUORESCENT PIGMENT BY BACTERIA.

In this experiment the bacteria, when grown in a culture containing asparagine, to which phosphates and sulphates had been added, produced a fluorescent pigment. It was found that with asparagine and sulphates, in the absence of phosphates, there was no production of pigment, but upon the addition of the slightest amount of phosphates this production occurred. Likewise, it was found that a small amount of sulphates was essential to the formation of this pigment.

PROF. R. H. CHITTENDEN (Yale) reported progress in the investigation undertaken by a committee of the Society of the

NUTRITIVE AND TOXIC PROPERTIES OF THE EDIBLE AND POISONOUS FUNGI.

He also exhibited a

NEW FORM OF SPHYGMOGRAPH.

DR. L. J. J. MUSKENS, of New York, exhibited an

INSTRUMENT FOR MEASURING MUSCULAR TONICITY IN MAN.

PROF. C. F. HODGE described a

NEW BRAIN MICROTOME.

Eleven new members were elected. Profs. R. H. Chittenden, W. H. Howell (Johns Hopkins), F. S. Lee (Columbia), W. P. Lombard (Ann Arbor), and W. T. Porter (Harvard) were elected as the Council for the ensuing year. Professor Chittenden was re-elected President and Professor Lee, Secretary and Treasurer.

Recent Literature.

The Origin and Progress of Renal Surgery. By HENRY MORRIS, M.A., M.B., London, F.R.C.S. Philadelphia: P. Blakiston, Son & Co. 1898.

Under the above title are presented the three Hunterian lectures delivered by the author in 1898, and a fourth, on "Injuries of the Ureters," which appeared in the January number of the *Edinburgh Medical*

Journal, 1898, as well as tables of 267 kidney operations performed by the writer in the seventeen years prior to March, 1898, and others of operations for the relief of calculous anuria. In this work Mr. Morris does not disappoint the expectation that the high quality of his previous publications has taught the profession to form.

The first lecture consists of an historical review of the origin and growth of renal surgery, in which nephrotomy and nephrectomy are dealt with briefly, nephropexy and resections of the kidney somewhat more in detail, and the surgery of the ureter at considerable length and in a more detailed manner. The various operations upon the ureters are concisely described and well illustrated.

The second lecture deals with the subject of renal calculus in an especially interesting and instructive way. The frequency of unsuspected renal calculus, the erroneousness of the diagnosis of nephralgia, and the rarity of the latter condition are emphasized.

The author is a strong advocate for early interference in cases of renal calculus, and it seems to us difficult to escape the conclusions which he presents, and supports by such ample data as are set forth in this lecture.

The third lecture is chiefly devoted to the consideration of calculous anuria. Here too Mr. Morris urges the necessity of operation — nephrotomy — which is of recent application only in this condition. The successful issue of this practice is shown in a comparison of two series of cases, one of forty-eight in which no operation was performed, and one of forty-nine in which operation was done. In the former the percentage of recoveries was 20.8, while in the latter it was 51.

The symptoms and the differential diagnosis of this condition are clearly set forth, and the writer urges the performance of operation as soon as the diagnosis is established.

The fourth and last lecture is a study of Injuries of the Ureters, and is distinguished by the same excellence as those which precede it. These lectures will well repay careful study.

A Syllabus of Materia Medica. Compiled by Warren Coleman, M.D., Instructor in Clinical Medicine and Materia Medica in Cornell University Medical Department. One volume, 16mo., 175 pages. Polished buckram. New York: William Wood & Company.

An attractive book which more than represents its title. It is systematic and suggestive, and so small that students will find it extremely convenient to carry about for use in odd moments. In the fifth section drugs are classified under "Various Groupings." Here appear lists of drugs which produce eruptions, affect the color of feces or urine, reduce Fehling's solution, etc. We are very glad of the opportunity to recommend this useful little work.

Stöhr: Text-book of Histology. Edited by Dr. Alfred Schaper, second American from eighth German edition. Philadelphia: P. Blakiston, Son & Co. 1898.

A new edition of Professor Stöhr's standard text-book is particularly welcome at this time, when there is a growing realization by medical men of the importance of a knowledge of the minute structure of the human body for the proper understanding of its diseases. In spite of the numerous new works on histology recently published, this book still remains by far the best. It is divided into two parts, the first dealing with general technique, the second with microscopic anatomy, under which head is taken up, first, the cells and tissues, then the microscopic anatomy of the organs. There is an appendix containing directions for the use of the microtome. Following each chapter of the second part is a section on technique, where descriptions are given of the methods employed in preparing the tissues described.

The present edition contains much new material, the text being thoroughly revised and new illustrations added. Of these Figs. 208 and 209 of the human kidney from drawings by Dr. Schaper are especially good and are, so far as we know, the only correct representations of this important organ which have ever appeared in a text-book. Fig. 131 of the suprarenal capsule is also deserving of praise. The chapter on the female reproductive organs would have been more satisfactory if a figure of the Fallopian tube had been added to the many excellent ones of the ovary and uterus. This organ is one which from its liability to disease is of especial importance to the medical student, and one the structure of which we find he has considerable difficulty in understanding.

The translation succeeds well in retaining the clearness and conciseness of the original and displays a praiseworthy accuracy in the rendering of technical terms. We must take exception, however, to "excretory duct," on pages 240 and 241, in the description of the salivary glands, when "duct" alone is a better translation of the original "Ausführungsgang," and to the frequent use of "glycerol" in the articles on technique for the more familiar and equally correct "glycerine."

The publishers deserve great credit for the excellent way in which the book has been printed, the illustrations in particular preserving well the delicacy of the original drawings.

The work is one to be recommended to the student and one which the practising physician, and even the professional histologist, will find a valuable book of reference.

The Practitioner's Manual. A Condensed System of Medical Diagnosis and Treatment. By Charles Warrenne Allen, M.D., Consulting Genito-Urinary Surgeon to the City (Charity) Hospital, Consulting Dermatologist to the Randall's Island Hospital, etc. Octavo, 851 pages.

This is a condensed alphabetical system of medical diagnosis and treatment. The octavo is by no means a thin one, and yet the articles, even on important subjects, are necessarily short. Most of them are interspersed with a considerable number of prescriptions. We are not particularly disposed to endorse this sort of book in general; it favors a rather mechanical method of practising medicine. But we can go so far as to say that, for those who desire and require this sort of book, this book is a good one for them to have.

Famine in Russia. — In the trans-Volga provinces starvation is still causing many deaths, although the misery has diminished somewhat in response to energetic measures on the part of the government and private relief associations.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, FEBRUARY 2, 1899.

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THE NEED OF A RECEPTION HOUSE IN BOSTON FOR EMERGENCY CASES OF INSANITY.

At a recent meeting of the Executive Committee of the Hospital Trustees' Association, which comprises the Board of Trustees of the State Institutions for the Insane and for the Epileptics and the Dipsomaniacs, it was voted that a committee be made, consisting of Drs. H. R. Stedman and W. N. Bullard, to inquire into and report upon the best measures to be adopted for the better care of emergency cases of insanity during their detention in jails, police stations, general hospitals, etc., prior to their commitment to state institutions.

It is well known that when insane patients living in Boston are brought to the notice of the Commissioner of Public Institutions on Saturday it is impossible to complete the steps for their legal commitment to a hospital for the insane until the court sits on the following Monday. In the meantime they must be kept in most inadequate quarters, or sent to Deer Island Hospital, which is not designed for the care of the insane, and is totally unfit as a place for the treatment of the early stages of insanity.

Among the number of those who are thus disposed of each year are persons of refinement, who, in consequence of sudden outbreaks of extreme violence, cannot be kept at home, or who, in their delirium, have escaped from home and are picked up by the police. To such confinement at the Tombs or at Deer Island can but be a shock, if not at the time, at least when they are able to realize the experience.

For such cases the establishment, in New South Wales, of reception houses for the insane has been remarkably successful. Houses of this kind properly equipped and with a competent medical and nursing staff would be assuredly of the greatest advantage in caring for the early stages of mental disease, and many cases could be thus arrested in their development and escape the need of asylum treatment. Early treatment would probably be faciliated, since there would be less reluctance on the part of patients and their friends to go to such an institution. This reluctance at present leads to delay, so that illnesses which might have been abbreviated become protracted and incurable, or the sufferer is permitted to commit some overt act of insanity. Economy, in the long run, should result from the diminution of the number of cases going to the asylums and indirectly by a more systematic distribution of cases most appropriate to their mental state.[1]

We wish to arouse the profession to the necessity of investigating this evil by the establishment, through its influence, of a reception house in Boston for emergency cases of insanity. The small number to be cared for would necessitate merely an inexpensive but well-equipped building.

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THE REPORT OF THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD, LONDON, 1898.

The supplementary volume prepared by the medical officer of the Local Government Board for 1897–'98 contains much material of interest to the general practitioner as well as to the sanitarian. The first portion contains a detailed statement of the vaccination officer's returns, wherein it appears that the ratio of cases not finally accounted for (as compared with the total births for the year) was 20.5 per cent. for the whole country, and 24.5 per cent. for London — this percentage having progressively increased from 3.8 per cent. in 1875. The medical officer estimates that for the present year (1898) the number of children born in England and Wales who escape vaccination in one way or another "is probably not much less than one-third of the whole." He further says: "In this way, the country is being prepared for widespread epidemics of small-pox such as have been unknown to the present generation, unless, indeed, the invariable rush and clamor for immediate vaccination on the part of those who have neglected or declaimed against the operation during times of freedom from small-pox should be capable of being so far met in the moments of emergency as largely to mitigate the impending disaster."

With reference to the question of insusceptibility, he states that "the number of consecutive primary vaccinations by the Board's own officers without the occurrence of a single instance of so-called insusceptibility now reaches 107,180."

The Board has made arrangements for the distribution of glycerinated lymph. In this connection, it is interesting to note the report of Dr. Blaxall in the latter part of the volume upon experiments with glycerinated lymph. These experiments related to the viability of the tubercle bacillus in glycerinated calf-lymph to which this microbe had been purposely and abundantly added, and to the subsequent activity of such lymph. He found that the added tubercle bacillus is invariably killed by a month's sojourn in such lymph, and that, after having been thus dealt with, it will not grow in its appropriate culture media, nor produce any pathogenic effect upon the guinea-pig.

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[1] See Report on Mental Diseases, vol. cxxxix, page 472 of this Journal.

As regards the keeping quality of the glycerinated lymph, he finds that at a period nine months subsequent to its having been demonstrably free from extraneous microbes it is potent to cause vaccine vesicles in 100 per cent. of the points at which it was inserted in primary cases.

In that portion of the report which deals with the administrative work of the Medical Department of the Board several reports of medical inspections may be found which are of more than usual interest.

Reference has already been made in the JOURNAL to Dr. Bulstrode's very full report upon Oysters and Disease. In the present report Dr. Buchanan reports still further upon 26 cases in which persons had been attacked with typhoid fever after eating oysters. Twenty-five of these persons had eaten oysters taken from Brightlingsea Creek (a few miles northeast of London), and in 20 cases the facts obtained were such as to warrant the inference that the oysters had been taken, prior to their delivery to different venders, from one or other of two particular oyster-beds in that creek. Dr. Bulstrode in his report of 1895 had drawn attention to the liability of the oysters in this creek to pollution by the sewage of Brightlingsea and had pointed out a particular series of such oyster-beds, located in front of the sewage outfalls, as being especially exposed to pollution. It was from these particular beds that the oysters which had been eaten by twenty of the persons attacked with typhoid fever had been taken, and it was also found that at sundry periods in the course of 1897 infectious matter from persons suffering with typhoid fever in Brightlingsea must have been discharged from the outfalls of these sewers.

In view of these repeated occurrences, it would seem proper to repeat the warning given in a previous number of this JOURNAL, with reference to eating raw oysters taken from beds in tidal estuaries which are exposed to so high a degree of pollution as the Providence River, a degree far greater than that of the localities named in these English reports.

Among the auxiliary scientific investigations reported upon are those of Dr. Klein, with reference to an anaërobic microbe to which he gives the name of "*bacillus enteritidis sporogenes*," which he believes is "intimately concerned in the causation of infantile diarrhea and English cholera."

Another discovery made by Dr. Klein during 1897 is that the *streptococcus scarlatinæ*, which was many years ago suspected of disseminating scarlatina, and which has been found in the blood of scarlatina patients, persists and even recurs in the throat secretions of some of these patients long after they have to all appearances recovered from their illness.

Other matters of general interest in the report are the continued history of the Western Diffusion of Cholera by Dr. Bruce Low, bringing its history down to 1895, the bacteriological researches of Dr. Martin with reference to the growth of the typhoid bacillus in various kinds and depths of soil, and the increasing importance of bacteriology as a test of the purity or impurity of drinking-water.

THE "LANCET'S" CRITICAL AND ANALYTICAL INQUIRY INTO QUACKS AND ABORTION — THE METHODS OF QUACKS.

THE *London Lancet* has done good work in exposing the character of certain advertisements too common in the newspapers and from which the religious papers are not always free, in which cures are guaranteed, on receipt of payment, for "obstructions," "irregularities" and "suppressions," these advertisements being designed to attract women in trouble. It is clearly brought out that the amenorrhea for which remedies are sought generally means pregnancy. Of 183 patients who had amenorrhea, and who presented themselves at the out-patient departments of the large London hospitals, 156 were pregnant, and 12 were young girls at puberty in whom the condition of pregnancy was out of the question, so that of the 171 who might have been pregnant, 156, or 96.5 per cent., were so. Of the remaining 15 cases, 1 patient, age twenty-seven years, single, had primary amenorrhea; 7 patients (4 married and 3 single) had definite anemia; 1 patient, single, had had pelvic peritonitis two years before and had seen nothing since; 1 patient, married, had approaching menopause; 1 patient, married, had fits, and had seen nothing for seven years, and 1 patient, married, had seen nothing since before marriage, some years ago. This leaves 3 patients, 2 who were married and 1 who was single, in whom there was no definite cause for the amenorrhea. The *Lancet* writer, after stating that in none of these cases would the administration of emmenagogues have done any good, concludes: (1) amenorrhea or irregularity of the periods is common about puberty and at approaching menopause; (2) in otherwise healthy married or single women amenorrhea in the great majority of cases is undoubtedly due to pregnancy; (3) where this is not the case, with very few exceptions (3 out of the 183 cases), the condition of the patient or the circumstances under which the periods fail to appear are such as to render unlikely the possibility of pregnancy being the cause. He further reasons that "seeing that the majority of instances in which healthy married women miss a period are cases of commencing pregnancy, it is obvious that such a condition cannot be and is not, as a rule, productive of the ills ascribed to it by the venders of quack nostrums; while equally, as a rule, to attempt to bring on menstruation in such cases is to attempt a criminal abortion."

The occurrence of amenorrhea in cases of anemia or other debilitating diseases, such as phthisis, is beneficial to the patient by avoiding any loss of blood, and is a provision of nature to assist in arresting the progress of the diseases causing the condition.

The *Lancet's* exposure of the knavery of the advertisements is timely. There is a legion of shameless shysters — of whom we have some on this side of the water — who subsidize the newspapers and parade with unblushing impudence their "never failing" specifics, and who have doubtless too long been let severely alone by the medical profession and by the police. The analysis made by the *Lancet's* chemist of many of these nostrums shows them to be composed of such simple and well-known ingredients as sulphate of iron, aloes, colocynth and Glauber salt; in some, traces of rue, apiol and savin were detected. One of the most popular of these nostrums contained aloes, iron and borax. It has been asked whether any real harm has ever been received by taking these "female pills," and we are referred to the evidence given at a certain coroner's inquest lately, to the effect that a woman had been poisoned by large doses of aloes in some emmenagogue pills swallowed to produce abortion. Ordinarily, however, the patent-medicine vender takes care that his medicine shall be innocuous in any dose. He well knows that his nostrums will sell in the ratio of the way they are advertised and the lies that are flaunted about them before the public, not in the ratio of their merit. Quacks often evince in the wording of their advertisements a genius worthy of a better cause, as one can readily see who reads the numerous nostrum advertisements which the *Lancet* has published, giving the proprietors a notoriety free of charge. The credulous are duped with a statement that the testimonials are sworn to on oath as genuine!

We cannot forbear in this connection to make a diversion from the subject of the *Lancet's* special mission, in order to notice one of the Rev. Dr. Talmage's protegés, whose advertisement occupies a whole half-page of the *Christian Herald*; we allude to "Dr. Blosser, the well-known minister of the gospel and medical specialist," who is the "originator" of "the only catarrh cure in the world," and whose testimonials from "eminent physicians," "ministers of the gospel," etc., are read by the "hundred thousand readers" of that religious journal every week. He deserves and shall receive from us a free advertisement.

MEDICAL NOTES.

Congress of Ophthalmology. — The Ninth International Congress of Ophthalmology will be held at Utrecht from August 14 to 18, 1899. The scientific work of the Congress will be divided among three sections, as follows: (1) Anatomy, Pathological Anatomy and Bacteriology; (2) Optics and Physiology; (3) Clinical and Operative Methods.

American Medical Association. — At the June meeting of the American Medical Association, in addition to their regular programmes, the Section on Ophthalmology and that of Laryngology and Otology will devote the morning of the second day, June 7th, to a joint meeting, under the chairmanship of Dr. Casey A. Wood, of Chicago, and of Dr. Emil Mayer, of New York. The subject for discussion will be: "The Relation of Ocular Diseases to Affections of the Nose and Neighboring Cavities." Four papers are to be read on this subject, by invitation, as follows: Dr. Charles Stedman Bull, of New York, on "Some Points in the Symptomatology, Pathology and Treatment of the Sinuses Adjacent and Accessory to the Orbit"; Dr. D. Bryson Delavan, of New York, on "Nasal Stenoses in their Relation to Ocular Disturbances"; Dr. Joseph A. White, of Richmond, Va., on "Eye Troubles Attributable to Naso-pharyngeal and Aural Disturbances"; Dr. J. H. Bryan, of Washington, D. C., on "Diseases of the Accessory Sinuses in their Relation to the Eye." General discussion on the main question.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the two weeks ending at noon, February 1, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 92, scarlet fever 39, measles 297, typhoid fever 5.

Annual Meeting of the Massachusetts Association of Boards of Health. — The annual meeting of the Massachusetts Association of Boards of Health was held last week at the Parker House, Boston. Dr. Hibbert W. Hill, director of the City Laboratory of Bacteriology, read a paper on the "Bacillus of Diphtheria," and Dr. Alexander Burr, of Boston, read on "Hydrophobia," including an interesting account of the recent outbreak in Boston, and the measures taken to successfully control it.

A Case of Small-Pox in East Boston. — A case of small-pox has been discovered in East Boston, in the person of a woman who had recently come from Norfolk, Va. The woman was removed to the quarantine station at Gallop's Island.

An Appropriation for Tuberculosis. — There has recently come before the Committee on Agriculture the question of appropriating $150,000 for the work of exterminating contagious diseases in domestic animals. There was some disagreement among those discussing the measure as to the efficacy and necessity of tuberculin as a diagnostic agent. Dr. Peters, chairman of the Cattle Commission, replied vigorously to the adverse criticism. No definite conclusion has been reached in the matter.

Boston Society of Medical Sciences. — At a meeting of this society held January 24th Dr. H. G. Beyer, U. S. Navy, gave the results of his observations on the effects produced by the 6-mm. rifle and projectile. The experiments were made both on organic and inorganic tissues, and the effects of the wound noted in each case, showing results of great interest and practical value. The rifle experimented with was the new Lee-Mitford, recently introduced into the navy. Dr. Hibbert Winslow Hill demonstrated a modification of the Smith fermentation tube. Dr. W. T. Councilman spoke of his recent work on "Inflammation of the Cornea." He described briefly the normal histology of the cornea and then demonstrated in lantern-slides a large number of preparations, showing the details of the process of inflammation as it occurs in that tissue.

Another Centenarian. — Mrs. Angelique Galipeau, of Northampton, according to reports presumably authentic, celebrated her one hundred and sixth birthday recently. She is said to have been born in Montreal. She is well, can read and sew without glasses, and can sing with remarkable clearness.

NEW YORK.

Public Baths and Gymnasia. — Mayor Quincy, of Boston, delivered an illustrated lecture on Public Baths and Gymnasia before the People's Institute at Cooper Union on January 23d. He argued that it was better to construct baths and gymnasia with money from the public treasury than to depend for them on private philanthropy, and that the providing of baths was just as essential a function of a municipality as the providing of schools. In the education of children physical training should be as carefully looked after as mental culture, and public schools, he thought, should be equipped with both baths and gymnasia. After stating that both Germany and England were still ahead of this country in the matter of public baths, he gave an interesting account of the development and present condition of the public baths and gymnasia of Boston.

The Mortality during December. — The bulletin of the State Board for the month of December shows that there was an average daily mortality during the month of 350 deaths, against 290 in November, and 295 in December, 1897. Influenza became epidemic in this month, and may be estimated to have caused 1,800 deaths in the State.

Miscellany.

SURGERY UNDER DIFFICULTIES.

The following case, reported by E. Matthews Owen, M.D., in the *Lancet* (London) for January 7th, is so striking an example of what may be done under absolutely adverse conditions that we quote a part of the report in full:

> The patient, a steerage passenger, thirty-eight years of age, when lifting a box in a strong gale of wind at 4 p. m. strangulated an old inguinal and scrotal hernia. I tried gentle taxis, ice, opium, and other usual remedies, but all to no purpose. I felt assured that an operation would be required and therefore I was very careful about taxis, not using more pressure than was absolutely necessary. At 8 p. m. I decided to operate, knowing full well that every hour would lessen the chance of success, and the man was rapidly losing strength, vomiting being incessant and the pain exruciating. The rôle of anesthetist I had to entrust to the purser (Mr. Freeman). In reply to my inquiries he said that he had seen chloroform given once and that he was "not afraid"; so I rejoined, "You will do." There was on board the usual amputation case, which was of no use in this operation, and there was also a pocket dressing case. The latter had to supply all the instruments; it contained, luckily, a finger-amputation knife. In the amputation case was a Wells forceps of primitive pattern. The silk used was of the usual braided kind, wound on a card and not too clean. I raked up six needles such as are to be found in pocket cases and are used for sewing up superficial cuts. There were no sponges, but about one-quarter pound of alembroth wool, as well as plenty of lint. Fortunately there was a bottle of iodoform gauze. For antiseptics I had to depend upon a bottle of solution of perchloride of mercury (B. P.), and boric acid, the latter being not too plentiful. Empty beer-cases and a mattress were made to serve as a couch, and the operating theatre was the surgeon's cabin, the available space of which was six feet by five feet and six inches. The patient's feet were against the door and his head was against the bunk. I thought of the theatre of St. Mary's Hospital, where I had spent so many happy and profitable hours during the previous twelve months watching my old friends Owen, Page and Pepper doing such brilliant things. If they could only have seen *my* theatre and instruments and assistants! For assistants I had to have two deck hands, whose sole duty was to keep the patient from rolling off his by no means safe couch, and in spite of every care we were hurled from side to side by the rolling, and more than once assistants, patient, anesthetist and operator were generally mixed up when an extra big sea hit the ship. The patient having been brought under the influence of the chloroform I again tried taxis, with no benefit. After shaving the pubes and disinfecting the skin as well as I could I cut down over the sac, which I rapidly opened, and I divided the stricture (in the pocket case there was a hernia knife). A "mixing up" such as I have referred to above then took place and when we had got back into our respective places I found that from 12 inches to 15 inches of intestines had come out of the scrotum (it was a big hernia). Then another interruption, a mere matter of detail, occurred, namely, artificial respiration had to be performed, the anesthetist having been too liberal with his chloroform. That being successful, I was again at liberty to resume my operation, but having no sponges, and no assistants to look after the exposed bowel, it had to take its chance while I was at the other work. That "chance" was not very bright, I thought, for the bowel was not too warm. I now tried to return the gut into the abdominal cavity, but do what I would I could not coax it back. There were no adhesions at the stricture, but the cause of my not being able to get it back was the presence of so much flatus. I was at my wit's end, with not a soul to consult and with no friendly colleague to offer a suggestion. I decided to perform laparotomy and to draw the bowel from the inside. I made my incision four inches in length in the middle line. There was a large amount of venous bleeding from the engorged abdominal vessels which I could only control with hot water. When this had been stopped I opened the peritoneum and passed my hand within the abdomen and by gentle manipulation from without and within I was able to pass the flatus on and thus get the bowel back into the abdominal cavity. The sewing up of the abdominal wound presented some difficulty, the needles being so short and the abdominal walls thick, and as there was no needle-holder the handle of the shut-up finger-knife had to be used to push the needle on, Wells's forceps doing the rest.
>
> I thought that if the poor fellow lived I should like his hernia to be radically cured, but how on earth was I to get the pillars of the ring together? For I most certainly did not care to bury sutures with such silk as I was using, so I

determined to gather the edges of the pillars like a purse, using one piece of thick silk armed with two of my little needles. After gathering it up I brought both needles out through the skin half an inch apart and an inch or so from the wound and tied the suture tightly. The result was most satisfactory, for the parts became thoroughly consolidated.

The after-treatment consisted chiefly of the patient being rolled from side to side by the motion of the vessel for four days, for it blew hard all that time, but, in spite of everything against him, his temperature never reached 99°F., and on September 28th he walked off the steamer at Melbourne quite well. I heard from him from Tasmania on October 24th that "he never was in better health, that the wounds were only faint red lines, and that he felt nothing whatever of his rupture."

The writer finally concludes with the advice never to despair, however unpromising an operation may appear.

◆

Obituary.

CHARLES FAYETTE TAYLOR, M.D.

In the death of Dr. Taylor, which occurred at Los Angeles, Cal., January 25th, the profession loses one who may justly be termed the strongest force in American influential orthopedic surgery — now well recognized as a branch of the profession in which the American medical fraternity can take personal pride.

Dr. Chas. Fayette Taylor was born in Williston, Vt., April 25, 1827, the son of a farmer. He was educated in the schools of his native town and was graduated in 1856 from the Medical Department of the University of Vermont. After a few years of general practice he interested himself in the treatment of deformities. During a visit to London he paid much attention to the treatment termed the Swedish Movement by Dr. Roth, of London, a pupil of Dr. Ling, of Sweden. On his return he devoted himself to the specialty of orthopedic surgery and began a career which was not only unusually successful but was fruitful of many advances both his own and as a result of his teachings.

He possessed to a marked degree great ingenuity, an intelligent imagination, energy, and great tenacity of purpose. Any one who has had the opportunity to examine the wonderful records of his cases of Pott's disease, many carried on for years through all the discouraging complications of this affection to ultimate cure, will be struck with his remarkable skill in the management of patients from different parts of the country and of the lasting confidence he inspired in those who came under his care.

He carried mechanical appliances to a perfection of careful construction never equalled, but he only used them adapted and altered to each individual case and as meeting the surgical indications as they appeared — altering and changing each appliance with an unusual fertility of resource.

An original thinker, he rejected all tradition unless it stood the test of experience, and this was of the greatest service in his work in a specialty as neglected as was orthopedic surgery at that time. His writings were of great value, forceful and original, and his monographs on the treatment of Pott's disease and of hip disease may be regarded as almost classics.

His energy, through the aid of Howard Potter and Mr. Roosevelt (the father of the present Governor of New York), founded the New York Orthopedic Dispensary, and for many years he served as orthopedic surgeon of St. Luke's Hospital in New York.

His success in the treatment of cases was unusual and well won, his teachings have served as a stimulus to the work of his many followers, who will always owe allegiance to a leader who so often made by his example the path of uncertainty a way to satisfactory result.

Correspondence.

RUBBER BULBS IN INTESTINAL ANASTOMOSIS.

St. Louis, Mo., January 23, 1899.

Mr. Editor: — In your issue of December 8, 1898, under "Medical Notes" your article "nothing new under the sun" is of interest to me. I will allow myself the liberty of enclosing my monograph, and trust that you may find it of some worth.

So much has been written about the originator of these rubber contrivances used in intestinal surgery that I feel some reluctance in approaching you with this subject.

The *Philadelphia Medical Journal* of February 22, 1898, writes, under the title of "Independent Discoveries of Inflated Rubber Cylinders for Intestinal Suture": "We have received letters from Dr. Halsted, who, after considerable difficulty, has at last obtained a copy of Dr. Reder's paper, of which he was in previous ignorance. Dr. Halsted is delighted to acknowledge the perfectly just credit due Dr. Reder, and speaks enthusiastically of the scientific and literary value of his paper."

The *International Journal of Surgery* (New York) writes in its April, 1898, number: "The priority of Dr. Reder's investigation is by no one conceded more readily than by the later experimenters, who independently reached the results described in the communications referred to, and to him belongs the credit of having first devised a mode of procedure undoubtedly destined to prove of great value."

It is pleasant to note that the idea of rubber bulbs for intestinal suture has originated in the minds of such eminent men as Dr. A. J. Downes, of Philadelphia, Dr. W. S. Halsted, of Baltimore, Dr. Geo. Wackerhagen, of Brooklyn, and Mr. Frederick Treves, of London.

That Mr. Treves should have found his rubber bags useless, so much so that he gave them up, is to be regretted.

The rubber cylinder will always be a valued adjunct to intestinal surgery; it will be more appreciated in some cases than in others.

Yours very sincerely,
Francis Reder, M.D.

[Accompanying Dr. Reder's letter is a copy of his article reprinted from the *International Journal of Surgery* for September, 1892, in which he described and figured a rubber bulb for intestinal anastomosis exactly similar to that later proposed by Halsted and others. Dr. Reder appears to have completely established his claim to priority in the invention and description of the rubber cylinders for intestinal anastomosis, and our failure to mention him in our note of December 8th was due to ignorance of his work. — Ed.]

METEOROLOGICAL RECORD

For the week ending January 21st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...15	29.86	40	46	34	55	66	60	W.	W.	23	9	F.	F.	
M..16	30.07	38	45	32	75	90	82	S.	S.	8	12	O.	R.	
T...17	29.76	44	51	36	90	67	78	N.W.	W.	12	10	C.	C.	.01
W..18	30.13	30	40	20	67	41	54	N.	N.W.	14	14	C.	C.	.89
T...19	30.32	26	37	14	51	39	45	N.W.	W.	11	10	C.	C.	
F...20	30.21	36	50	21	40	38	39	W.	S.W.	13	12	C.	C.	
S...21	29.91	38	46	31	57	80	68	S.W.	S.W.	12	13	O.	O.	
☞	30.04	36	45	27	62	60	61			13	11			.13

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, January 21, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York . .	3,438,899	1275	354	7.52	19.52	.32	2.80	1.36
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	277	61	5.40	12.60	1.44	1.44	—
Baltimore . .	506,389	240	65	5.46	13.02	.84	2.94	—
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	144	46	14.00	21.70	4.20	.70	3.50
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	81	25	2.46	36.90	—	—	2.46
Nashville . .	87,754	41	9	4.88	17.08	2.44	2.44	—
Charleston . .	65,165	36	5	—	2.77	—	—	—
Worcester . .	108,240	26	9	3.85	11.55	—	3.85	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	29	5	6.90	13.80	3.45	—	—
Lowell . . .	88,641	37	9	5.40	18.90	2.70	2.70	—
Lynn	66,703	—	—	—	—	—	—	—
New Bedford .	66,340	27	10	—	18.50	—	—	—
Somerville . .	61,101	15	4	6.66	39.99	—	—	—
Lawrence . .	57,263	36	17	30.47	21.16	11.08	5.54	—
Springfield . .	56,501	29	5	3.45	27.60	3.45	—	—
Holyoke . . .	43,424	14	2	7.14	14.28	—	—	—
Brockton . .	37,278	16	2	12.50	18.75	—	—	—
Salem. . . .	36,883	16	4	—	12.50	—	—	—
Malden . . .	34,613	8	0	12.50	50.00	12.50	—	—
Chelsea . . .	33,468	11	2	—	—	—	—	—
Haverhill . .	32,022	17	5	47.04	11.76	—	—	—
Gloucester . .	30,589	8	3	12.50	—	—	—	—
Newton . . .	29,716	—	—	—	—	—	—	—
Fitchburg . .	29,438	15	2	—	20.00	—	—	—
Taunton . . .	28,167	17	1	17.64	—	5.88	—	—
Everett . . .	25,338	12	5	25.00	16.66	—	16.66	—
Quincy . . .	23,549	9	1	22.22	33.33	11.11	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	10	1	—	40.00	—	—	—
North Adams .	20,971	4	0	—	—	—	—	—
Chicopee . .	17,842	12	3	—	25.00	—	—	—
Medford . . .	16,511	6	1	—	—	—	—	—
Newburyport .	14,915	9	1	—	11.11	—	—	—
Melrose . . .	14,032	8	1	25.00	12.50	12.50	—	—

Deaths reported 2,494; under five years of age 650; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 184, acute lung diseases 512, consumption 290, diphtheria and croup 55, typhoid fever 28, scarlet fever 26, whooping-cough 25, diarrheal diseases 20, measles 14, cerebro-spinal meningitis 11, erysipelas 5.

From whooping-cough New York 11, Haverhill 4, Pittsburg 3, Boston and Lawrence 2 each, Cambridge, Gloucester and Peabody 1 each. From diarrheal diseases New York 9, Baltimore and Pittsburg 4 each, Boston 2, Lawrence 1. From measles New York 10, Lawrence 2, Boston and Pittsburg 1 each. From cerebro-spinal meningitis New York 5, Boston and Brockton 2 each, Somerville and Holyoke 1 each. From erysipelas New York 3, Taunton and Quincy 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending January 14th, the death-rate was 18.3. Deaths reported 3,995; acute diseases of the respiratory organs (London) 363, whooping-cough 94, diphtheria 85, measles 68, fever 43, scarlet fever 34, diarrhea 28.

The death-rates ranged from 11.0 in Brighton to 24.0 in Sunderland; Birmingham 16.8, Bradford 20.1, Cardiff 12.6, Gateshead 22.5, Hull 12.9, Leeds 21.3, Leicester 12.9, Liverpool 22.8, London 18.0, Manchester 22.4, Newcastle-on-Tyne 16.2, Nottingham 21.1, Sheffield 17.8, West Ham 14.9.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JANUARY 26, 1899.

Carter, H. R., surgeon. To report at Bureau preparatory to detail for temporary duty in Cuba. January 23, 1899.

Pettus, W. J., passed assistant surgeon. To proceed to Portsmouth, Va., for special temporary duty. January 26, 1899.

Rosenau, M. J., passed assistant surgeon. To proceed to Delaware Breakwater Quarantine for temporary duty. January 21, 1899.

SOCIETY NOTICES.

Suffolk District Medical Society, Surgical Section.— The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, February 8, 1899, at 8.15 o'clock.

"Laminectomy," by Dr. J. C. Munro. Dr. J. C. Warren will discuss the paper and several patients will be shown.

"The Operation for Imperforate Anus, with Report of a Case," by Dr. Farrar Cobb. Dr. H. L. Burrell will show a patient.

Presentation of interesting cases:

"Case of Melanotic Sarcoma with Autopsy Report and Specimens," by Dr. G. S. Whiteside.

"Case of Stricture of the Esophagus," by Dr. J. S. Stone.

The presentation of pathological specimens, instruments, etc., of surgical interest is invited.

Paul Thorndike, M.D., *Secretary*, 244 Marlborough St.

New York State Medical Association, Fifth District Branch.—The fifteenth annual meeting of the Fifth District Branch of the New York State Medical Association will be held in Brooklyn on Tuesday, May 23, 1899.

J. D. Bryant, M.D., *President.*

THE SAMUEL D. GROSS PRIZE.

The second quinquennial prize of one thousand dollars, under the will of the late Samuel D. Gross, M.D., will be awarded January 1, 1900.

The conditions annexed by the testator are that the prize "Shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the successful competitor, who receives the prize, shall publish his essay in book form and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author, in the English language, should be sent to Dr. J. Ewing Mears, 1429 Walnut St., Philadelphia, before January 1, 1900.

Each essay must be distinguished by a motto and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

CORRECTION.

The note entitled "The Oldest Living Yale Graduate," in our issue of January 19th, should have been credited to the *Journal of the American Medical Association.*

RECENT DEATH.

Marcus Fayette Bridgman, M.D., M.M.S.S., died in Boston, January 20, 1899, aged seventy-five years.

BOOKS AND PAMPHLETS RECEIVED.

Medico-Legal Studies, Volume IV. By Clark Bell, Esq., LL.D., of the New York Bar, Editor Medico-Legal Journal, etc. New York: Published by the Medico-Legal Journal. 1898.

On So-called Spasmodic Asthma, Considered from an Entirely New Standpoint with Regard to its Radical Cure. By Ernest Kingscote, M.B., C.M., L.R.C.S., Edin. Reprint. 1899.

A Manual of Bacteriology. By Herbert U. Williams, M.D., Professor of Pathology and Bacteriology, Medical Department, University of Buffalo. With 78 illustrations. Philadelphia: P. Blakiston, Son & Co. 1898.

The Medical News Pocket Formulary for 1899. By E. Quin Thornton, M.D., Demonstrator of Therapeutics, Pharmacy and Materia Medica in the Jefferson Medical College, Philadelphia. Philadelphia and New York: Lea Brothers & Co. 1899.

The Crystalline Lens System; Its Embryology, Anatomy, Physiological Chemistry, Physiology, Pathology, Diseases, Treatment, Operations and After-changes, with a Consideration of Aphakia. By Louis Stricker, M.D., Cincinnati, O. 1899.

A Practical Hand-book of the Muscular Anomalies of the Eye. By Howard F. Hansell, M.D., Clinical Professor of Ophthalmology, Jefferson Medical College; Professor of Diseases of the Eye, Philadelphia Polyclinic and College for Graduates in Medicine, etc., and Wendell Reber, M.D., Instructor in Ophthalmology, Philadelphia Polyclinic and College for Graduates in Medicine. Twenty-eight illustrations and one plate. Philadelphia: P. Blakiston, Son & Co. 1899.

Original Articles.

A CASE OF CEREBRAL SARCOMA OF GREAT EXTENT; EXTIRPATION; MARKED AMELIORATION OF SYMPTOMS; RECURRENCE AND DEATH AT THE END OF SIX MONTHS. REMARKS ON THE ADVANTAGES OF PALLIATIVE OPERATIONS IN CEREBRAL TUMORS.[1]

BY JAMES J. PUTNAM, M.D., AND MAURICE H. RICHARDSON, M.D., BOSTON.

The case to be here reported is of marked interest for the following reasons: First, because it affords a striking illustration of the fact that a cerebral tumor not discoverable at a primary operation may present itself later directly at the opening in the skull; next, because it furnishes another illustration of the fact that a welcome relief from distressing symptoms may sometimes be won through surgical operations in cases in which a cure is beyond our power; finally, it is instructive as showing to what extent mental activity and the power of motion may be preserved in spite of extensive destruction of brain tissue.

The patient, a business man of thirty-eight years, first consulted Dr. James J. Putnam on January 28, 1895, sent for consultation by Dr. E. H. Stevens, of Cambridge, to whose courtesy we have been indebted for notes of the case and other assistance.

He gave the history that three months previously, having before that been in excellent health, he had noticed an impairment in fluency of his speech, and that five weeks later he had become a little awkward in the use of his pen. The following month he spent in the country, with some benefit, and no new symptoms except slight headache were noted until two or three weeks before the date of the visit above referred to.

At that time he began to have attacks of severe headache and vomiting, followed by a sense of prostration; and at the same time his right hand and foot became "numb" and awkward, and the difficulty of speech increased. The speech defect consisted apparently in limitation of the vocabulary, a slight embarrassment of articulation, and hesitation in framing sentences, and was apparently unattended by impairment of speech comprehension or by mental failure. Nevertheless, the face was not paralyzed, and the characteristics of the aphasia which were noted later make it probable that Broca's convolution was not destroyed, though perhaps compressed.

An ophthalmoscopic examination showed that optic neuritis was just beginning, though no impairment of vision had been noticed. Two weeks later it was found that the optic neuritis had greatly increased; and since in other respects also the patient's condition had grown worse in spite of large doses of potassium iodide, he was advised to enter the Massachusetts General Hospital for operation, and thus came under the care of Dr. M. H. Richardson.

The hospital records of February 7th give the following additional facts: The patient's right arm and leg were partially paralyzed, the finer movements being especially impaired. The cutaneous sensibility of the whole right leg and thigh was greatly impaired, and that of the right arm even more so. The urine was normal.

The patient was kept under observation from the 7th of February until the 14th. It having been decided by that time that surgical intervention offered some chance of relief, the patient was prepared for operation. His general condition was fair. He was spare, rather poorly nourished, pale, with a pulse of moderate strength.

First Operation. — The general plan of the operation was to turn back a large bone flap, to explore quickly the presenting brain surface, and to remove, if possible, the neoplasm.

On the 14th of February a large omega-shaped skin flap was turned down from the left side of the cranium. The anterior angle of the flap was at the beginning of the zygomatic arch in front; its superior border extended to within an inch of the median line; its posterior angle was just behind and above the mastoid; its base extended from its anterior to its posterior angle. Next, by means of a large and very sharp chisel, a bone flap was made similar in shape but slightly less in size than the skin flap. The cutting was carried to the dura mater through three-quarters of the circumference of the portion to be removed. The uncut portion or base, extending from the zygoma backward toward the external occipital protuberance, was broken by prying out the upper border of the cut portion. This piece of bone was not very unlike a pot-lid, except that it was pried out and broken, rather than lifted. It consisted of the bone and tissues covering it, attached to the head by only the soft parts, the bone itself, as stated above, having been entirely separated from the skull by either cutting or breaking. An extensive and satisfactory view was thus obtained of the presenting dura mater. The view of the dura was immediately obscured by an alarming hemorrhage from the anterior angle of the flap. It was found impossible to stop this hemorrhage except by plugging the diploë with gauze. The dura mater was next cut in a line parallel to the bone cut, and about quarter of an inch inside of it. The flap of dura thus made was turned down. There was some hemorrhage from the branches of the middle meningeal artery, which was checked by ligature. Bleeding from the arteries of the pia mater was controlled by fine silk threads passed under the vessels with a curved needle. The presenting brain surface was different from the normal in being mottled and dark colored and filled with punctated hemorrhages. A small portion of this brain surface was removed for examination. It was supposed at the time that this was the infiltrated cortex, but it was apparent that if it was, the growth was so diffuse that there was no possibility of removing it. The subsequent history showed that this brain substance was not a portion of the tumor; that the alterations were due to the pressure of the subjacent mass, with the changes from the manipulations of the operation.

The presenting substance was explored with blunt-pointed instruments and with the finger, but nothing suggesting a tumor could be felt. The patient's condition at this time was alarming. The pulse was between 140 and 150, and hardly perceptible. The color and general appearance were bad. Gauze was first packed into the bleeding areas at the anterior angle of the flap. The flap was returned, and stitched into position by means of interrupted silkworm-gut sutures; it was held there also by the pressure of a large sterile gauze dressing, by means of which it was hoped that oozing would be fully checked.

The patient was taken to the ward in a desperate condition of shock and collapse. He was given brandy and cardiac stimulants subcutaneously, coffee and salt solution by rectum. Though there was considerable staining, he finally began to rally, and, once on the mend, he improved rapidly, so that by the end of twenty-four hours he was out of immediate danger.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, November 2, 1898.

For the next two days he not only held his own, but gained a little. The pulse gradually came down; the temperature was normal. Three days after the operation the gauze packing was removed, and the provisional sutures left in the anterior portion of the wound were tied. The patient was now much stronger, and could talk about as well as before the operation. He slept fairly well, and complained of but little pain.

On February 17th it was noticed that the physical signs were about the same as before the operation, except that some numbness was complained of in the left leg. At this time the flap began to bulge. It was apparently pressed outward from below the bone. Being held only by sutures between the soft parts, the bony flap was pressed into the more or less yielding scalp, and a peculiar one-sidedness was produced.

On March 20th the eyes were again examined, and the signs of neuritis (swelling of papilla, congestion, and exudation) were found to be much less prominent than at the previous examination. The anesthesia of the left arm and leg was still present, and was found to involve also the face, tongue, and side of trunk. A simple contact within these areas was seldom felt. A pin-prick was felt, but did not give rise to the usual feeling. Any strong impression caused very distressing sensations, and this was also true of handling the limb; so that unnecessary passive movements had to be studiously avoided.[2] This symptom was a great annoyance, and continued so for a long time.

The power of localizing cutaneous impressions was not good. Horsley at one time asserted that the typical sort of localizing mistakes made in these cases was such that the sensations were referred to a point nearer the root of the limb than the point really touched. This was not true of the present case. Impressions made in the middle portion of the hand were often referred toward the ends of the fingers; those on the palmar surface, to the dorsum. Oftentimes, however, those made toward the peripheral parts of the hand were referred to the neighborhood of the wrist.

The sense of position of the limbs, especially the fingers and hand, seems to have been practically abolished. Its impairment was out of all proportion to that of the cutaneous sensibility.

The speech defect was greater than it had been before the operation; but, neverthless, a whole short sentence occasionally came out, as, "I cannot manage it," — used appropriately with reference to some failure to express himself correctly. The comprehension of speech was fairly good, but not perfect. From this time on, however, his power of expression and comprehension slowly but steadily gained, and he began to move about more and more.

On April 2d he was discharged "much relieved," and remained at home, free from headache and fairly comfortable, and with steady improvement in general nutrition, until May 22d, when he was readmitted to the hospital for further operation because of the continued bulging of the flap over the wound, part of which was evidently due to the pressure of fluid.

Second Operation. — The patient had been fairly comfortable since leaving the hospital. He had not suffered any pain to speak of. The right arm and the right leg were paralyzed. The color was good and there seemed to have been a gain in general condition. The left side of the head presented an appearance of remarkable bulging. The margin of the flap had yielded to a gradually increasing pressure beneath it until it projected outward and upward to an extraordinary degree. The base of the flap, restrained by aponeurosis, dura mater, and skin, had yielded but slightly, if at all; so that the whole suggested a partly open trap-door, from beneath which exuberant masses were trying to escape, restrained only by a thin, glazed and friable scar, which had already given way here and there and was discharging small quantities of a watery fluid. An exploration was undertaken at this time, because it was thought probable that the growth had made its way to the surface of the brain: it was evident that the growth or something else was pressing outward the yielding flap. This had occurred in a case reported by Drs. Walton and Richardson in *The American Journal of the Medical Sciences* for December, 1893. In that case an exploration was made similar to the one herewith reported; the appearance of the brain was very similar. The patient was relieved of his symptoms, but died fifty-one days after the operation. At the autopsy it was found that the tumor, a glioma, had pushed its way through the cortex to the yielding surface of the bone flap. This took place soon after the relief to intracranial pressure following the removal of the flap.

The second operation upon Mr. B. was performed on May 25, 1895. It was at once obvious, after incising the old scar and turning back the flap, that the new growth had made its way to the surface. The scar tissue was carefully dissected from the tumor beneath, and the flap was again turned down. Irregular masses of new growth presented themselves bulging from the cortex and overlapping the bony edges of the cranial wound. The neoplasm was evidently a rapidly growing malignant tumor. It had the gross appearance of a sarcoma, with a distinct capsule, from which the lobulated masses could easily be separated. Dissection was made first with blunt instruments. Then, as the presenting portions were drawn to one side, the fingers were introduced, and the whole separated from its capsule and delivered.

The opening in the skull was large enough to admit the whole hand, by means of which portions of tumor deeply placed could be recognized and detached. The neoplasm seemed to fill almost completely the left half of the cranium. The demarcation between tumor and cerebrum was distinctly made out by the sense of touch, the capsule being fibrous. It was clear that the fingers were not injuring healthy brain substance. The amount removed — more than filling a pint jar and weighing at least a pound — must have occupied nearly if not quite half the space above the tentorium cerebelli, and the unaffected cerebrum must have been excessively compressed, in spite of the extra room provided by the bulging flap.

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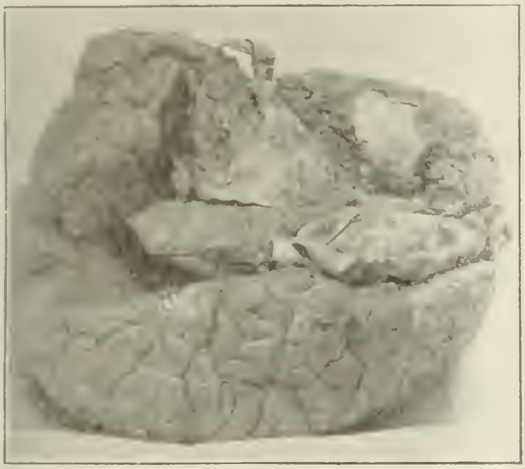
[2] I have seen one other case of cerebral tumor, and only one, where passive motion gave rise to so much pain and distress as was present in this instance. In that case also this extreme sensitiveness came on immediately after an operation done for the relief of pressure symptoms, and was so bad as to seriously complicate the care of the patient. In a third case, a well marked but less severe hyperesthesia was present also after operation. Similar troubles often attend sensory hemiplegia from hemorrhage into the capsula interna. Kirchoff (Arch. für Pscyhiatrie, etc., vol. xxix) has recently studied with care the position of the nerve-tract which has the function in health of conducting painful impressions, and which is probably involved in these cases. — J. J. P.

The tumor was removed as thoroughly as possible from its capsule. As much of the capsule itself was excised as was possible, but its deeper portions were left. The cavity was thoroughly washed out with boiled water, and packed with gauze to control the oozing, which, though considerable, was not alarming. The patient withstood this operation much better than the first.

For three days after the operation the temperature ranged from normal to 100°; pulse 110–120. On May 28th the evening temperature rose suddenly to 103.2°, and to 104.8° at five the next morning. No cause for the rise could be found. The wound was clean. The cavity was more than half filled. There was severe headache. He slept a good deal. Three days later, May 31st, temperature came down to 100°. The cavity was almost entirely filled, apparently with brain substance. There was free discharge of cerebro-spinal fluid. Though the venous oozing was considerable, the constitutional depression was not severe. The cavity left in the cranium was packed full of gauze, after douching with boiled water.



This cut represents the brain lying on its right side and presenting its convex surface. The right hemisphere is intact; the central portions of the left hemisphere are lacking, and in their place are masses of new growth and cicatrical tissue.

On June 8th and 23d, and July 1st, he is reported in the hospital records as steadily improving in general condition, and gaining new words every day. There was also slight gain in the use of the arm, while the sensory conditions remained nearly unchanged. He could read papers and books with pleasure and understanding, though not with the same ease as before his illness began. His comprehension of speech was good, but not quite perfect. The optic neuritis had practically disappeared.

On July 1st he repeated about two hundred words from dictation, and seemed to have improved as regards cutaneous sensibility. A week later he left the hospital, and went for the summer into the country. Here he continued to improve slowly, went twice into the sea to bathe, and enjoyed the society of his family and friends. The fact that he had been able to read freely for some time makes it clear that no right hemianopsia was present, though, unfortunately, no positive test seems to have been made.

On October 14th he walked well, though dragging the right leg. The finer movements of both leg and arm were lost, as in a severe cerebral hemiplegia. The position and motions of the arm at the shoulder had, however, considerably improved. The face was not paralyzed, either for volitional or emotional movements. His power of speech-comprehension was nearly, though not quite, perfect, and he could read to himself with pleasure, though not with normal ease or perfect understanding. He could repeat words fairly well from dictation, though making many such mistakes as "Chusetts" for "Massachusetts," but could not read even simple words aloud. He could write (left hand) a few very simple words and numerals from dictation but with serious blunders. His speech had improved, and a sought-for word would now often come to him after an interval.

The cutaneous sensibility of the hand to contact was fairly good, so that a light touch was felt, though apparently better over the first and second than over the third and fourth fingers [8]; but the power of localization was still poor, the impression being still referred either too much centrad or in the reverse direction,— oftener the latter.

The cutaneous sensibility over the wrist was not so good as on the hand; so that a touch, and even light rubbing of the skin, was not recognized, though a light prick was felt.

His mind was clear, but it was reported that of late he had become irritable and unreasonable to a considerable degree. At this date no trace of the severe optic neuritis was to be made out, except as a slight haziness at the inner side of the disk.

About the middle of December, 1895, the patient walked half a mile to church, and back; and on the day following he drove his horse, himself, to a town eight miles away. The next day he complained of feeling weak, and Dr. E. H. Stevens found at his visit that his pulse was slow (56), and his respiration also slow and of sighing character. He was extremely pale and had severe frontal headache. After this he was inclined to sleep a great deal; but improved sufficiently to walk downstairs on December 23d, three days before his death. The final symptoms were coma, suggesting the coma of diabetes, though the urine was free from sugar. He died December 26, 1895.

The autopsy was made by Dr. W. F. Whitney, with the following result as regards the brain: The entire left hemisphere was found occupied by the growth, with the exception of the occipital lobe, and the lower portion of the frontal lobe, and the temporal lobe. The mass, which proved on microscopical examination to be of sarcomatous character, not only reached the median surface, but bulged toward the opposite side across the median line, making a shallow depression in the corresponding part of the right hemisphere. On cross section (made after the whole brain had been hardened in formalin) it was evident that the new growth was separated by a sharp line from the surrounding brain substance, which, however, was everywhere compressed, and to a great extent destroyed, but not infiltrated, by the growth. This absence of any considerable amount of infiltration bears out the description given by Bruns[4] of the characteristics of sarcomatous growths as compared with gliomas. A considerable part of the internal capsule was apparently free from disease other than that due to compression; and the radiations from the motor speech area and the lower ends of the transverse convolutions, the auditory area, and the occipital lobe, seemed to be uninjured. The tumor reached the surface in the frontal and parietal areas and the median face of the hemisphere, but not at the base. So great had been the compression which the tumor had exercised upon surrounding parts that the relatively uninjured portions at the base and posteriorly evidently represented a larger amount of nerve-tracts still capable of a certain amount of functional activity than would have been thought at the first inspection of the specimen.

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[8] I think we do not sufficiently realize that under certain circumstances the disorders of sensibility of cerebral origin are most marked in certain areas, some of which are perhaps related to special sense organs or muscle groups. I have repeatedly observed, when the hand was somewhat anesthetic from a cerebral lesion, that the area corresponding in a general way to that supplied by the ulnar nerve was more severely involved than that of the median, the difference being, of course, only recognizable on careful testing. As regards the wrist, I have notes of a case of cerebral tumor that eventually grew to be of great size, and seemed at the autopsy to spring mainly from the falx cerebri, which at first caused abnormal and somewhat painful sensations to be felt at the opposite wrist. I have also, in several cases, noticed another curious localization of the distressing sensations associated with sensory hemiplegia from lesion of the internal capsule; namely, that when the face is involved at all in the "numbness" and "burning," etc., which cause so much annoyance, the area about the ear, especially in front of it, is most complained of. — J. J. P.

It is of interest, in the light of this fact, to reconsider the character of the speech-defects and the disorders of sensibility. As regards the former, it is clear that the areas related to the language function had suffered to a greater or less degree in all their parts; since the patient could not, when at his worst, comprehend written or spoken language perfectly, nor repeat or write from dictation well, or read aloud at all, while his vocabulary had evidently suffered a material reduction. Nevertheless, it is important to note that, as time went on and the nerve structures recovered a little from the effects of the severe compression, improvement took place in all these respects, except that of reading aloud, and writing, even with the left hand. In other words, the auditory and motor speech centres and the intervening tracts, and the parts required for comprehension of written signs, retained some efficiency and regained more, while the associating tracts through which written signs were transformed into spoken signs, or, more strictly speaking, into auditory signs, must have suffered serious damage, the result, obviously, of the extensive destruction of the parietal lobe.

It should not be forgotten that in a case of extensive compression and destruction such as this the mode in which the language function suffers is determined not alone by the position of the lesions, but also by the fact that certain parts of this complex function may continue to be performed sufficiently well, in spite of an amount of damage which would seriously disturb other parts.

Thus, even the slightest lesion of the language tracts is sure to hamper the power of expression, whether in speech or writing, while the injury must be considerable which would prevent a person from understanding speech well enough for all practical purposes.

As regards the impairment of sensibility, the most striking defect was that involving the sense of position and change of position of limbs, or the muscular and joint sense, then the power of recognizing contacts, and of localizing impressions. Considering the very extensive destruction of cortex of the transverse and parietal convolutions, the remarkable fact is that a considerable degree of sensibility remained, and one is tempted to think that the preservation of the gyrus fornicatus had partly to do with the result.

It is also, perhaps, worth noting that, in spite of serious injury to the left frontal lobe, partly through destruction, partly through compression, no notable mental changes were observable.

This case shows at once the difficulty in the way of removing subcortical tumors, especially when not well defined by their consistency, and, at the same time, the possibility of securing temporary relief from pain and optic neuritis, and paving the way for a relatively successful secondary operation by giving a chance for the growth of the tumor towards a large opening in the bony case of the skull.

A good many cases of this general nature have been reported, in some of which quite a number of secondary operations have been done, with more or less temporary benefit; but we have found none where a tumor so wholly out of reach at first became later so manifest. It may be assumed that the only tumors which eventually protrude in such a manner, or are obtruded by the intracranial pressure, are, with perhaps rare exceptions, large growths, such as are little likely to be removable entire, even at a second operation.

The question is a proper one, whether the amount of relief obtained in this case was such as to encourage one to repeat the experiment in another similar case. It is certain that this patient's friends would say, "Yes." To see a near relative fall suddenly from health and good prospects into the toils of a relentless malady, and strike no blow in defence, is almost intolerable. If the suffering from constant headache and approaching blindness is added, the danger of death from the operation or its immediate effects becomes, in the eyes of some persons, an inconsiderable risk. Others cannot look at the matter in that way, and a conscientious surgeon must admit that between the danger of a rapid fatal issue — which is considerable — and considerable improvement, even if only of a year or two's duration, there is a chance that the operation, while prolonging the downward course for some weeks or months and removing some distressing symptoms, may add new complications and discomforts.

The recent address by Bergmann[5] contains a valuable discussion of this question, and a reference to statistics of results by Auvray and others. No surgeon or neurologist can fail to respond to his plea for more accurate diagnosis as the basis of advice to the patient, and for a full recognition, and just statement to the patient's friends, of the dangers involved. The writers have both had reason to appreciate the importance of the adverse possibilities to which Bergmann alludes, and more besides, — the risks of death from cerebral anemia hastened by etherization, from secondary intracerebral hemorrhage into a vascular tumor, and from causes unknown. Yet, although the cautions which these experiences indicate must be borne in mind, it is still more important that we should learn — by study of the cases of favorable or relatively favorable issue, like the present, and from those where we first learn, to our regret, through the post-mortem examination, that an operation might have resulted favorably — to become sensitive to the indications which point to the possibility of a good result.

In a case observed many years ago by Dr. Putnam, where the patient died after an unusually long pre-mortal stage, the autopsy showed the presence of a large fibroid tumor, attached by a slender pedicle to the sphenoid bone, and deeply compressing an otherwise sound frontal lobe.

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[4] Die Geschwülste des Central-nervensystems.

[5] Die chirurgische Behandlung des Hirngeschwülste. Sammlung klinischer Vorträge, No. 200.

In that case, the very fact that the last stage of the illness was so prolonged, associated with the clear evidence that the left hemisphere was the seat of a large growth, yet not one which had destroyed deep-lying tracts, ought, perhaps, to have excited suspicion of an extracerebral tumor. The whole mass, in this case, could have been removed, up to the last day, with complete recovery of the patient.

One thing seems to us fairly clear, and that is that the physician and surgeon ought to be willing not only to furnish the patient and his friends with a fair statement of the reasons for and against operation, but ought to throw the weight of their own opinion strongly into one or the other scale. To the patient's relatives and friends the best statement of *pros* and *cons* generally brings bewilderment and not enlightenment. The physician alone can realize the meaning of his words, and form an image of the distressing events which are to be balanced against each other; and he can tell better than the patient's relatives, after taking their social and financial and temperamental circumstances into consideration, which decision it would be best for them to make. This is a duty which it is often a cruelty for him to shirk. He may also remember that both the patient and himself owe some slight sacrifice to the welfare of the community, to which knowledge only comes through experience.

THE HYPODERMIC INJECTION OF SILVER NITRATE OVER THE COURSE OF THE VAGI IN THE TREATMENT OF PULMONARY CONSUMPTION.

A PRELIMINARY REPORT.

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About twelve years ago it occurred to me that the lung lesions which are found in pulmonary consumption do not represent the primary morbid changes in this disease, and that they are one of a series of superficial manifestations which are fundamentally dependent on a neurotic basis in which the vagi are seriously implicated. Further study has gone far to substantiate the correctness of my original impression, and has led to the conviction that a rational therapeusis of this most formidable affection naturally rests on a nervous pathology. Hence my armamentarium in the treatment of phthisis has for some years consisted principally of nervous stimulants, like strychnine, electricity, phenacetin, etc. More recently I began giving local attention to the vagi in the region of the neck by massaging, kneading, and compressing them through the overlying textures. These measures seemed to be of benefit so far as the cough, expectoration, and oppression in the chest were concerned, but it soon became evident that their influence was not far-reaching enough to be of decided value. About this time I learned of the usefulness of vagus stretching[1] in severe cough associated with exophthalmic goitre, and also in epilepsy, and thought of testing this operation in the treatment of phthisis, when it appeared to me that probably the subcutaneous introduction of some active although conservative irritant, like nitrate of silver, immediately over the course of the nerves in the neck might furnish the stimulus necessary to arouse them out of their abnormal condition. An effort was made to carry out the idea, and after many trials and failures it was found that from four to seven minims of a two-and-a-half-per-cent. solution of pure silver nitrate (Merck's) answered the purpose best in the greatest number of instances, although several cases required as much as five minims of a five-per-cent. solution to bring about the desired inflammatory reaction. The point which has been selected for its administration is immediately over, or slightly behind, the pulsating carotid artery in the region of the neck, midway between the angle of the lower jaw and the clavicle. Other points along the artery have also been chosen. In order to avoid puncturing the carotid artery or its neighboring jugular vein, it is important to lift the skin between the thumb and forefinger of the left hand and introduce the needle just under the elevated skin. The silver solution alone produces considerable local pain immediately after its introduction, and in order to avoid this it is very necessary to precede it with an injection of five minims of a two-and-a-half-per-cent. solution of cocaine hydrochlorate.

The following plan has thus far been found the most practical for the introduction of these agents. Inject the cocaine solution; detach the syringe from the needle, and let the latter remain in the puncture. Wash out the syringe with water, draw the silver solution into the syringe, attach the latter to the needle, and throw in the required amount.

The local visible effects of the injections show themselves in nodular, sometimes in diffuse, swelling, and in redness and pain; but in no instance have these products become extremely pronounced. Small abscesses have occurred about a dozen times, and a slough once, in about three hundred injections, and two of these were produced by using too strong a solution of silver in the early stage of the experiment. Neither the rupture and discharge of the abscesses, nor the small slough in one instance, had any detrimental influence on the patient.

The number of injections which are necessary depends on circumstances. As a rule, it is a good plan to begin by giving one injection on the side of the neck on which the affected lung is situated.[2] In a week or ten days this is to be repeated, unless the original or previous injection is followed by too much irritation. In urgent cases due to excessive coughing I have repeated the injections in three or four days. As a rule, it seems best to concentrate the injections on the affected side, and to give an occasional one on the opposite side.

During the last five months I have used nitrate of silver injections on 40 phthisical patients, which were treated longer than a month, and which for convenience sake are divided into incipient[3] (7), advanced

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[1] Stretching of the Pneumogastric Nerve. M. Jaboulay, New York Medical Journal, May 7, 1898, abstracted from Lyon Médical, April 17, 1898.

[2] On investigation it will be found that pressure over the course of one vagus in the region of the neck produces more pain on one than on the opposite side in most phthisical persons, and that this supersensitiveness usually corresponds with the side having the affected lung.

[3] Incipient: cases with beginning physical signs, some emaciation, cough, expectoration, etc. Advanced: cases without excavation, but with emaciation, much cough, expectoration, loss of appetite, etc. Far advanced: excavation, with marked emaciation, cough, expectoration, etc.

Tabular View of the Condition of Forty Phthisical Patients Before and After Receiving Nitrate of Silver Injections divided according to Stages. No Patient treated for a Month or Less is Included.

INCIPIENT CASES.

No.	Age.	Time under observation.	Weight when first seen.	Loss or gain.	Cough and Expectoration.	Physical Signs.	Remarks.
1	38	6 weeks	145	Neither	Disappeared	Very few remained	Asthmatic phthisis. Lost 8 pounds in month before treatment.
2	36	2½ months	109	G. 4	Very much improved	Disappeared	
3	18	2 months	117½	G. 9	Very much improved	Improved	Rheumatic element in this case.
4	25	5 weeks	119½	G. 3	Much better	Improved very much	Colored patient. It is well known that phthisis in this race responds slowly to treatment.
5	25	4 months	109	G. 16	Disappeared	Disappeared	Hemorrhagic form.
6	27	6 weeks	119 at time of first injection	G. 10	Disappeared almost wholly after first injection	Very much improved	Lost 1 pound in 3 days preceding first injection; afterwards gained at once. Weight at standstill previous to third injection, then an immediate gain of 3 pounds in 2 days. Patient colored.
7	60	16 weeks	137 at time of first injection	G. 32	Very much improved	Disappeared	Lost 2½ pounds in 4 days preceding first injection.

ADVANCED CASES.

No.	Age.	Time under observation.	Weight when first seen.	Loss or gain.	Cough and Expectoration.	Physical Signs.	Remarks.
1	23	2 months	106½	L. 7	Very much better	Improved	Extremely erethistic case.
2	18	3 “	113	L. 6	Improved	“	Attendance irregular.
3	29	2½ “	113	G. 2	Improved greatly	“	Marked family history of phthisis.
4	44	3 “	149	L. ½	Much improved	“	Two weeks after first injection weighed 155 pounds.
5	24	2½ “	149	L. 2	Much improved	“	Hemorrhagic case.
6	30	3 “	126	Neither	Almost entirely relieved for some time	“	His profuse night sweats also ceased after injections.
7	38	4 “	105	Neither	Almost entirely gone	Very few remaining	Improved very much in general strength.
8	29	1½ “	125	L. 2	Almost entirely gone	Much improved	Asthmatic phthisis.
9	30	2 “	114½	L. 7	Very much improved	“ “	Although she lost in flesh she is doing very well.
10	52	2 “	125½	L. 1	Marked improvement	“ “	At first lost in weight then rapidly regained it.
11	28	2½ “	133	G. 7	Improved greatly	“ “	From last account a return of hemoptysis.
12	65	2 “	139½	L. 1	Improved much	“ “	Is doing remarkably well.
13	21	2 “	134½	G. 4½	Cough subsided after first injection	“ “	Is working.
14	42	3 “	133	G. 3½	Very much better	“ “	During first month's attendance reached 140 pounds.
15	38	4 “	96½	G. 13	Entirely gone	Much improved. Gone except dulness	Abscess formed at seat of injection. Is at work.
16	41	3 “	130	G. 6	Relieved entirely	Much improved	Lost in weight at first, then rapidly increased.
17	69	3 “	132	G. 11	Almost entirely relieved after first injection	Disappeared almost	Rapid recovery.
18	42	6 weeks	137	G. 16	Practically relieved. Cough unusually severe	Much improved	First 6 days gained 7 pounds. Marked gain after each injection.

FAR ADVANCED CASES.

No.	Age.	Time under observation.	Weight when first seen.	Loss or gain.	Cough and Expectoration.	Physical Signs.	Remarks.
1	23	2 months	117½	L. 4	Some relief	Same	Complicated with laryngeal tuberculosis. Lost 5 pounds in two weeks preceding the injections.
2	38	5 weeks	102½	G. 2	Improved	Improved	Night sweats, vomiting and appetite improved at first.
3	25	5 weeks	108	L. 2	Improved much at first	Remained about same	Vomiting, appetite, night sweats, general strength, sleep, dyspnea much improved during first four weeks. Died recently.
4	41	2 months	110½	G. 1	Improved	Improved at first	Appetite, weight, strength, night sweats much improved at first. Died recently.
5	34	3 “	118	Loss not known	Improved much, which lasted until death	Improved	Injections improved appetite, strength and night sweats. Died.
6	38	4 “	111	L. 9	Very much improved	‘	Improved for 3 months in every way. Then exhaustive diarrhea. Died.
7	36	4 “	80½	Loss not known	Improved. Also relieved persistent tickling in larynx	“	Improved greatly during first 3 months. Now has diarrhea and will probably die.
8	43	2 “	102½	Loss not known	Very much improved after first injection and remained so until death occurred	Improved much at first	Diarrhea set in and death was caused by exhaustion.
9	55	3 “	106	G. 1	Very much improved at first	Same	Gained much in strength at first.
10	16	2 “	105½	G. 2½	Very much improved after each injection	“	Complicated with laryngeal tuberculosis.
11	19	3 “	131	L. 4	Very much improved	“	Appetite and strength improved.
12	36	2 “	98	G. 1½	Improved	Improved	Appetite and strength improved.
13	39	2½ “	95	G. 2	Improved	“	Tendency to diarrhea.
14	32	3 “	103½	L. 1	Very much better	“	Doing remarkably well.
15	47	2½ “	117½	G. 5½	Very much better	“	Doing very well.

(18), and far advanced (15) cases. The general effects of the injections on some of the symptoms and condition of these cases are briefly described in the following analysis:

Cough and Expectoration. — When these injections were first undertaken, it was entirely with a view of benefiting the cough and expectoration in this disease, and it was therefore gratifying to find that they fulfilled this anticipation. With but few exceptions these symptoms improved in a marked degree not only in the incipient and advanced cases, but in the great majority of the far advanced cases. This was so striking that it could not be mistaken. Besides relieving the cough and expectoration, the injections had a good influence on dyspnea, and oppression in the chest; and, as several patients expressed it, gave greater freedom in breathing.

Sleep. — It was noticed that many of the patients slept better. This was probably due to the fact that they did less coughing during the night than previously.

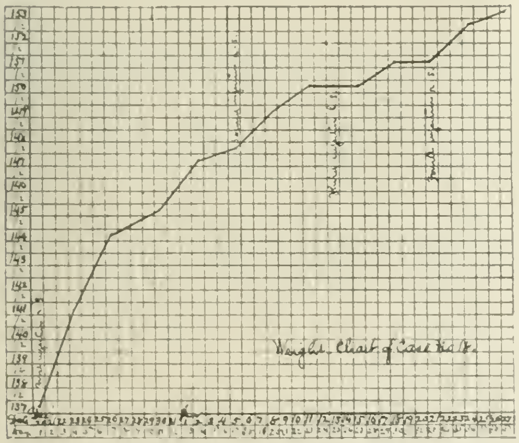
Appetite. — This function was improved in most of the patients, and in many to a marked extent. This was of course most noticeable in the incipient and advanced cases, although in nine of the far advanced cases the appetite was remarkably increased.

General Strength. — This was greatly benefited in most of the incipient and advanced cases, and also in a number of the far advanced ones. This is probably accounted for by a betterment in the digestive function.

Physical Signs. — In many of the incipient and in some of the advanced cases there was noticed a rapid improvement in the physical signs. This was so frequently observed that it could hardly have been merely coincidental.

Weight. — As has already been stated, these injections were solely begun for the purpose of alleviating the phthisical cough and expectoration, and it was surprising therefore to find that they also exerted a most beneficial effect on the weight. The gain in weight was observed chiefly in the incipient and advanced cases, but was by no means confined to these, as will be seen in the following table. The internal medication in all these cases was as simple and kept as uniform as possible throughout the experiment — a number of the patients receiving nothing but peppermint water.

The following chart graphically illustrates the immediate effects of the injections on the weight:



It will be seen in this example, which refers to patient No. 18 in the list of advanced cases, that the weight increased ten and a half pounds in seventeen days after the first injection. At this time another injection raised the weight two and a half pounds more in six days, when it came to a standstill. The third injection, on the twenty-fifth day, raised it a pound higher in three days, when it came to another standstill. The fourth injection, on the thirty-third day, raised it two pounds more in six days, when the last observation was taken. None of the other patients gained so rapidly as this one did, although No. 6 of the incipient cases gained seven pounds in twelve days after the first injection, and three pounds in two days after the third injection; yet the direct effects of the injections on the weight and other conditions were just as apparent in most of the cases that did well. This was especially true of Nos. 3 and 7 of the incipient cases, and Nos. 11, 15, 16 and 17 of the advanced cases. Whether these effects are lasting time alone can determine, but the above histories show that they are at least of decided temporary value.

The deductions which may be drawn from this limited experience with the silver nitrate injections are (1) that their best results are obtained in incipient cases, both in regard to the symptoms and physical signs of phthisis; (2) that in most of the advanced cases of this disease they have a good and in some instances an exceptional influence on the symptoms and physical signs; and (3) that in the great majority of the far advanced cases they ameliorate the cough, expectoration and some other symptoms temporarily, but have little or no influence on the local condition of the lungs.

In conclusion, I believe that there is much reason for expecting that when this method, even in its present undeveloped state, is combined with other good hygienic, dietetic and medicinal treatment, such as most of my patients did not receive, the practical benefit will be greater than that represented above. And, moreover, this investigation incidentally points out that the silver injections may play an important part in the therapeutics of asthma, chronic bronchitis, and in the prephthisical stage in the young which is indicated by a poor and capricious appetite, loss in weight and strength, anemia, etc.; thus verifying the practice of the eminent Dr. Graves, who, more than fifty years ago, advised the employment of setons beneath the clavicle at the age of puberty whenever phthisis was apprehended.

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STUDIES IN SERUM DIAGNOSIS.

BY RICHARD C. CABOT, M.D.,
Physician to Out-Patients, Massachusetts General Hospital,

AND F. L. LOWELL,
Harvard Medical School.

IN connection with the summer service in the male medical room at the Out-Patient Department of the Massachusetts General Hospital 376 tests for Widal's clump reaction were made.

We were investigating three points:

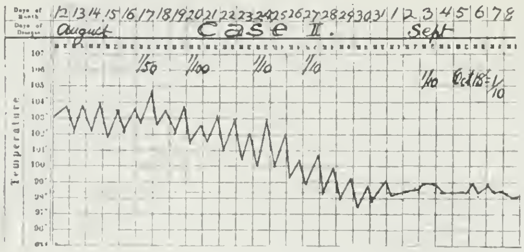
(1) The frequency of the reaction in non-typhoid cases.

(2) The frequency of a reaction persisting after convalescence in typhoid.

(3) The intensity of the reaction at different periods of the course of cases of typhoid.

I. CONTROL CASES.

In the first group there were 204 cases without history of typhoid; all were negative, with a dilution of 1 to 10 and a fifteen-minute time limit (see below under Technique). This group includes seven cases in negroes, and one baby whose mother had typhoid during pregnancy. In many of these cases the result of the test was of considerable assistance to us in diagnosis. Others were tested simply for statistical purposes.



II. TYPHOID FEVER.

In three cases patients with typhoid, who presented themselves at the out-patient room, the Widal reaction was present, although they did not seem much sick. The diagnosis of these cases was confirmed by the later course of the fever in the hospital.

III. SERUM TESTS AFTER RECOVERY FROM TYPHOID.

Ninety-eight cases were tested; 39 of these had previously been in the hospital, and there passed through undoubted attacks of typhoid, the Widal reaction being then present in the blood. These persons presented themselves at the out-patient department in answer to postal cards asking them to call there. Thirteen out of 39, or just *one-third of them, still showed a positive Widal reaction.* These figures are practically identical with those of E. Rénard,[1] who got 35 positive reactions out of 104 cases tested.

Of our 39 cases the Widal reaction persisted in 5 cases out of 10 for from one to three months after convalescence; in 1 case out of 5 it persisted six months after convalescence; 7 cases out of 24 persisted seven to eighteen months after convalescence. The longest period in our series during which the reaction persisted was fifteen months, but no cases were tested in this series unless the Widal reaction had previously been found in the blood, and as the earliest tests made in the hospital were in October, 1896, we could not examine any cases at periods over two years after convalescence. One of these cases showed clumping at 1 to 100 dilution three months after convalescence (time limit, fifteen minutes); at 1 to 200, no clumps. Besides these 39 cases of whose diagnosis we were sure, we tested 49 others who *said* that they had had typhoid. In 34 of these the attack dated from more than seven years before; in 25 of these the attack dated from less than seven years before. *All of these were negative* without exception, but we do not attach much value to the results, as we are far from certain of the diagnoses.

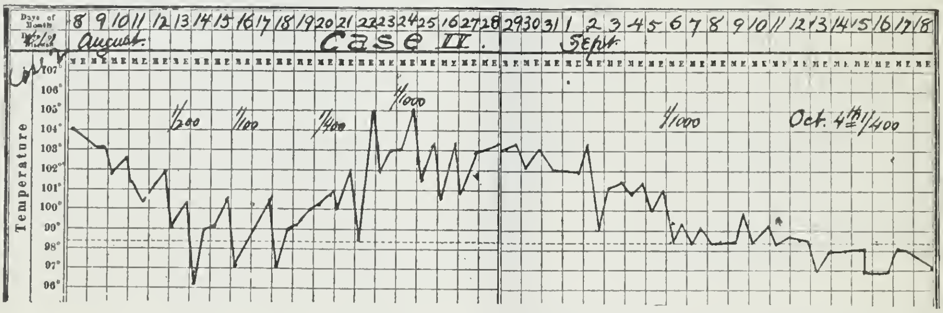
IV. QUANTITATIVE TESTS OF THE INTENSITY OF THE REACTION.

In this part of our work our results are very fragmentary, owing to the difficulty of following cases for long periods and the amount of labor involved in quantitative work. Nine cases were studied. We have only space to quote four of these here.

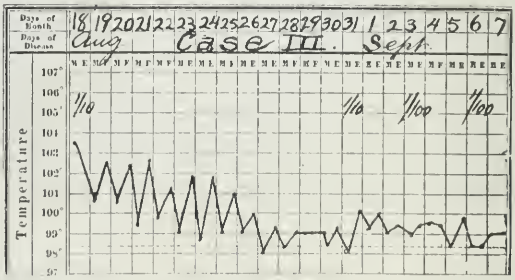
Case I (see Chart I) was of moderate severity and uncomplicated. The serum reacted in dilution of 1 to 50 on the fifth day after entrance, and of 1 to 100 three days later. But over a week before the temperature reached normal the clumping power had fallen to 1 to 10, at which figure it remained until the patient went home, nearly two months later.

This case contradicts Courmont's dictum, that a fall in clumping power during lysis means relapse or complication.

Case II (see Chart II) exemplified a considerably higher clumping power than any other in our series. The agglutinating power fell during the lysis of the original attack, rose again in relapse, reaching then a higher point than in the original attack, and maintained for at least two weeks, and, presumably, more, the power to clump in dilutions of 1 to 1,000. Even as late as one month after the fall of temperature to normal the serum still clumped at 1 to 400.



Case III (see Chart III) simply shows how the clumping power may rise after the temperature has reached normal.



Case IV (see Chart IV) forms a marked contrast to the others in our series, in that the reaction disappeared before the patient was out of bed, instead of persisting into convalescence, as is usually the case.

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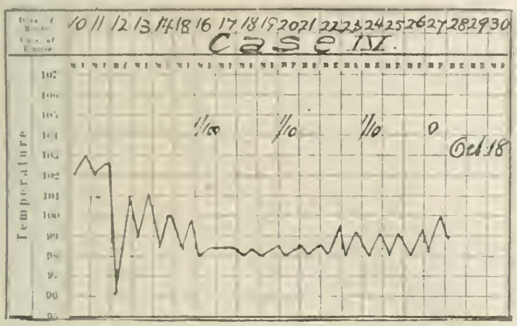
[1] Thèse de Paris, 1897.

Technique. — As has been already said, the 376 tests here summarized were made in an out-patient clinic and without further laboratory facilities than form part of the furniture of a physician's office. No thermostat was used, the agar stock cultures being simply kept at room temperature. Bouillon transplantations from these were made about every third day.

The whole blood in fluid condition was used in every case. A single drop of blood expelled into five drops of water (the same medicine-dropper being used for both the water and the blood) was mixed in a test-tube. A drop of this mixture added to a drop of bouillon culture of typhoid bacilli gives a 1 to 10 dilution, which was that used in most cases. Very little blood and very little bouillon are thus required.

The remaining four drops of the blood and water can be used to make higher dilutions. If, for example, we dilute one drop of our blood-and-water mixture with eight drops more water, and then add a drop of this mixture to one drop of bouillon culture, we have a 1 to 50 dilution.[2] Similarly,



1 drop of blood and water + 18 drops of water + 1 drop bouillon culture = 1 to 100 dilution.
1 drop of blood and water + 98 drops of water + 1 drop bouillon culture = 1 to 500 dilution.
1 drop of blood and water + 198 drops of water + 1 drop bouillon culture = 1 to 1,000 dilution.

Thus with an original outlay of *one drop of blood and five drops of bouillon culture* we can make dilutions of 1 to 10, 1 to 50, 1 to 100, 1 to 500, and 1 to 1,000, or any other five dilutions we choose. Water is the only thing we need much of.

The time limit used in all these tests was fifteen minutes.

SUMMARY.

(1) The Widal test can easily be carried out in out-patient work.

(2) 204 cases of disease other than typhoid tested; all with negative results.

(3) 39 cases of sure typhoid tested at periods of from one to 18 months after defervescence; 13 of these reacted positively, 1 at a dilution of 1 to 100.

(4) 9 cases tested quantitatively; 1 case reacted at 1 to 1,000 for several weeks. No data of prognostic value obtained.

INTRAVENOUS INFUSION IN SHOCK AND HEMORRHAGE, WITH A REPORT OF EIGHT CASES.

BY DANIEL FISKE JONES, M. D., BOSTON,
Surgeon to Out-Patients, Carney Hospital.

Transfusion of blood is a measure which has appealed to medical men of all ages, for since the time of Ovid we hear of occasional attempts to make use of it. Apparently, however, its dangers and difficulties have outweighed its benefits, and at the present time it is practically never used, its place having been taken by the more recent and useful measure *infusion.* By *infusion* we mean the injection into the subcutaneous tissues, or into a vein, of some fluid other than blood, for the support and stimulation of the patient. The first heard of intravenous infusion — the subject of this paper — was in 1677, when an attempt was made to use milk in this way, the experiment resulting in the death of the patient. From that time to within a few years intravenous infusion has scarcely ever been heard of; it is a very recent therapeutic measure, and one which is not yet generally employed. If, however, one will read the more recent literature on the subject, he will be convinced, we think, that it is a measure of the greatest value in saving life.

Carefully conducted experiments on dogs by Bosc and Vedel[1] show that a solution of sodium chloride, between 0.5 per cent. and 0.7 per cent., is to be preferred for intravenous infusion. A 0.7-per-cent. solution has more stimulating power than a 0.5-per-cent., or a still weaker solution, and the beneficial effects which it produces are more lasting. It has also been demonstrated that calcium chloride and potassium chloride added to the normal salt solution will keep up the action of the heart longer than normal salt solution alone. Infusions of distilled water, strong salt solution, and milk have proved fatal in every case. Ordinary water may be used in case of necessity, but it should not be used in large quantities, or often.

The solution used at the Massachusetts General Hospital is a modification of Ringer's solution: it is calcium chloride 1½ grains, potassium chloride 1 grain, sodium chloride 90 grains, water 1 quart.

The technique of intravenous infusion is so simple that nobody need feel that it is necessary to have a surgeon at hand, or even another physician to assist, for it can be done very easily with the aid of one person. There are four points which should be noted when infusion is undertaken; these are:

(1) Careful asepsis of arm, apparatus and solution.

(2) Care to get all the air out of the tube before introducing the canula.

(3) Care to have the solution free from particles.

(4) The use of a probe-pointed canula, and not a sharp-pointed needle.

With these points in view, there is comparatively little danger in the proceeding; in fact, there are in recent literature no reported cases of death caused by infusion, nor have we been able to learn of any ill effect in about 70 cases at the Massachusetts General Hospital. In experiments upon the lower animals unconsciousness is produced when the pressure of the solution is considerable, but consciousness returns as soon as the pressure is lowered.

The temperature of the solution, it is generally stated, should be 100° F.; but we should urge that it be considerably above this point, for the hotter the solution the greater its value as a stimulant. An initial temperature of 108° F. to 110° F. is well borne, — the fluid is cooled from one to two degrees before reaching the circulation.

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[2] 1 drop of bouillon, 1 drop of water (out of the original *blood-and-water* mixture), 8 drops of water added, 10 drops of liquid diluting 1-5 of a drop of blood (1-5 : 10 :: 1 : 50).

[1] Compt. rend. de Soc. de Biologie, Paris, 1896.

The amount of the solution to be injected at one time varies with the rapidity of the injection and with the quality and tension of the pulse. A thousand cubic centimetres, repeated when necessary, is generally much better than a larger amount given at one time.

The following cases have come under my personal observation. In all but two of the cases the modification of Ringer's solution which is given above was used for the intravenous infusion. It should also be stated that before infusion was resorted to stimulation was carried on by large enemata.

Case I. J. B., age sixty, male. Operation, nephrectomy, at 11.30 a. m., December 20, 1897. The condition before operation was very poor. There had been constant hemorrhage from the kidney for several months. Suprapubic cystotomy had been performed three weeks before. After the nephrectomy the patient's condition was critical, and he grew steadily worse, in spite of enemeta and hypodermic stimulation. At 1.30 p. m. infusion of 1,000 c. c. Patient responded well, — much quieter, with pulse of fair volume at the wrist. At 3.30 p. m. he was unconscious, pulse could not be felt at wrist, respiration very shallow; infusion of 1,000 c. c. Patient responded fairly well, and partially regained consciousness; he then failed slowly, and died at 6 p. m.

Case II. Mrs. W., age fifty-five. Surgeon, Dr. M. H. Richardson. Operation, cholecystectomy, at 11 a. m., February 15, 1897. Condition before operation poor: long-continued pain and jaundice. Condition after operation that of profound shock. At 2 a. m., February 16th, the respiration became very rapid and shallow, the pulse could not be felt at the wrist, and the patient was unconscious. Infusion of 1,000 c. c. Patient responded well; pulse regular and of fair volume; consciousness partially regained. At 5 a. m. Cheyne-Stokes respiration, pulse imperceptible. Infusion of 1,000 c. c., with good response, the effects lasting much longer than those of the first infusion. Condition remained about the same until 8.10 p. m., February 16, when she died.

Case III. Mrs. D., age forty. Surgeon, Dr. M. H. Richardson. Operation, nephrolithotomy, at 5 p. m., March 5, 1897. Condition before operation very poor: pyonephrosis for one and a half years. After operation patient regained consciousness, but the respirations were shallow, and the pulse was weak and rapid; patient restless. There was considerable oozing from the cavity of the kidney. At 6.30 p. m. condition much worse. Infusion of 1,000 c. c., with excellent result. At 10.30 p. m. patient unconscious, extremities cold, lips blue, body covered with a cold perspiration, jaw jerking with inspiration. Infusion of 1,000 c. c. Consciousness partially regained, pulse fair at wrist, and extremities warm. At 2.30 a. m., March 6th, her condition was precisely the same as before the last infusion. Infusion of 1,000 c. c. Responded well, but soon began to fail, and died at 2.30 p. m., March 6.

Case IV. W. V., age forty-five, male. Surgeon, Dr. M. H. Richardson. On March 14, 1897, patient thrown from wagon. Probable fracture of liver, with internal hemorrhage. Condition before accident good; condition after accident that of great shock. Three hours after accident condition extreme, — gasping respiration, no pulse at wrist, and patient unconscious. Infusion of 1,000 c. c., with very little effect. Pulse responded for a short time, but patient soon died.

Case V. W., age forty, male. Surgeon, Dr. M. H. Richardson. On February 21, 1897, fracture of base of skull, with multiple injuries and considerable hemorrhage. Condition before accident good; condition after accident that of severe shock and hemorrhage. Patient continued to fail, partly because of the continued oozing from the crushed area. At 10.15 p. m. no pulse found at wrist, patient very restless, respiration gasping. Infusion of 1,000 c. c., with good effect. At 2.30 a. m. patient covered with a cold sweat, pulseless, jaw jerking with inspiration, unconscious. Infusion of 1,000 c. c. Responded well, became conscious in a short time, and from this on held the ground gained; recovery.

Case VI. DeL., age fourteen, male. Surgeon, Dr. John Homans. On March 5, 1897, amputation of thigh for sarcoma. Condition before operation very poor. During operation subcutaneous infusion of salt solution. This, however, was not absorbed well, and the condition continued to grow worse, — the patient became pulseless, and the respiration was almost imperceptible. Intravenous infusion of 1,000 c. c. Patient responded well; operation completed; recovery.

Case VII. Mrs. B., age forty. Surgeon, Dr. M. H. Richardson. On April 12, 1897, nephrectomy for tubercular pyonephrosis. Condition before operation poor. After operation there was considerable shock and a good deal of hemorrhage from the field of operation. The patient's condition grew worse, until the pulse became imperceptible and the restlessness extreme. Subcutaneous infusion of 1,000 c. c., with very little effect. One-half hour later intravenous infusion of 1,000 c. c., with good results, — extremities became warm and pulse fair at the wrist; recovery.

Case VIII. Mrs. F. Surgeon, Dr. M. H. Richardson. Laparotomy for small ovarian cyst on April 28, 1898, at 8 a. m.[1] Condition before operation fair; condition after operation good. Ten hours later the patient was in collapse from internal hemorrhage; the pulse was too feeble and too rapid to count at the wrist. Patient conscious, extremities cold, respiration very rapid. Infusion of 1,200 c. c. of salt solution at 108°F. Immediately after this the wound was opened, a bleeding artery tied, and the blood and clot wiped out of the abdomen. The wound was then closed. At the end of the operation the pulse could easily be felt at the wrist, and was of fair vol-time. The pulse grew steadily worse for three hours, when 1,000 c. c. of salt solution was given. The pulse responded well, and after about an hour held its own.

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[1] Note by Dr. M. H. Richardson. — The operation in this case was a simple ovariotomy for a tumor of the left ovary about as large as an orange. The pedicle was tied in two sections with silk. At 5.30 p. m. the patient was seen and reported by Dr. Brewster to be in good condition. At 8.30 p. m. the night nurse reported her condition to be alarming. I found the patient at 8.45 p. m. white, restless, gasping, and pulseless, with cold extremities and wet skin. The case seemed to me absolutely hopeless, and a reopening of the abdomen unjustifiable.

As the patient's only chance seemed to lie in stimulation, Dr. Jones did infusion. The effect upon the pulse was in the highest degree encouraging. I was able to open the abdomen, which was filled with blood, to find and to tie the bleeding artery, and to clean out most of the blood. This was my first personal observation of intravenous infusion for hemorrhage. I have never before seen a patient with such a pulse and general condition recover; in my experience all cases of internal hemorrhage so advanced as this was have proved fatal before operation could be performed. (See paper on Extra-Uterine Pregnancy and Pelvic Hemorrhage: Annals of Surgery, December, 1894.) In this case operation was advised against, but I am convinced that infusion saved the patient's life. In another case of internal hemorrhage, in hemorrhage from extra-uterine pregnancy, for instance, I should at once do infusion, and attempt to operate.

On the second day after operation the temperature had risen to 103°F., and there was a general papular eruption. On the fifth day there was a double parotiditis. From this time, however, there was a gradual lowering of the temperature to normal; recovery.

We have in this list of eight cases but three of the class generally considered the most favorable for infusion, — that is, cases in which shock or hemorrhage occurs in comparatively vigorous individuals. Of these three, one died and two recovered. Of the five remaining patients, not one was in good condition, — their recuperative power was far below normal; yet of these five, two recovered. Although the death-rate of the eight cases is 50 per cent., it is to be remembered that the cases were all desperate ones. In the fatal cases life was undoubtedly prolonged from four to twenty hours. So marked was the effect in three, one could not but believe that, had the patients had a little more recuperative power, recovery would have followed.

In regard to the value of infusion in shock or hemorrhage, this group of cases seems to show that the nearer the case approaches that of pure shock, other things being equal, the less effective is infusion.

It will be noticed that when infusion was done more than once it seemed to be more effective the second time than the first, and its good results seemed to last longer.

In Cases VI and VII there is a chance to compare subcutaneous with intravenous infusion. In neither case was the subcutaneous infusion effective, probably because of the extremely low condition of the patient and the consequently poor absorptive power. Although subcutaneous infusion is undoubtedly effective when there is no immediate need of the solution, and when there is enough vitality left to absorb it, intravenous infusion is much to be preferred when the need is immediate.

We have in this list eight cases, with four deaths and four recoveries. If out of eight desperate cases four can be saved, and if in about seventy cases there are no ill effects, what is there to prevent a more general use of infusion in severe cases of shock and hemorrhage? Wiggin reports a death; but in this case the patient had a weak heart, and three quarts of the solution was rapidly given. Undoubtedly one reason why this measure is not more frequently resorted to is the difficulty in always having the solution and apparatus ready. This, however, is not a valid excuse, for the canula is very small, and the salts can be carried in vials, in saturated solution, ready to use in a given quantity of warm water. The tubing and funnel can be found in almost any household.

Perception of X-Rays by the Blind. — According to the *Medical Record*, a French physician has recently reported to the Académie des Sciences the result of his experiments on blind children. Among two hundred and four he found five boys and four girls who were able to recognize the Röntgen rays. Some saw the x, cathodic, and fluorescent rays, others only the cathodic and x rays, and one described them as being of reddish color.

Clinical Department.

REMOVAL OF FIBROID FROM PREGNANT UTERUS WITHOUT RESULTING MISCARRIAGE.

BY JOSEPH F. O'SHEA, M.D., LYNN, MASS.,
Surgeon to the Lynn Hospital.

Mrs. A. S., age thirty-two, housewife; large, strong woman. When first seen, March 30, 1898, the patient gave the following history: She claimed to be over five months advanced in her first pregnancy; never had any uterine disturbance previous to conception; carried fetus without discomfort until the night of March 29th. Following the advice of certain ubiquitous old women who "had been through the mill," as they expressed it, she annointed her abdomen with sweet oil every night before going to bed. While applying this unctuous ablution on the night of March 29th she noticed a bunch on a line with, and to the left of, the umbilicus. Later in the night she began to have pains in the uterus and in the recently discovered tumor.

The pains were intermittent in character, and described by the patient as being unbearable in intensity, with a feeling of constriction as though something was grasping the uterus and tumor and squeezing them together. During the night a large sized plug of mucus was discharged from the vagina, but no blood.

When first seen, March 30th, the patient was still complaining of severe intermitting pains, which recurred every ten to fifteen minutes. Upon examination a tumor the size of a large orange was discovered attached to the gravid uterus on the left side of the fundus, its lower third being on a line with the umbilicus. Palpation necessary to determine the nature of the tumor always resulted in inducing the characteristic constricting pains, and increasing their intensity.

Digital examination *per vaginam* revealed a condition such as occurs in the first stage of labor before dilatation of the os — a very thin cervix which showed considerable tension, becoming thinner during each pain, and an absence of the plug of mucus which seals the os of the pregnant uterus. By bimanual palpation the tumor was found to be connected with the uterus and the pains were made out to be true parturient pains. There was nothing found to indicate any abnormal condition except the presence of the tumor. A diagnosis of subperitoneal fibroid, with threatened miscarriage, was made.

Treatment. — The patient was put in bed and sedatives and anodynes administered. This treatment was followed for one day, when, notwithstanding the fact that large doses of morphia, chloral, and bromides had been exhibited, the pains continued, the os became slightly dilated, and a miscarriage seemed imminent.

As it was obvious that the tumor was the cause of the irritation which produced the premature labor pains, a question arose as to the justification of operative measures for the relief of the condition which presented. Surgical interference was decided upon, for the following reasons:

(1) The tumor being the cause of the condition which would inevitably result in miscarriage, and the parents being willing to make any sacrifice that a living child should be born, the tumor should be removed.

(2) The excellent physical condition of the patient.

(3) The recent appearance of the tumor indicating that it was intra-uterine until the night of March 29th, when it was pushed out through the uterine wall, no adhesions would be found; consequently the operation would be comparatively simple.

(4) If allowed to remain it would militate against proper uterine involution after parturition and produce subsequent uterine displacement.

(5) As the tumor would have to be removed some time, the present time was the best, as the necessary delay following a miscarriage and the subsequent convalescence of the mother would render the conditions far less favorable than those specified in reasons numbered two and three.

Operation being decided upon, and proper surroundings and appointments not being obtainable at the patient's house, she was removed to the Lynn Hospital April 1st. Her symptoms grew so severe that she was put on the operating-table three hours after her admission to the hospital. An incision was made through the left rectus muscle, and not through the median or semilunar line, in order to get a stronger abdominal wall to resist tension from uterine enlargement if pregnancy continued. A subperitoneal fibroid about the size of a large orange was discovered, its lower third embedded in the uterine tissue. A circular incision was made through the serous, muscular, and capsular coverings of the tumor, when it was easily enucleated from its bed with the handle of a scalpel.

A smaller fibroid about the size of a walnut was also discovered about two inches from the base of the larger tumor and was removed. Very little hemorrhage occurred during or subsequent to the removal of the tumor. Seven chromatized catgut sutures were taken in the uterine wound and thirteen deep silkworm-gut sutures were required to close the incision in the abdominal wall. A few uterine pains occurred on the night following the operation but gradually subsided and entirely ceased within twenty-four hours. There was uninterrupted convalescence and the patient was discharged from the hospital April 18th.

Two weeks later she was able to attend to her household duties and continued to do so up to the time of her confinement, which occurred July 25th, when she was delivered of a perfectly formed, healthy child weighing eight pounds.

Both for advice previous to, and assistance during, the operation, I am indebted to Dr. George H. Gray, of Lynn.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

Regular Meeting Wednesday, November 2, 1898, Dr. J. C. Warren in the chair.

Dr. P. C. Knapp read a paper on

THE TREATMENT OF CEREBRAL TUMORS.[1]

Drs. J. J. Putnam and M. H. Richardson read a paper on

A CASE OF CEREBRAL SARCOMA OF GREAT EXTENT; EXTIRPATION; MARKED AMELIORATION OF SYMPTOMS; RECURRENCE AND DEATH AT THE END OF SIX MONTHS. REMARKS ON THE ADVANTAGES OF PALLIATIVE OPERATIONS IN CEREBRAL TUMORS.[2]

Dr. J. J. Putnam: I have very little more to say. I think we ought to be extremely grateful to Dr. Knapp for his monumental labor in collecting these 500 cases, and it is on such facts as these that our decisions should be largely based. It seems to me that in climbing up the hill of advancement in this subject of the treatment of cerebral tumors we have reached a species of table-land. A certain number of very positive facts have been arrived at and a great many surgical conclusions have been made. Undoubtedly we shall see improvements in the technique of surgical operations and in our power of localizing tumors and judging of their size and position, still these advances are likely to be slower in the future than they have been in the past, and the conclusions Dr. Knapp has given will remain as controlling. On the other hand, I think it should be said, that in any case, after all has been said with regard to the dangers, it must be left to the patient how much risk he will take for the mere hope of cure, and I suppose it will always happen that a very considerable proportion of patients will risk almost anything in this hope, because, although, as Dr. Knapp says, some relief is given by medicine, still the medicine that gives relief often brings discomforts almost equivalent to the symptoms for which it was taken. I can never fail to remember the one case I have seen myself, where after death a large fibroma was found that could have been removed up to the very last moment, although, as a matter of fact, it seemed then impossible to make the localizing diagnosis, and the attempt to remove it was not made. I have advised operation in a good many cases, but it has been actually done, so far as I can now remember, in seven cases, and of these, four died of what might be considered the result of the operation, and in three the operation was of benefit, especially in one very satisfactory instance where a cyst was removed by Dr. Cabot, with entire relief of epilepsy. I had also advised operation, which was to have been done by Dr. Warren, in the case of a young girl who had been sick a comparatively short time with tumors, which proved to be multiple and which evidently had been rapidly growing. During etherization, however, the respiration ceased, though, in fact, she was kept alive five hours by artificial respiration. I speak of this case because I had some correspondence with Mr. Horsley about it, and he gave his opinion that if the operation had been immediately done in spite of the patient's unconscious condition, and relief of pressure with its attendant anemia had been in that way afforded, the result might have been temporarily different.

Dr. M. H. Richardson: We must admit, I think, that the surgery of the brain has not justified the hopes of ten years ago, although it has fulfilled the expectations of many. Except for the control of hemorrhage, for the drainage of abscesses, and for the removal of cysts, the results of brain operations have been disappointing. We cannot but expect this disappointment when we consider that explorations into and below the cortex are, from the nature of things, damaging. It is in this fact that explorations into the cranial cavity differ so fundamentally from those into the abdominal, and it is in these, too, that many have realized the discouragement with which they viewed the outlook of brain surgery ten years ago. In the abdominal cavity the hand may be passed everywhere without damage. If a lesion is present, its situation and operability can be determined with little danger and with no damage. In the brain, on the contrary, explorations beyond the area of the bony opening cannot but cause injury, — those between the brain and its membranes perhaps slight; but those into the cortex, irreparable. An occasional abscess may be drained successfully; an occasional tumor may be successfully removed; but, if unsuccessful, the operation cannot but be damaging. I have explored for brain tumor, under the advice of the neurologist, perhaps five or six times: with the exception of this case I have never been able to detect a tumor. The reluctance one feels to operating for brain tumor is in the necessary destruction of the cortex. It is in cases like Keene's, in which the tumor starts from the dura mater and presses in upon the brain, that the outlook is most favorable. It is the possibility of finding such a condition that encourages exploration.

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[1] To be published in a later number of the Journal.

[2] See page 129 of the Journal.

The technique of cerebral surgery has not yet improved sufficiently to permit extensive exploration without grave dangers, both as to immediate and as to remote results. From the nature of things, it seems unlikely that it will ever be possible to explore without these dangers, however perfect our technique may become.

Dr. Walton: I was glad to hear Dr. Richardson use the word "justified" in connection with the question of operating on cerebral tumor, referring to the hope that we might find one of those extremely rare cases of easily accessible growth. This is a word I have learned to use in advising the family. My personal experience, as far as it goes, coincides with the complete and valuable statistics collected by Dr. Knapp, but I have not yet had the good fortune to meet the curable case. I have, as a rule, stated the situation very unfavorably, telling the family that it is very difficult to exactly determine the location of the tumor, — for locating the symptoms does not always mean locating the tumor, — that even if the growth is found it may be difficult or impossible of removal, and that it may have extremely indefinite boundaries; furthermore, even supposing that it has been successfully located and successfully removed, the chances are against recovery from the symptoms, but that, notwithstanding these drawbacks, it is justifiable and even praiseworthy to attempt the operation in an otherwise hopeless case on the bare chance that the outcome may be exceptionally fortunate. If the family elect to take this chance well and good. "What would you do if it were your own father?" I am sometimes asked. I generally answer that I should not advise the operation, and that if it were myself I certainly should not want it. We sometimes forget the seriousness with which the average person regards operation and what the laity is apt to term "mutilation." We sometimes fail also to take into consideration the added difficulty in the subsequent care of the patient, the added discomfort of hernia, and the possibility of a septic wound requiring continual dressing during the months the patient lives. Such considerations may, to a certain degree, offset the possible palliative advantages, such as the lessening of the headache and vomiting, and the possibility of postponing blindness. Even this so-called palliation may be only increasing rather than lessening the sum total of suffering by prolonging life. On the whole, we are rarely justified, I think, in urging operation, and very rarely in decidedly advising it, though we may often be justified in making an attempt when the family understand the circumstances.

A case which has greatly interested me in this connection is one seen in consultation with Dr. Phippen, of Salem, of which I have a photograph here. I will roughly put on the board the outlines. The symptoms were almost identical with those of the case reported to-night by Drs. Putnam and Richardson, namely, hemiplegia, mental defect, aphasia, agraphia and double optic neuritis; to which hemianopsia and apoplectic attacks were added. The family were opposed to operation unless a favorable prognosis could be given. When the case came to post-mortem, the tumor (glioma), on first exposing the brain, appeared quite accessible (Fig. 1). On cross-section, however, the condition was something like this: diseased tissue shading off into healthy brain substance, healthy, that is, excepting for some small scattered foci of apparently gliomatous tissue (Fig. 2). Now, supposing all the diseased tissue had been removed by operation, extension would certainly have occurred later, the underlying tendency and surrounding conditions remaining unchanged; it would be something like taking out a decayed apple from a barrel, cutting away the decayed portion, and putting the apple back in the barrel.

Fig. 1.

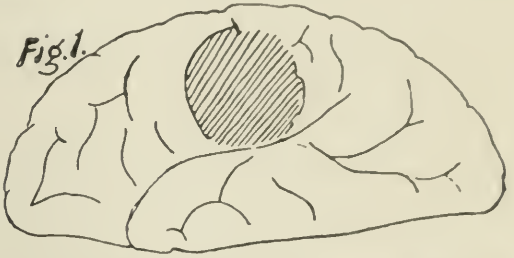
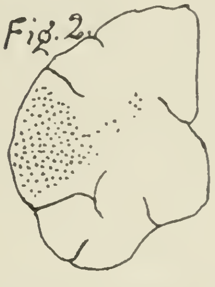


Fig. 2.



Coming to the question of palliation, I remember one case operated on by Dr. Richardson in which the temporary improvement at least was noticeable. This was the case of a young girl with inaccessible tumor of the cerebellum. Before operation the patient was screaming with pain, but was comparatively comfortable after the removal of two large buttons from the occipital bone without incision of the dura. This grade of operation is comparatively safe and eliminates to a great extent the discomforts as well as the dangers incurred by opening the membranes.

Dr. Williams: I happen to have at the present time a case under my care where there is double optic neuritis, gradually increasing, but so far with no impairment of vision. The loss of vision comes on slowly and follows the optic neuritis. There is a great deal of headache, obstinate constipation, inability to balance well, and occasionally diplopia and vomiting. Dr. Walton has seen the case also and the diagnosis seems to be a probable cerebral tumor. I have been very much interested in the papers and also in the general conclusions. In this case the friends have already brought up the question of operation and I advised against it. It did not seem to me, from what I had known of such cases, that the chances were sufficiently good to warrant advising to have it done.

The optic neuritis caused by cerebral tumor is generally double, rarely it is unilateral, but these unilateral cases are seldom due to diseases of the brain. The course of the neuritis gives some clue to the progress of the cerebral growth, for a chronic neuritis is very seldom, if ever, associated with an acute disease of the brain, although an acute neuritis may develop in the course of a slowly growing brain tumor. An improvement in the cerebral conditions is generally marked by a decrease in the optic neuritis. The vision is more affected in the subsiding stages of the neuritis, and with the atrophy which slowly follows the neuritis vision may be entirely lost.

Dr. Warren: In reference to the case referred to by Dr. Putnam, the influence of ether was very marked upon the patient; even before operation had been begun it had its effect, and it would certainly deter me from using ether in any case of cerebral tumor again. If I recall the case correctly, I think there were multiple gliomata found at the autopsy. In regard to taking advantage of the hernia-like protrusion of the tumor, I had a case in which I availed myself of that opportunity where at the first operation the tumor could not be seen or found and afterwards considerable portions of cerebral substance were removed, and I think Dr. Taylor examined some of the portions taken away, and felt confident that the greater part of the tumor had been removed in that way. After three or four months, during which time several operations had been performed, a small sinus which had remained became septic and the patient finally died.

Dr. Knapp: In regard to the question of technique I do not feel competent to say much, but I am a little surprised to hear Dr. Richardson say he did not think the technique had been very much improved. In my observation of operations on the brain I think that we have gained much in the rapidity with which we get the skull opened, and certainly the double operation which Horsley describes of making the bone opening the first operation, and then opening the dura and going into the brain a few days later, does reduce the shock very materially.

Dr. F. W. Johnson showed

PATHOLOGICAL SPECIMENS.

Dr. J. C. Munro demonstrated a new

SURGICAL INSTRUMENT.

Summer School for Cornell. — We learn from *Science* that the Cornell Medical College proposes to establish a summer school of medicine to be given in New York hospitals and dispensaries.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, December 6, 1898, Frederick Peterson, M.D., President.

A CASE OF ACROMEGALY.

Dr. W. M. Leszynsky presented a man, thirty-six years of age. He stated that the patient's father had been over six feet in height, with very large feet and hands, and that he died at the age of sixty-five. The patient himself, a policeman by occupation, had been in perfect health at the time of his marriage. He had been a steady drinker of whiskey for a number of years. About one year ago his sight became blurred. There have been pain and swelling in the right ankle for the past three years. Up to a few months ago he had had a voracious appetite. During the past year there had been numbness in the arms and hands. About five years ago he first noticed that the hands and feet had grown large, but he does not think they have grown much during the last two years. Examination showed him to be six feet one inch in height, and to weigh 245 pounds. The lower jaw projects half an inch beyond the upper jaw; the lower lip is thickened; the tongue is two inches and a half wide, and its surface is cracked. The bones of the face are generally enlarged, the nose being broadened and lengthened and the nostrils widened. The thyroid gland is not enlarged. His pulse is 84. The heart, lungs and other viscera are normal. The bones of both the upper and lower extremities are all enlarged. There is no atrophy, tremor, ataxia or objective sensory disturbance. The triceps reflex is normal. The gait is normal. From the heel to the tip of the toes measures $11\frac{1}{4}$ inches. The tendo Achillis and plantar reflexes are feeble; the patellar reflexes are normal. The urine is negative. The case being one of chronic alcoholism at the beginning, the question arose as to whether the eye symptoms were due to this or to enlargement of the hypophysis. Dr. Leszynsky said that he personally believed it was due to disease of the hypophysis making pressure on the optic tract. The reaction of the pupils to light was very sluggish. The vision of both eyes is $\frac{20}{15}$. There is no stereoscopic vision; accommodation is normal; there is no central color scotoma. In the right eye the field for form and white is entirely normal, while the field for green is greatly contracted. In the left eye there is almost complete temporal hemianopsia for white and form, while the field for green, blue and red is contracted. The ophthalmoscope shows both optic papillæ pale and atrophic. The sense of smell is entirely absent.

Dr. M. Allen Starr said that he had had under observation a case of acromegaly, and had given him thyroid extract pretty regularly for four or five years. While taking it he is free from distressing headache. There had been a slight reduction in the circumference of his fingers and feet, but this was so slight that it was probably due to the decrease in the general deposit of adipose. Röntgen-ray pictures fail to show any great increase in the size of the bones of the hands and feet — not at all in proportion to the deposit of fat in these parts.

Dr. B. Sachs said that the first case of acromegaly described in this country was one which had been at the Montefiore Home for many years. The patient had recently died, and the post-mortem examination had revealed a very large tumor of the pituitary body.

He had seen the case during a period of ten years, and knew that all sorts of medicinal treatment had been tried without avail. In this case repeated examinations had failed to show any dulness indicative of the presence of the remains of the thymus gland.

Dr. Leszynsky said that the peculiar eye symptoms, the fact that there is no central color scotoma, and that the field for white in one eye is perfect, while that for colors is completely obliterated, help one materially in making the diagnosis, so that even without the acromegaly one might expect the existence of a growth in the hypophysis. The case was interesting because of the possibility of making an early diagnosis.

A PECULIAR PHASE OF LOCOMOTOR ATAXIA.

Dr. Sachs, on behalf of **Dr. Freeman F. Ward**, presented a patient showing a peculiar phase of locomotor ataxia. The speaker said that, so far as his experience had gone, the vast majority of the cases of amaurotic tabes do not show the Romberg symptom on closing the eyes, and it was because of the presence of this symptom to an exaggerated degree that Dr. Ward claimed the case to be a curiosity. The case had already been reported in the *Medical Record* of October 8, 1898. The patient was presented for inspection. He showed the Romberg symptom very markedly, falling over immediately on closing the eyes. He is fifty-three years of age, and states that his present trouble began fourteen years ago with gradual failure of vision.

Dr. Leszynsky recalled having seen a woman with tabes, who was unable to perceive light because of optic atrophy, yet who exhibited a considerable ataxia when the feet were placed together. But in her case the moment she closed her eyes the ataxia disappeared. He was not prepared to offer any explanation.

Dr. H. M. Thomas, of Baltimore, said that in his list of tabetic cases he had come across the Romberg symptom twice in those who were blind. He had also seen it mentioned several times in literature.

LESION OF THE CHIASM.

Dr. Philip Meirowitz presented a married man, twenty-eight years of age, who had lost completely the sight in the right eye, and in whom the vision in the other eye was very much impaired. It began two years ago, shortly after witnessing a fatal accident to a child. Two days after this there were anorexia and insomnia, and he experienced difficulty in banishing the incident from his mind. Two or three months after this he began to be troubled with vertigo. There was no vertigo while in the dorsal decubitus. These attacks of vertigo recurred monthly for five or six months, and then ceased. About the time of the first attack, in May, 1897, the vision of the right eye became impaired, and a few weeks ago this eye became blind. Gradually the temporal half of the left visual field became smaller, until now there was almost complete hemianopsia. He had never had severe headaches or pains, or motor disturbances. His speech was normal. When examined on November 8, 1898, a slight weakness of the external rectus was noted; the pupils were irregular and larger than normal; on looking to the right there was slight nystagmus. The ophthalmoscope showed descending atrophy. Vision in the right eye was zero, and in the left $\frac{1}{50}$. There was no history of alcoholism or syphilis. The case was presented as a lesion of the chiasm, and to elicit discussion on the possible value of surgical treatment.

Dr. Graeme M. Hammond said that he had seen this case from time to time, and the question had arisen as to whether there was a neoplasm or whether there was a primary atrophy of the nerve. The history did not seem to be that which one would expect in the latter condition. The changes in vision were not symmetrical. He would rather consider the case one of gradually progressive lesion affecting the right optic nerve at its exit from the commissure. The probability was that the other half of the left retina would be lost. A surgical operation for the removal of a possible neoplasm must necessarily be a severe one, but a surgeon who had experimented on the cadaver with this in view had confidently asserted that a surgical procedure was feasible.

Dr. Leszynsky said that he had seen this man and had carefully studied his case. He had also observed a number of similar cases at one time in conjunction with Dr. Seguin. He was of the opinion that the case would go on to complete atrophy and blindness, and he did not think any operation was justifiable, as he could see no trustworthy evidence of tumor. The patients observed by Dr. Seguin, and others, had lived for twenty-five or thirty years, although blind.

Dr. Starr said that the case closely corresponded to one that he had had under observation for nine years. This patient had consulted Sir William Gowers, of London, on two or three occasions, and had also seen Horsley, who had pronounced it perfectly impossible to operate upon a tumor in or about the optic chiasm. Gowers had insisted, however, that the case was not one of tumor, but of optic atrophy, and this view had been borne out by the fact that the man, while totally blind, was still alive and fairly comfortable.

Dr. Peterson said that he had seen the case just presented, and had come to the conclusion that it was one of those of atrophy in which the progress is irregular and unusual. A year or two ago he had shown a case of tabes in which there had been at first hemianopsia and finally the loss of three quadrants in the two eyes, undoubtedly as a result of optic atrophy. Without any evidence of tumor, the diagnosis of neoplasm did not seem to him warrantable.

STATISTICAL STUDY OF CASES OF TABES EXAMINED AT THE JOHNS HOPKINS HOSPITAL.

Dr. H. M. Thomas, of Baltimore, read this paper, which was founded on 111 cases of tabes presenting more or less complete histories. Of this number, 106 were whites and 5 negroes. The negroes represented a little more than 10 per cent. of the cases treated, so that the percentage of tabetics among the negroes was less than half what it should be if the negroes were represented in proper proportion. Syphilis is considered by the majority of physicians to be the cause of tabes. The records show that while the negroes represented only 6.39 per cent. of the total number of males treated in a given time, they constituted 27.63 per cent. of the whole number of males treated for syphilis. In the dispensary the percentage of women suffering from tabes was small — a little more than 9 per cent. There were five female tabetics seen in the private wards, and from the higher strata of society, which was contrary to the usual belief. He had as yet seen no case of tabes in a negro woman. His statistics presented nothing of much interest regarding the age at which the disease develops. Most of the cases came on between thirty and fifty years, the youngest being twenty-five and the oldest sixty-six years. The duration of the disease could be determined with fair accuracy in 107 cases. In 11 it lasted ten years or more; in one the duration was thirty years. He had definite notes in 95 of the 97 male cases. The percentage of cases in which syphilitic infection was certain was 42; the percentage of possible syphilitic cases was 63. The author's conclusions regarding the relation of syphilis to tabes are: (1) in a large proportion of cases of tabes a history of syphilis can be obtained; (2) in a certain not inconsiderable number there is no history of venereal sore or other syphilitic manifestation; (3) in negroes tabes is relatively uncommon, whereas syphilis is very much more common in them than in whites; (4) the partial immunity of women is greater than can be satisfactorily accounted for by the relative infrequency of syphilis among them. This study seemed to show that syphilis is not the only factor in the development of tabes. The time elapsing between the syphilitic infection and the first symptom of tabes was determined in 47 cases. The shortest interval was two years, and the longer ones, twenty-six, twenty-seven, thirty and a doubtful forty-two years. Pain occurred in 57 as the initial symptom; ataxia in 24; numbness of the extremities in 6; paralysis of the bladder in 5; nausea and vomiting and gastric crises in 4. One patient complained that at first he had suffered pain extending from the penis to the rectum, and since this paper had been written he had seen another such case. Optic atrophy occurred in 11; eye-muscle paralysis in 33; Argyll-Robertson pupil in 70; both pupils immovable to light but reacting to accommodation, in 57 cases. Of the cases showing optic atrophy, the ataxia was marked in 2, slight in 8, absent in one. In 2 of the cases the Romberg symptom was marked in spite of blindness. In 75 cases in which the sexual power was noted, both power and desire were lost in 38, and in 3 of these was preceded by a marked increase; it was weakened in 24; in one the power was lost but the desire retained; in one both were increased; in 10 both were normal. The muscular sense was disturbed in 38 out of 44 cases. Charcot's joints occurred typically in 5 and there was suspicious enlargement in 3 others. In 7 cases showing mental symptoms general paresis was suggested. In conclusion, Dr. Thomas said that too much weight should not be given such a statistical study as this, and it should not be used as a basis for too definite statements as to the relative frequency of any particular symptom.

Dr. **Starr** said that such a statistical study was always useful, although sometimes misleading unless the cases could be followed for a considerable time, and a very large number studied. The statistics of one clinic should, therefore, be studied in conjunction with those from other clinics. He had had the cases at the Vanderbilt Clinic tabulated up to March 15, 1897. To these 175 cases he had added 98 from private practice, making a total of 273 cases. The males were practically ten times more numerous than the females. The great preponderance of cases developed between the ages of thirty and forty, though 21 were over fifty, and 2 were under twenty. Syphilis was certainly present in 50 per cent. and if these were grouped with those in which syphilis was probable or doubtful, the total would represent 72 per cent. Of the 273 cases, 27 had gastric crises; 21 had optic atrophy; 5 had Charcot's joints; 5 had ulcer of the foot. The most frequent symptom was the pain; next, the ataxia; thirdly, the bladder disturbance; fourthly, numbness of the legs; fifthly, girdle sensation; and sixthly, ocular paralyses. The knee-jerks were absent in 246 cases; the Argyll-Robertson pupil was present in 184; the Romberg symptom was present in 229. Rectal crises, or severe pains in the perineum, were noted in one case. One symptom not mentioned in the paper was a sudden giving way of the legs and falling of the patient before the development of ataxia.

Dr. **C. L. Dana** said that some time ago he had tabulated the statistics of his clinic, and a portion of those from his private practice. There were altogether about 200 cases, and the percentages obtained corresponded fairly closely with those given in the paper this evening. He had just looked over the histories of 50 cases seen in private practice alone during the last two or three years, because of the greater certainty in these regarding symptomatology and etiology. In these 50 there was only one woman, and he could only recall having seen 2 women suffering from tabes. Both of these had been from the lower walks of life. There were very few cases under thirty years of age, and very few began after the age of fifty. The percentage of possible, probable and certain syphilis did not exceed seventy. It was interesting to note that among the merchant seamen of this country he had found very little tabes, and in the reports of the United States Marine-Hospital Service, although there is an enormous proportion of syphilis, there is comparatively little tabes. He had found pain the most common among the initial symptoms, and after that crises and anesthesias. In his experience, rectal crises had not been at all uncommon among the early symptoms. He had met with patients who had had obstinate rectal neuralgias, and who had been operated upon for hemorrhoids, etc., when tabes was really the underlying cause. One of the most extraordinary manifestations of tabes was the prolongation of the painful period. Sometimes a case would be marked by nothing but pain for ten or fifteen years. One interesting early symptom in many cases was simply the sense of fatigue — probably an early manifestation of the involvement of the muscular sense. He regretted that the reader of the paper had not considered the relation of the symptoms to the prognosis — a very difficult problem.

Dr. **Sachs** said that he had always maintained that statistics do not amount to much. The experience of the reader of the paper as to the rarity of tabes among negroes had probably been duplicated by most of those present. At one time he had been a firm adherent to the view that syphilis was the chief cause of tabes, but now he was inclined to think that it was absurd to assume that spinal cord diseases must necessarily be due to one cause. This had been impressed upon him by a study of multiple scleroses. He had recently had a group of cases of traumatic tabes, without any evidence of syphilis. In his experience, the Argyll pupil had been present first in by far the larger number of cases; next, the pain; thirdly, the loss of the deep reflexes. In many of his cases the ataxia had been observed comparatively late. He would like to know more definitely regarding the presence of that comparatively new symptom — hypertonus. He had found this to be a remarkably early symptom. In at least three cases seen in the past month this symptom had been present when the other symptoms had been so indefinite that he had been in doubt as to the diagnosis of tabes. He was also interested in the question of the number of cases of tabes which develop general paresis. His later experience had led him to conclude that only a small percentage develop general paresis, but sufficiently often to lead to the suspicion that they are both due to the same factor. Whenever he found that several of the cardinal factors develop at one time he made an unfavorable prognosis, and he had learned that the cases in which the symptoms develop asymmetrically were those in which the disease progressed least rapidly. His experience confirmed the published statement of Dr. Collins that treatment of syphilis does not seem to prevent tabes. On the other hand, he believed that the progress of tabes could be stayed by vigorous antisyphilitic treatment.

Dr. Edward D. Fisher said that the statistics in the paper gave a fairly good picture of tabes. In his experience the early symptoms had been slight pains of a rheumatic character, associated with ataxia. About this time, or shortly afterward, the Argyll-Robertson pupil usually develops. Very few of his recent cases had shown optic paralysis, although it had been much more common a few years ago, thus showing the great variations in individual statistics. He would like to know whether Dr. Thomas had noticed, in the cases in which blindness had come on, whether or not the spinal symptoms had been slow in developing, as some writers had claimed.

Dr. Joseph Collins said that he had recently analyzed the symptoms of tabes occurring in 100 consecutive cases. Out of this number there had been 4 negroes, although he did not ordinarily see many negroes in his practice. Only yesterday he had found a well-marked case of locomotor ataxia in a negro woman of forty-seven years, who denied syphilis. Two of his negro patients had been males, and 2 females. Out of the 100 cases, 7 were women, and 5 of these had been under thirty years of age. Three of these women were actresses, all of them apparently syphilitic. He had made his analyses without any preconceived notions regarding them. There was a definite history of syphilis in 63 cases, and an indefinite one in 17, bringing the possible relationship of sexual infectious disorder to tabes up to 80 per cent. In his experience, the bladder symptoms and numbness of the lower extremities had been the more common initial symptoms. Next to these came pain, and next in order the giving way of the legs. This latter symptom had been very commonly met with. Of the 100 cases of tabes seen in the last three years, rectal crises had not been observed in a single one. He was becoming more and more convinced that orthodox and thorough antisyphilitic treatment had not the slightest effect, either in delaying the appearance of tabes or mitigating its severity, and this seemed to him a most potent argument against tabes being a parasyphilitic disease.

Dr. Thomas, in closing the discussion, said that he had only examined systematically for hypertonus in the last three years. He had been disappointed at not finding it more frequently. His statistics of the initial symptoms had been compiled rather from the histories than from the examinations. In most of his cases of optic atrophy the ataxia had been slight.

DEMONSTRATION OF MISS FLORENCE SABIN'S MODEL OF THE MEDULLA, PONS AND MID-BRAIN, WITH REMARKS UPON THE VALUE OF WAX RECONSTRUCTION AS A METHOD OF STUDYING THE NERVOUS SYSTEM.

Dr. Lewellys F. Barker, of Baltimore, Associate Professor of Anatomy of the Johns Hopkins University, made the demonstration. The method of reconstruction, he said, originated with the embryologists in a desire to show in plastic form what they studied in sections. His, of Leipsig, many years ago introduced his method of graphic reconstruction. The method of wax reconstruction directly from serial sections was introduced in Berlin in 1876. This method, with some modifications, had been employed by Miss Sabin, the constructor of the model to be demonstrated. Before beginning work one must have a faultless series of sections, an intelligent idea of the contents of those sections, a suitable mechanism for the projection of the sections magnified, some degree of spatial sense, and a certain amount of mechanical skill, together with a vast deal of patience. The model represented the medulla, pons and a portion of the mid-brain of a human fetus near full term. Miss Sabin's work was begun a year ago last March. The drawings were obtained by the projection method, and these were then transferred to wax plates, which were then superimposed.

Dr. Herter moved a vote of thanks to Dr. Barker, Dr. Thomas and Miss Sabin for their remarkably interesting and instructive contributions. Seconded, and carried unanimously.

Recent Literature.

Annual and Analytical Cyclopedia of Practical Medicine. By Charles E. de M. Sajous, M.D., and One Hundred Associate Editors, assisted by Corresponding Editors, Collaborators and Correspondents. Illustrated with Chromo-Lithographs, Engravings and Maps. Volume II. Philadelphia, New York, Chicago: The F. A. Davis Co. 1899.

The second volume of this valuable "Annual and Cyclopedia" fully bears out the promise of the first. A change in the method of preparing the articles has been made, so that instead of being prepared under the immediate supervision of the editor, and submitted to members of the associate staff for revision and correction, as in the first volume, all the articles in the second volume have been prepared by their respective editors themselves.

Articles which may be mentioned as especially complete and valuable are those on Cirrhosis of the Liver, by Professor Adami of Montreal; Diabetes, by Professor Lépine of Lyons, and Cholelithiasis, by Professor Graham of Toronto. The illustrations of the latter article are well selected and executed, and give to it especial value. The principle of judicious selection has been applied to the illustrations throughout the volume, and the publishers' work has been successful in making the book handsome as well as useful.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In twenty volumes. Volume XVII, "Infectious Diseases and Malignant Neoplasms." New York: William Wood & Co. 1898.

Owing to "unforeseen" difficulties in the preparation of Volume XVI, it is preceded by Volume XVII on "Infectious Diseases and Malignant New Growths." The infectious diseases in this volume are only two — diphtheria and tetanus.

The sections devoted to malignant new growths cover cancer, sarcoma, new growths of the skin and of the female organs of generation.

Dr. W. H. Park, of the New York City Health Department, writes on the general pathology and bacteriology of diphtheria, and Dr. Jacobi on its symptomatology and treatment, both very competent authorities.

Dr. Victor Babes, of Bucharest, presents the article on Tetanus, which covers about 170 pages, and is a careful study of the subject as understood to-day. The general pathology of cancer is discussed by W. Roger Williams, of Bristol, Eng., in a lengthy article of about 200 pages; the section on the Symptomatology and Treatment of Cancer comes from the pen of Dr. W. B. Coley, of New York, with whose name we associate the injection of the mixed toxins in sarcoma.

There is an excellent article by Dr. John T. Bowen, of Boston, on the Malignant New Growths of the Skin. The last article of the volume, on Malignant Diseases of the Female Organs of Generation, is by Dr. Edward McGuire, of Richmond, Va.

A Manual of the Practice of Medicine. By Frederick Taylor, M.D., F.R.C.P. Fifth edition. London: J. & A. Churchill; Philadelphia: P. Blakiston, Son & Co. 1898.

Dr. Taylor is physician to and lecturer on medicine at Guy's Hospital. His book has reached a fifth edition. In the last eight years since the first edition appeared it has increased somewhat in bulk, but though a fat and mature handful, it is still fairly a manual, and is a meritorious book of that kind. The kind is pretty numerous, but so is the student of medicine.

The Eye as an Aid in General Diagnosis. A Handbook for the Use of Students and General Practitioners. By E. H. Linnell, M.D. Pp. 248. Philadelphia: The Edwards & Docher Co. 1897.

This book, written in a simple and direct style, is intended to guide the practitioner in general medicine in acquiring the habit of looking for ocular symptoms in making his diagnosis in general diseases, in the same manner as he habitually takes the pulse, temperature and respiration, and makes a urinary analysis. The book is not of the encyclopedic character of Knies' work on the same subject but is intended to emphasize such symptoms as are of direct importance in the way of diagnosis.

The work is divided into two parts: Part I includes affections of the muscles, cornea, iris, fundus oculi, field of vision, etc. Part II is devoted principally to the relation of ocular affections to functional nervous diseases and to the various ocular symptoms of toxic origin.

THE BOSTON

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MEASUREMENTS OF PAIN.

In the study of the functions of the nervous system the most definite advance has been made in the exact determination of disturbances of motion. The function of mind is naturally far too subtle to be accurately measured by means now at our disposal, and any progress in this direction can hardly do more than approximate the facts. Sensation has also been elusive, and it is chiefly to the psychologists of the modern school that we owe what accurate knowledge we have of this fundamental function of the nervous mechanism. In the determination of a defect of motion animal experimentation has been called upon to supplement observations in man, a possibility which is open in a most limited way, when we come to the measurement of sensation. In this field man must serve as the object of experimentation, since he alone is capable of describing his feelings.

Practically, as physicians, we are much less conscientious in our attempt to determine alterations of sensation in various morbid conditions of the nervous system than of motion. The latter is palpable; the former is time-taking, and subject to many possibilities of error, and the consequence is, we are too apt to neglect any attempt at accuracy in our routine work on the side of sensation. It is therefore with satisfaction that we welcome any careful investigation designed to bring out facts and formulate laws relative to exact measurements of sensations. Arthur MacDonald, of the United States Bureau of Education, has recently presented a paper before the American Psychological Association, in which he adds many new experiments to those he has previously reported in 1895 and 1896, on "Measurements of Pain."

In his early experiments, on 1,412 persons, he found the following facts: that women are more sensitive to pain than men; that American professional men are more sensitive than American business men; that the laboring classes are much less sensitive to pain than the non-laboring classes; that the women of the poorer classes are less sensitive than those in more comfortable conditions; that the wealthy classes, in general, are more sensitive than the poorer classes, and that the left hand is more sensitive to pain than the right hand.

In the newer series of experiments the writer used as an instrument of precision what he terms a "temple algometer," designed by himself. The instrument is pressed against the temple of the subject until a disagreeable sensation is aroused, the amount of pressure being registered on a scale arranged for that purpose. With this instrument, which is one of great delicacy, Mr. MacDonald claims to be able to approximate very nearly to what he calls the "threshold of pain." In each case the least sensibility to pain was noted. His experiments extended over a great variety of social conditions and ages, including in all 899 persons. Of these some were public school girls, others private school girls, boys in public schools, university women, washerwomen, business women, and self-educated women. We give his conclusions in detail, as of great interest, though not covering so many cases as is desirable for statistical study: —

(1) In general the sensibility to pain decreases as age increases. The left temple is more sensitive than the right. This accords with former experiments that the left hand is more sensitive to pain than the right hand. There is an increase of obtuseness to pain from ages 10 to 11; then a decrease from 11 to 12; then an increase from 12 to 13. From 13 to 17, while the right temple increases in obtuseness, the left temple increases in acuteness. This is in the post-pubertal period. There is a general variation, which experiments on larger numbers might modify.

(2) Girls in private schools, who are generally of wealthy parents, are much more sensitive to pain than girls in the public schools. It would appear that refinements and luxuries tend to increase sensitiveness to pain. The hardihood which the great majority must experience seems advantageous. This also accords with our previous measurements, that the non-laboring classes are more sensitive to pain than the laboring classes.[1]

(3) University women are more sensitive than washerwomen but less sensitive than business women. There seems to be no necessary relation between intellectual development and pain sensitiveness. Obtuseness to pain seems to be due more to hardihood in early life.

(4) Self-educated women who are not trained in universities are more sensitive than business women. Giving, then, the divisions in the order of their acuteness to the sense of pain, they would stand as follows: 1st, girls of the wealthy classes; 2d, self-educated women; 3d, business women; 4th, university women; 5th, washerwomen. The greater sensitiveness of self-educated women as compared with university women may be due to the overtaxing of the nervous system of the former in their unequal struggle after knowledge.

(5) The girls in the public schools are more sensitive at all ages than the boys. This agrees with the results of our previous measurements that women are more sensitive to pain than men.

These measurements of least disagreeableness, or of threshold of pain, are approximate measurements of the combination of nerve, feeling, and idea.

Such work as this is of unquestioned value. Much may, no doubt, be learned through painstaking investigations of this sort regarding the general subject of sensation. The results of such experiments should always be borne in mind by the physician, who is at times too prone to detect differences where in fact they do not exist. Such an accurate investigation as the foregoing among persons below the normal average of health would certainly reveal many facts of interest. We are all dimly conscious that individuals differ in their reactions to painful stimuli, but we are much in need of a standard to which any given case may be applied, and such a standard is only to be attained by the careful study of great numbers of persons both in health and disease.

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ANNUAL REPORT OF THE BOSTON CITY HOSPITAL.

The report of the trustees of the Boston City Hospital for the year ending January 31, 1898, the thirty-fourth year of its existence, which has recently been issued, is a record of substantial progress in the equipment and work of that institution.

During the year the installation of the electric light and coal pocket in connection with the power-house was completed, and the new laundry building nearly made ready for occupation. Work upon the new surgical building had progressed, and new operating-rooms with modern equipment had been provided for the gynecological wards.

The trustees call attention to the excellent work during the year of the South Department, for infectious diseases, in which there were 2,558 admissions during the year.

The steady decrease in the death-rate from diphtheria is an excellent indication of the value of this department. "The average death-rate of all cases of diphtheria in the city for the period of sixteen years was 30.7 per cent. The percentage of deaths in the South Department for diphtheria alone last year was 14 per cent., and for the present year 13 per cent.; and the total death-rates from cases last year was 14 per cent., and during the present year 11 per cent. The percentage of deaths to discharges was 12, and to the total number of persons treated during the year, less those occurring twenty-four hours after admission, was 8½."

The condition of the department has been such that it has been able to receive every case that was proper for admission, and promptly, with one exception.

The trustees recommend the construction of a special ward for measles for the South Department, and in connection with the hospital proper of a relief and emergency station in the crowded business district of the city.

During the year the surgical service, which had become so large that the work required became a serious tax upon the time and strength of the surgeons on duty, has been reorganized in such a manner as to allow the senior surgeon on duty to call in the assistance of the assistant visiting surgeons for the performance of such duties as he may care to delegate to them. This plan, the details of which have been carefully elaborated, so arranges the duties of the surgeons that two or three may be on duty in each service at the same time, and the work divided, according to its class and importance, between the older and the younger surgeons. It enables each surgeon to devote more time to the visiting of his wards, to operate more promptly, and the change has otherwise improved the usefulness of the service in many ways. A similar plan has been adopted by the gynecological service.

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[1] By "laboring classes" are meant artisans and unskilled laborers; by "non-laboring classes" professional and mercantile men.

The term of service of medical and surgical house-officers has been extended to two years, and by this arrangement three house-officers and a surgical dresser (a six months' appointment) are on duty in each surgical service, and three in each medical service. This enlargement of the force has resulted in a more satisfactory performance of the duties of the house-staff without overtaxing their strength.

The capacity of the hospital remains the same as in the previous year, namely, 512 beds in the hospital proper, 226 in the South Department, and 36 in the Convalescent Home.

During the year 7,916 patients were admitted to the hospital, 3,578 to the medical services, 3,612 to the surgical, 512 to the gynecological, and the remainder to the ophthalmic and aural services.

In the Out-Patient Departments 22,713 patients were treated, of whom 9,857 were surgical and 3,798 medical patients. The remainder were distributed in the departments for special diseases, which averaged about a thousand patients each.

The net cost to the city of maintaining the hospital proper during the year was $176,457.11, and the actual cost of maintenance $245,284.09, or a daily cost of $1.40 per hospital patient.

The medical statistics are of interest and value as showing the proportionate prevalence of various forms of disease treated in a large city hospital.

The surgical statistics are also of interest, but are marred by a lack of accurate and correct classification, which detracts from and in many instances destroys their value. The number of surgical operations performed during the year was 1,623.

MEDICAL NOTES.

A NEW MEDICAL COLLEGE. — The newest medical college in Baltimore, known as the Maryland Medical College, which was opened last September, has had, we learn from the *Medical Record*, a phenomenal success, and has had more students in proportion to its age than any other medical school in Baltimore.

DR. REED'S SOCIOLOGICAL STUDY OF "CHRISTIAN SCIENCE." — Messrs. McClelland & Co., of Cincinnati, have published in pamphlet form Dr. Charles A. L. Reed's address entitled "Christian Science; a Sociological Study." It is a strong arraignment of the peculiar sect. — *New York Medical Journal.*

M. QUESNAY DE BEAUREPAIRE. — M. Quesnay de Beaurepaire, the judge whose resignation from the Breude Court of Cassation recently attracted so much attention, comes of good medical stock, according to the *Medical Record*, which states that he is the great-grandson of Dr. Quesnay, for a quarter of a century physician to Louis XIV, and celebrated in his day as an able financier, a skilful surgeon, and an earnest advocate and promoter of hospital reform.

SOCIETY OF ELECTRO-THERAPEUTICS. — At a meeting of the French Society of Electro-Therapeutics, held January 19th, Dr. W. J. Morton, of New York, spoke on "Induced Static Currents." Drs. M. E. Doumer and E. Musin reported excellent results in constipation of varied etiology, through the use of local franklinization. Dr. Videbeck and Dr. Seednik spoke of the successful application of electrical currents in the treatment of a sarcomatous tumor, and in a traumatic muscular contraction.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, February 8, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 50, scarlet fever 25, measles 149, typhoid fever 2, small-pox 1.

THE MASSACHUSETTS GENERAL HOSPITAL. — The Annual Meeting of the Corporation of the Massachusetts General Hospital was held on February 1st.

THE BOSTON CITY HOSPITAL CLUB. — The Annual Dinner of the Boston City Hospital Club was held at the Parker House on February 1st. The President, Dr. H. F. Borden, of Brockton, presided. Speeches were made by President A. Shuman of the Board of Trustees of the Hospital, Dr. C. J. Blake, Heman W. Chaplin, Dr. C. F. Withington, Dr. E. H. Bradford, Dr. A. Post and President Borden. A poem was read by Dr. J. B. Blake. Dr. W. P. Bolles, of Boston, was elected President of the Association.

ANNUAL MEETING OF THE NEWTON HOSPITAL CORPORATION. — At the recent annual meeting of the Board of Trustees of the Newton (Mass.) Hospital, the report of the president, Hon. J. R. Leeson, showed that the hospital is in a satisfactory and prosperous condition.

MORE CENTENARIANS. — Mrs. Sally Weed, of Merrimac, Mass., has celebrated her one hundred and first birthday. Mrs. Emily Everett, of Cambridge, has celebrated her one hundredth birthday anniversary. Mrs. Annie Martin, of Taunton, is said to have passed her one hundred and fifth year.

SMALL-POX IN MAINE. — It is reported that there are several authentic cases of small-pox at Waterville, Maine. A strict quarantine has been established by the local board of health, and vaccination is being hurried to prevent any possible spread of the disease. A number of other cases have been unofficially reported and two deaths have occurred.

Increase of Insanity in Maine. — It is stated that statistics show that there has been an increase in the number of insane cases during the past twenty years, relative to the general growth of the population. The overcrowding of the State Asylum at Augusta is to be relieved by the completion of the hospital buildings at Bangor. An appropriation has recently been made of $225,000 for this purpose.

NEW YORK.

Mount Sinai Hospital. — The annual meeting of the managers of Mount Sinai Hospital was held on January 29th, when it was reported that more than $600,000 had already been subscribed for the new hospital buildings, which will be located on the recently purchased site, the block between Fifth and Madison Avenues and 100th and 101st Streets, facing the east side of Central Park. Of the 3,082 patients admitted during the year, 325 died; but 68 of these deaths occurred within 48 hours after admission. The percentage of patients treated gratuitously was 81.64, and among the patients so treated were 44 soldiers from Santiago. They were all suffering from typhoid fever, and all but one recovered. The per capita cost of maintenance for free patients was $1.33 a day, as against $1.29 for the preceding year. Among the receipts for the year were $9,135 from the city, $600 from the theatre license fund, and $5,272 from the Hospital Saturday and Sunday Association.

The Army Ration. — At a meeting of the New York Academy of Medicine held February 2d Dr. Louis L. Seaman, late chief surgeon of the First Regiment United States Volunteer Engineers, read a paper on "The United States Army Ration and Its Adaptability for Use in Tropical Climates." Dr. Seaman has travelled extensively in India, China and Japan, and up to the time when his regiment was mustered out, in the latter part of December, was stationed in Puerto Rico. After quoting the statistics of the adjutant-general's office during the recent war, and pointing out that there was a vast amount of preventible illness among our troops, he expressed the opinion that a much greater flexibility in the army ration would be essential if the excellent practical results attained by the English in tropical countries were to be looked for. In speaking of the defects of the present ration, consisting principally of salted and fresh meats, bread or flour, canned beans and tomatoes, and a small proportion of cereals, with little provision for fresh vegetables, he said that the experience of the British in Burmah and the East Indies has shown that the salt ration is the greatest predisposing cause of bowel complaints. In the changes which he suggested for feeding the army under tropical and subtropical conditions were the following recommendations: The beef component and the salt pork should be reduced one-half, farinaceous food being substituted therefor. Salted rations should be issued at most twice during the week, and fresh meats should be provided from animals slaughtered at the points where issued. Of the cereals, one of the best is hominy. Equally valuable is the ration of rice now issued, and which should be quadrupled in quantity. The white bean of this country should not be issued in the tropics. In its place should be used the black or red native bean. In addition to the above, dried fruits, especially apples and prunes, should be added to the ration. In conclusion, he said, "Could we have had such a ration as this in Puerto Rico and Cuba, or if but a small percentage of the great outlay afterward expended in the care and treatment of the sick had been employed in procuring proper food before disease had developed, an enormous saving would have resulted, and future pension rolls would have been kept within narrow bounds." In the discussion which followed, Dr. J. M. G. Woodbury, who was a surgeon attached to the staff of Gen. James H. Wilson in the Puerto Rican campaign, expressed the opinion that the deaths among the volunteers were chargeable more to their improper cooking and filthy habits than to the character of the rations issued. Fully 40 per cent. of the mortality was due to these causes, he said, while the small mortality among the regular troops, who were serving under the same general conditions, was in marked contrast.

Annual Report of Charities Aid Association. — The annual report of the Charities Aid Association, recently published, referred with commendation to the marked improvement in the condition of affairs at the Infants' Hospital on Randall's Island. The following figures in regard to the work there have just been made public by M. C. Dunphy, superintendent of the institution: Number of infants treated in 1898, 1,284, in 1897, 1,179; number of deaths in 1898, 255, in 1897, 524; percentage of deaths in 1898, 19.86, in 1897, 44.44. In his statement the superintendent expresses the opinion that the sterilizing plant generously presented to the Public Charities Department by Mr. Nathan Strauss has contributed not a little to the satisfactory results noted.

Mortality during 1898. — The annual bulletin of vital statistics of the State Board of Health states that during the year 1898 there were 120,972 deaths reported in the State. This is 3,894 more than in 1897, which was a year of unusually low mortality, and is about the average of seven preceding years. The estimated death-rate per thousand of the population is 18.10, the average of the past ten years being 18.25. The death-rate of the maritime district was 20, against 18.90 in 1897, there having been about 3,500 more deaths. This increased mortality is no doubt to be explained by the excessive heat of the summer, resulting in augmented mortality from sunstroke and diarrheal diseases. In the other districts of the State there was no material variation from the rate of last year. In 1897, with an unusually cool summer, the reduction in mortality was principally in the maritime district, with its large cities.

Miscellany.

VIVISECTION IN INDIA.

The antivivisection party, according to the *Medical Press and Circular*, have succeeded in discovering another mare's nest, in which the absurdity of their protestations is again wofully exposed. They have alleged that the Pasteur Institute to be shortly founded in India will be entirely opposed to the religious sentiment of the natives, so much so that it may be expected to cause another mutiny. An antivivisectionist must be a person possessing a lively imagination, otherwise he would not be qualified to maintain the tenets of his party, and to say that a Pasteur Institute in India will cause a mutinous outbreak among the natives is just the kind of lively imaginative excrescence likely to be evolved from an antivivisectionist's mind. Unfortunately, however, for the antivivisectionist party, the facts as to this allegation are entirely against them. The Pasteur Institute in India will be founded and supported by the Nizam of Hyderabad, a prince of great and acknowledged intelligence, who is fully conversant with all the objects that the Institute will seek to attain. Moreover, as it has been pointed out, experiments upon animals are not repugnant to the feelings of the natives. As a matter of fact, they have infinitely less objection to experiments being performed on dogs, rabbits, and cats than they have to Englishmen eating beef. Despite the fact that the cow is a sacred animal among the natives, the slaughter of cattle in India has, up to the present, not been accused of having caused a mutiny.

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Correspondence.

GRIPPE AND X-RAY EXAMINATIONS.

Mr. Editor: — During the past two or three months I have found, by means of an x-ray examination, appearances in the lungs of some of my patients who had influenza that led me to suppose they also had pneumonia, although no signs of pneumonia could be found by auscultation and percussion. Later, however, the diagnosis suggested by the x-ray examination was confirmed. In other words, some cases of influenza are accompanied by a pneumonia which is not sufficiently marked at first (in certain of them not at any stage) to be determined by the usual physical signs. The warning given by the x-ray examination has shown me the necessity of keeping patients in bed whom I should otherwise have allowed to get up, and of detaining them in the house longer than would have seemed requisite if this condition of the lungs had not been recognized.

Very truly yours,
Francis H. Williams, M.D.

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BOSTON INSANE HOSPITAL.

Boston, Mass., February 4, 1899.

To the Editor Boston Medical and Surgical Journal:

Dear Sir, — I have read with surprise the article in the Journal of February 2d, entitled "The Need of a Reception House in Boston for Emergency Cases of Insanity." Herein are several statements so much at variance with the facts that I trust you will allow me to make a brief statement as to the status of emergency cases of insanity, not only in Boston but in Massachusetts.

You say, "It is well known that where insane patients living in Boston are brought to the notice of the Commissioner of Public Institutions on Saturday it is impossible to complete the steps for their legal commitment to a hospital for the insane until the court sits on the following Monday. In the meantime they must be kept in most inadequate quarters, or sent to Deer Island Hospital, which is not designed for the care of the insane, and is totally unfit as a place for the treatment of the early stages of insanity.

"Among the number of those who are thus disposed of each year are persons of refinement, who, in consequence of sudden outbreaks of extreme violence, cannot be kept at home, or who, in their delirium, have escaped from home and are picked up by the police."

Eighteen years ago the Massachusetts Legislature passed what is commonly known as the "emergency law," providing for the very thing now asked, and under its provisions hundreds of cases of insanity have been sent to the different insane hospitals on the certificates of two physicians without an order from a judge.

During the past ten years the Boston Insane Hospital has received 220 patients on "emergency papers," an annual average of 22. Many of these patients are removed to other hospitals within the five days prescribed by law, others are committed by a judge to this hospital, and a few are allowed to return their to homes without commitment where marked improvement has taken place. The Boston Hospital receives, of course, the majority of the emergency cases in this State, and the extra work involved for the medical and nursing staff has been frequently mentioned by Dr. Fisher in his reports. Many of these cases have no legal claim upon the City of Boston, but, so far as I know, the State has never reimbursed the hospital for its first care of these often troublesome cases.

During the past year 14 patients were received in this hospital on emergency papers, and I am told six were received at the McLean Hospital, but none are reported as received at any of the State hospitals.

I cannot believe it possible that the Hospital Trustees Association is unaware of the existence of the "emergency law."

In May of last year the Legislature repealed the clause of the emergency law requiring that the application for admission of such a case to a hospital be signed by the mayor or an alderman of the city or by a selectman of the town in which the patient is found.

The law now reads as follows: Chap. 87, Sect. 26: "The superintendent or keeper of any lunatic hospital, including the McLean Asylum, may receive into his custody and detain in such hospital or asylum for a period not exceeding five days, without an order of a judge, as provided in Section 11, any person as insane whose case is duly certified to be one of violent and dangerous insanity and emergency by two physicians qualified as provided in Section 13, which certificates shall be separately made and signed and shall conform in all other respects to the provisions of Section 13.

"Sect. 27. When an insane person is committed to a lunatic hospital or asylum in accordance with the preceding section, the party committing such person shall give a bond in the sum of one hundred dollars to the treasurer of such hospital or asylum with condition that he will within five days procure an order for the commitment of said patient as provided in Section 11 or, failing thereof, will remove him."

It seems to me that the present law allows of the most simple procedure possible in dealing with emergency cases of insanity, consistent with public safety.

I as superintendent of the Boston Insane Hospital will receive, at any time of the day or night, an emergency case of insanity when the terms of the law quoted are complied with, but *I cannot receive a patient in the hospital, however urgent the case may be, without the papers.* The necessary forms are always to be found at the hospital if the committing physicians require them.

I feel that it is important that the medical profession of the City of Boston should know that the office of the Registrar of Institutions (there is no longer a Commissioner of Public Institutions, that office having been abolished by law in July, 1897) receives applications for commitment of the insane on Saturday as well as other week days until half-past eleven — this hour being established by order of the Judge of Probate. That it is not necessary to notify the Registrar of Institutions of intention to commit an "emergency case," nor to detain such a case in "jail," "police station," "tombs," "Deer Island," or other "inadequate quarters," but two physicians should make two separate certificates of insanity, give the required bond of $100, see that proper transportation and suitable attendance is provided, and send the patient to the nearest insane hospital.

So far as my own knowledge goes, unquestioned cases of insanity are rarely sent to Deer Island, and a fear that you had, unintentionally, done an injustice to the very conscientious and humane medical men, well recognized experts in insanity, who examine cases sent to Deer Island, prompted me to make this explanation.

To illustrate the working of the present law, I wish to say that of the 14 emergency cases already mentioned as admitted to this hospital in 1898, six were brought with proper papers from their homes, or that of friends, to the hospital, three came to the hospital without papers, and physicians in the neighborhood were summoned by telephone to certify, five were sent from the city prison or police stations (three of them having been arrested for attempting suicide), the physicians finding them in these unsuitable places at an hour when the court could not be reached.

I would most heartily endorse, however, a plan to provide on the mainland for a suitable ward, under hospital management, for cases of insanity needing observation, and those cases whose mental condition is doubtful.

Very respectfully,
Edward B. Lane, M.D.

[We supposed that the law referred to, which allows the commitment of certain insane persons on emergency certificates, was too well known to need mentioning. It is in great measure the failure of this law to adequately meet the needs of such cases that calls for just the provision that we advocated. Contrary to the expectations formed when the law was framed, emergency papers are seldom used for various reasons, one of which is the objection of the friends of such patients to even a temporary detention in an insane hospital without their knowledge. Still weightier facts and reasons might be given, did space permit, showing the great need and demand for a suitable reception house for the insane in Boston. As to reflecting in any way upon the work of "the very conscientious and humane medical men, well recognized experts in insanity, who examine cases sent to Deer Island," nothing was farther from our thoughts. On the contrary, our editorial was largely prompted by the frequently expressed and earnest wish of these very physicians for some such remedy as we propose. — Ed.]

METEOROLOGICAL RECORD

For the week ending January 28th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...22	29.76	39	44	34	68	60	64	W.	W.	8	11	C.	C.	
M..23	30.10	38	45	31	65	58	62	N.W.	S.	10	5	C.	O.	
T...24	29.70	42	54	31	91	94	92	S.E.	S.	8	14	C.	R.	.78
W..25	29.68	38	50	26	89	53	71	N.W.	W.	33	16	O.	C.	1.02
T...26	29.84	35	47	23	65	83	74	S.	S.W.	12	18	O.	C.	
F...27	29.80	28	44	12	56	44	50	W.	W.	24	14	C.	C.	
S...28	30.05	16	23	10	78	47	62	S.W.	S.W.	8	6	O.	O.	
☞	29.85	34	44	38	73	63	68			15	12			.26

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, January 28, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1215	356	7.20	20.56	.56	.18	2.01
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	257	66	4.28	27.30	—	.78	2.31
Baltimore . .	506,389	208	52	9.60	13.20	3.81	1.41	3.36
Cincinnati . .	405,000	184	—	1.62	11.54	—	1.62	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	114	38	14.96	18.81	3.52	5.28	3.52
Washington .	277,000	136	37	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	66	20	9.06	12.08	1.51	—	1.51
Nashville . .	87,754	38	8	2.63	26.30	2.63	—	—
Charleston . .	65,165	32	11	—	3.13	—	—	-
Worcester . .	108,240	30	10	13.33	10.00	—	—	6.66
Fall River . .	95,919	44	16	6.81	31.78	6.81	—	—
Cambridge . .	89,724	31	7	9.69	3.23	—	—	3.23
Lowell . . .	88,641	36	8	2.77	10.08	—	—	2.77
Lynn	66,703	29	6	—	13.86	—	—	—
New Bedford .	66,340	31	4	9.69	3.23	—	—	3.23
Somerville . .	61,101	21	5	11.28	23.80	—	—	4.76
Lawrence . .	57,263	26	15	7.70	15.40	—	3.85	3.85
Springfield . .	56,501	23	3	4.35	21.75	—	—	—
Holyoke . . .	43,424	12	6	—	16.66	—	—	—
Brockton . .	37,278	9	1	—	33.33	—	—	—
Salem. . . .	36,883	13	2	—	15.38	—	—	—
Malden . . .	34,613	10	3	—	30.00	—	—	—
Chelsea . . .	33,468	10	1	—	—	—	—	—
Haverhill . .	32,022	8	3	—	37.50	—	—	—
Gloucester . .	30,589	6	2	—	—	—	—	—
Newton . . .	29,716	9	0	—	11.11	—	—	—
Fitchburg . .	29,438	7	1	—	14.28	—	—	—
Taunton . . .	28,167	18	4	5.55	16.66	—	—	—
Everett . . .	25,338	8	1	12.50	37.50	—	12.50	—
Quincy . . .	23,549	12	3	—	16.66	—	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	4	0	—	—	—	—	—
North Adams .	20,971	—	—	—	—	—	—	—
Chicopee . .	17,842	11	4	9.09	27.27	—	—	—
Medford . . .	16,511	6	2	16.66	—	—	—	16.66
Newburyport .	14,915	—	—	—	—	—	—	—
Melrose . . .	14,032	6	1	—	33.33	—	—	—

Deaths reported 2,718; under five years of age 704; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 182, acute lung diseases 527, consumption 348, diphtheria and croup 63, diarrheal diseases 24, typhoid fever 23, whooping-cough 16, cerebro-spinal meningitis 16, scarlet fever 14, measles 14, erysipelas 12.

From whooping-cough New York 8, Boston, Pittsburg and Providence 2 each, Baltimore and Cambridge, 1 each. From cerebro-spinal meningitis New York 6, Washington 5, Worcester 2, Boston, Somerville and Gloucester 1 each. From scarlet fever New York 11, Providence 2, Pittsburg 1. From measles New York 13, Boston 1. From erysipelas New York 6, Baltimore, Washington, Cambridge, Somerville, Springfield and Taunton 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending January 21st, the death-rate was 18.2. Deaths reported 3,979; acute diseases of the respiratory organs (London) 295, whooping-cough 104, measles 98, diphtheria 68, fever 46, scarlet fever 32, diarrhea 32.

The death-rates ranged from 13.7 in Derby to 26.6 in Swansea; Birmingham 18.1, Bradford 19.4, Cardiff 15.7, Gateshead 23.0, Hull 20.7, Leeds 16.6, Leicester 14.4, Liverpool 21.5, London 17.2, Manchester 21.3, Newcastle-on-Tyne 19.8, Nottingham 19.8, Portsmouth 17.2, Sheffield 18.9, Sunderland 21.5.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING FEBRUARY 4, 1899.

D. Dickinson, medical inspector, detached from the "Philadelphia" and from duty as fleet surgeon of the Pacific Station.

G. F. Freeman, assistant surgeon, detached from the "Arethusa" and ordered to temporary duty on the "Vermont."

H. G. Beyer, surgeon, detached from the "Amphitrite" and ordered to the "Wabash," January 7th.

J. M. Edgar, surgeon, detached from the "Cincinnati," and ordered to the "Richmond."

R. K. McClanahan, assistant surgeon, detached from the

"Southery," when put out of commission and ordered to the "Richmond."

H. L. Law, surgeon, retired, detached from the "Wabash" and ordered home.

J. G. Field, assistant surgeon, retired, detached from the "Richmond" and ordered home.

Edward G. Parker, assistant surgeon, appointed January 10, 1899.

L. L. Von Wedekind, passed assistant surgeon, detached from the Naval Academy and ordered to the Asiatic Station *via* the "Solace."

G. N. Angeny, assistant surgeon, detached from the Naval Hospital, Chelsea, Mass., and ordered to the "Indiana."

R. C. Holcomb, assistant surgeon, order of January 19th, detaching from the Naval Academy and ordering to the Washington Navy Yard, revoked.

H. A. Dunn, assistant surgeon, detached from the "Cincinnati," when put out of commission and ordered to the Naval Hospital, Chelsea, Mass.

J. W. Ross, surgeon, retired, ordered to report to the War Department for duty in connection with one of the hospitals to be established at Havana, Cuba.

C. J. Cleborne, medical director, detached from duty in charge of the Naval Hospital, Norfolk, Va., and ordered to the Naval Hospital, Philadelphia, Pa.

N. M. Ferebee, medical inspector, ordered to the Naval Hospital, Norfolk, Va.

D. N. Bertolette, surgeon, detached from the "Vermont" and ordered to duty as member of the medical examining board, Washington, D. C.

L. W. Curtis, surgeon, ordered to the "Vermont."

G. G. Cooke, medical director, retired, detached from the Naval Hospital, Philadelphia, Pa., and ordered home.

D. McMurtrie, medical director, retired, detached from duty as president of the medical examining board, Washington, D. C., and ordered home.

E. S. Bogert, Jr., passed assistant surgeon, ordered to additional duty in attendance on officers of the Navy and Marine Corps at New York.

C. F. Stokes, passed assistant surgeon, ordered to duty as member of the board of medical examiners, New York, February 1st.

G. N. Angeny, assistant surgeon, order detaching from the Naval Hospital, Chelsea, Mass., and ordering to the "Indiana," revoked.

E. S. Bogert, medical director, retired, detached from special duty at New York and ordered home.

D. Bloodgood, medical director, retired, detached from special duty at New York and ordered home.

T. C. Craig, surgeon, retired, detached from duty as a member of the board of medical examiners, New York, February 1st, and ordered home.

L. B. Baldwin, surgeon, detached from the Naval Recruiting Rendezvous, New York, and ordered home to wait orders.

E. G. Parker, assistant surgeon, ordered to the "Pensacola."

W. H. Garton, assistant surgeon, order of January 14th, detaching from the "Supply" and ordering to the Washington Navy Yard, revoked.

G. E. H. Harmon, surgeon, detached from the "Newark" and ordered to the "Amphitrite."

A. C. H. Russell, surgeon, detached from the Bureau of Medicine and Surgery and ordered to the "Newark," February 8th.

J. J. Snyder, assistant surgeon, detached from the "Wabash" and ordered to temporary duty at the Naval Hospital, Newport, R. I.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING FEBRUARY 2, 1899.

Carter, H. R., surgeon. To proceed to Havana, Cuba, as inspector. January 28, 1899.

Banks, C. E. To proceed to New York on business connected with the Purveying Division and to inspect the Service at that port. January 27, 1899.

Glennan, A. H., surgeon. Detailed by the secretary as quarantine officer, port of San Juan, Porto Rico, in accordance with Executive Order dated January 20, 1899. February 1, 1899.

Williams, L. L., passed assistant surgeon. To proceed to Alexandria, Va., for special temporary duty. January 31, 1899.

Pettus, W. J., passed assistant surgeon. To proceed to Norfolk and Portsmouth, Va., for special temporary duty. January 28, 1899.

Cobb, J. O., passed assistant surgeon. To report at the Bureau for special temporary duty. February 2, 1899.

Wertenbaker, C. P., passed assistant surgeon. To report to Governor Chandler at Atlanta, Ga., for special temporary duty. January 27, 1899.

Rosenau, M. J., passed assistant surgeon. To proceed to Alexandria, Va., for special temporary duty. January 27, 1899. To proceed to Santiago, Cuba, as inspector. January 31, 1899. Detailed by the secretary to organize quarantine service at port of Santiago, Cuba, in accordance with Executive Order dated January 20, 1899. February 1, 1899.

Eager, J. M., passed assistant surgeon. To proceed to Alexandria, Va., for special temporary duty. January 28, 1899.

Cumming, H. S., assistant surgeon. To proceed to Alexandria, Va., for special temporary duty. January 27, 1899.

Greene, Jos. B., assistant surgeon. To proceed to San Francisco, Cal., and report to the medical officer in command for duty. January 27, 1899.

Lavinder, C. H., assistant surgeon. To proceed to San Juan, Porto Rico, and report to Surgeon Glennan for assignment to duty at Ponce, Porto Rico. January 31, 1899. Detailed by the secretary as quarantine officer, Port of Ponce, Porto Rico, in accordance with Executive Order, dated January 20, 1899. February 1, 1899.

White, M. J., assistant surgeon. To proceed to Philadelphia, Pa., for duty. January 31, 1899.

Brunner, W. F., sanitary inspector. Detailed by the secretary as quarantine officer, port of Havana, Cuba, in accordance with Executive Order, dated January 20, 1899. February 1, 1899.

Gahn, Henry, steward and chemist. To proceed to New York, N. Y., for special temporary duty. February 1, 1899.

Goodman, F. S., senior hospital steward. To proceed to Havana, Cuba, for duty. February 1, 1899.

PROMOTIONS.

Carrington, P. M., passed assistant surgeon. Commissioned as surgeon. January 24, 1899.

Herty, F. J., junior hospital steward. To be senior hospital steward. January 26, 1899.

Scott, E. B., junior hospital steward. To be senior hospital steward. February 1, 1899.

SOCIETY NOTICES.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, February 13th, at 8 o'clock.

Papers: Dr. S. J. Mixter, "Typhoid Cholecystitis with Gallstones."

Dr. J. E. Goldthwait, "The Therapeutic Value and Methods of Use of the Hot-air Treatment of Bone and Joint Affections."

Dr. C. M. Green, "The Value of Posture in the Treatment of Occipito-posterior Positions."

Arthur K. Stone, M.D., *Secretary*, 657 Boylston St.

The New England Hospital Medical Society.—A regular meeting of this Society will be held at No. 3 Park Street, on Thursday evening, February 16th, at 7.30 o'clock.

Papers: Dr. Agnes C. Vietor, "The Abuse of Medical Charity; The Passing of the Charity Dispensary and Hospital." Discussion by Drs. M. F. Hobart and E. L. Dexter.

Dr. Mary Scott Jones, "The Salicylic Acid Treatment of Acne Vulgaris, with Report of Twelve Cases."

Presentation of pathological specimens by Dr. C. J. Alexander.

Clara J. Alexander, M.D., *Secretary*,
"The Bristol," Copley Square.

The New York Academy of Medicine.—At a stated meeting, January 26, 1899, of the Section on Obstetrics and Gynecology, the following officers were elected:

Brooks H. Wills, M.D., *Chairman*,
A. Ernest Gallant, M.D., *Secretary*.

APPOINTMENT.

John W. Bartol, M.D., has been appointed physician to outpatients at the Boston City Hospital.

TRANSFER.

Major Robert Burns, brigade surgeon, U. S. V., has been ordered from Camp Churchman to Puerto Principe, Cuba. Major Burns will sail for Cuba on the hospital ship *Bay State*.

RECENT DEATH.

Orvis Furman Bigelow, M.D., M.M.S.S., died in Amherst, February 2, 1899, aged sixty-three years.

BOOKS AND PAMPHLETS RECEIVED.

Human Anatomy; A Complete Systematic Treatise by Various Authors, Including a Special Section on Surgical and Topographical Anatomy. Edited by Henry Morris, M.A., M.B., Lond., Senior Surgeon to the Middlesex Hospital; Examiner in Surgery in the University of London; Member of the Council and Chairman of the Court of Examiners of the Royal College of Surgeons of England. Illustrated by 790 wood-cuts, the greater part of which are original and made expressly for this work by special artists. Second edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1898.

Original Articles.

VENTRAL HERNIA.[1]

BY JOHN W. KEEFE, M.D., PROVIDENCE, R. I.,
Surgeon to the Rhode Island and the St. Joseph's Hospitals.

VENTRAL hernia is a subject about which the text-books of the present day say but little, and in consequence the practitioner is prone to advise an abdominal support and say that nothing further is of value. The good results obtained by surgeons during the last decade in operations performed for the radical cure of hernia have led me to address you on this subject and to present cases in illustration of this distressing condition and its treatment by operation.

Umbilical hernia is most frequently found in middle-aged women, childbearing and obesity being most commonly the causes. One of the unfortunate results occasionally attending the many celiotomies of the present day is a hernia at the site of the abdominal incision, most frequently observed in operations for appendicitis where the wound has been allowed to heal by granulation. Bull reports fifty cases following operations for appendicitis which presented themselves at the Hospital for Ruptured and Crippled during a period of two years. The length of the incision, cutting off the nerve supply of the muscles, dividing muscular fibres, and the use of gauze drainage are factors worthy of careful consideration while operating for appendicitis.

The diagnosis of a ventral hernia can usually be readily made by inspection and palpation. The coverings of the hernia are skin, subcutaneous tissues and peritoneum. The contents are omentum, intestine, or both.

The hernia may cause no inconvenience for years and for this reason many are permitted to attain a great size and then may be attended with distress, difficulty of locomotion, pain, nausea, vomiting, strangulation of the intestine and peritonitis. Constipation and other digestive disturbances may be due to hernia

Spontaneous cure has never been known to occur in a case of ventral hernia in an adult. Abdominal binders and trusses may prevent increase in the size of the hernia and give support, thus giving a feeling of comfort to the patient but never a cure. Proper surgical treatment, in selected cases, is the best method to employ for radical cure of a ventral hernia. In many cases the operation is simple and attended with little risk to the patient and a complete cure of the hernia. In herniæ of long standing, the contents being irreducible, those of large size, those where there is atrophy of the muscles surrounding the hernia, and in old subjects, an operation may be contraindicated.

One may meet with one of the most difficult operations the surgeon has to deal with, in a hernia containing adherent and gangrenous omentum and intestine. The high percentage of mortality attending operations for the cure of strangulated hernia is a beacon warning us to operate early, when the hernia is of small size, and the patient in good physical condition, and not debilitated by pain and vomiting, perhaps stercoraceous in character. Bull and Coley report a mortality of less than one per cent. in four hundred operations for radical cure of hernia.

The patient may be prepared for the operation by daily baths, cathartics and enemas, with frequent doses of benzo-beta-naphthol, which I have found of great value in producing a collapsed condition of the intestines. A bichloride poultice applied over the abdomen some hours previous to the operation, followed by scrubbing and the use of the numerous antiseptics, — mercury, permanganate of potash, oxalic acid and a liberal washing with normal salt solution, — renders the site of the operation as nearly sterile as is necessary.

The incision may be over the most prominent part of the hernia or, preferably, elliptical, including the hernia sac. The sac in the vicinity of the ring should be dissected free and the muscle exposed on either side. When we have a reducible hernia to deal with the contents should be returned to the abdominal cavity before opening the sac. Where the contents are adherent, the omentum, intestine, or both should be carefully dissected from the sac and the superfluous or gangrenous omentum excised, a chain catgut ligature being used to control hemorrhage. The sac, including the fibrous ring, should be removed and the peritoneum united with catgut. My preference for bringing the fascia together is a buried silver-wire mattress suture or a machine-stitch of silkworm-gut, the ends of which are brought out through the skin at either end of the wound, thus enabling one to remove them at the end of four weeks. Schede, of Bonn, Barker, of London, and Halsted, of Baltimore, prefer the buried silver wire, while Coley and others always use kangaroo tendon. The adipose tissue and skin may be united with catgut, or silkworm-gut may be used in the integument. Sterilized gauze, cotton and a well-fitting binder constitute the dressing.

The after treatment consists of hot water for the first twenty-four hours, with an eighth of morphia if necessary, followed by easily digested nourishment.

CASE I. Female, age sixty-six years, entered St. Joseph's Hospital May 25, 1896. Married forty years. Had ten children; last child twenty-one years old. Noticed an umbilical hernia four years ago; has worn a truss for one year. About seven days ago she was unable to reduce the hernia and complained of pain in her stomach and vomited. Bowels have not moved well since, but an enema caused a slight movement.

May 25, 1896, 4 P. M. Operation under ether. Hernial sac very tense. An incision was made into the sac, which was found to contain omentum and a strangulated knuckle of intestine. The ring of the hernia was incised and the hernial contents returned to the abdominal cavity. The sac and redundant portions of skin were removed. The peritoneum was closed with catgut and fascia with a double row of mattress silkworm-gut sutures. Interrupted silkworm-gut sutures united the edges of the skin.

May 27th. Bowels moved freely.

June 3, 1896. The wound was dressed for the first time to-day and the superficial sutures were removed. The wound healed by first intention. The patient returned to her home three weeks from the day upon which she had her operation performed.

CASE II. Female, age thirty-eight years, entered the Rhode Island Hospital March 21, 1897. She has had an umbilical hernia for sixteen years, which during the past four years has caused her considerable trouble. She has been unable to reduce the contents of the hernia for the past three days and complains of a great deal of local pain. Examination reveals an irreducible umbilical hernia about the size of a large orange, which feels quite hard.

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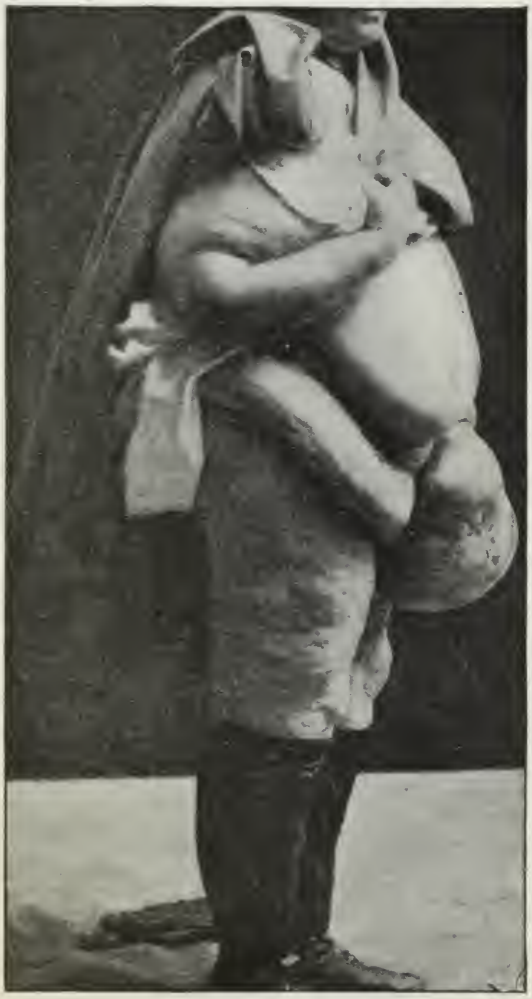
[1] Read at the meeting of the Rhode Island Medical Society, December 1, 1898.

March 21, 1897. Operation under ether. An elliptical incision was made in the skin about the hernia. The hernial sac was dissected free and opened. It was found to contain omentum, several sections of which were tied off with catgut and the distal portions of omentum removed. The sac was excised and the peritoneum united with a continuous catgut suture. The fascia was dissected free and united with buried silver-wire mattress sutures. Silkworm-gut was used to bring the edges of the wound together. An aseptic dressing was placed over the wound and held in position with a wide abdominal binder.



April 6th. First dressing. The silkworm-gut sutures were removed. Healing has taken place by first intention.

April 12th. The patient is sitting up.

April 20th. Discharged well.

Case III. Female, age forty-seven years, was admitted to the Rhode Island Hospital March 28. 1897. About twenty years ago she noticed a small protrusion at the umbilicus which gradually increased in size until two years ago when it reached the size of one's head. Binders and trusses were used without giving relief. She then commenced treatment with one of the advertising hernia-cure specialists in town. She was treated by rest in bed and injections into the sac for a period covering one year. The hernia decreased in size but never disappeared. Three weeks ago the hernia became strangulated and was attended with pain, vomiting and fainting spells. These symptoms disappeared in a few days. On examination, an umbilical hernia was found about the size of a cocoanut with contents irreducible. An operation for radical cure was advised.

March 31, 1897. Operation under ether. An elliptical incision was made through the skin about the hernia. The sac was then dissected free to the muscular aponeurosis forming the ring. The sac was opened and the interior found trabeculated and filled with adherent omentum. This omentum was ligated with a chain-stitch of catgut and about two-thirds of the mass in the hernial sac was removed, the remainder being returned to the abdominal cavity. The edges of the ring were approximated with a buried silver wire. The muscular aponeurossis was dissected free on either side of ring and united with buried mattress sutures of silver wire. The skin wound was closed with silkworm-gut and an aseptic dressing applied.

April 10th. First dressing. Silkworm-gut removed. Healing by primary union.

May 5th. Discharged well, with advice to wear an abdominal band. One and one-half years later no return of the hernia.

Case IV. Female, age forty-five years, entered the Rhode Island Hospital January 24, 1898. She was operated upon December 15, 1895, by one of the surgeons of the hospital for radical cure of a small umbilical hernia. The ring was stitched together with catgut, and over this the adjoining fascia was drawn with silkworm-gut. The skin was united with silkworm-gut. The patient was discharged cured.

Examination to-day shows a ventral hernia about as large as an English walnut occupying a position near the centre of the scar resulting from the previous operation. The preparatory treatment consisted of easily digested food, ten-grain doses of benzo-beta-naphthol every four hours and frequent doses of magnesium sulphate. Patient has a cough with a slight amount of expectoration.

January 26, 1898. Operation, chloroform and oxygen being used instead of ether on account of the chest symptoms. An elliptical incision was made in the skin about the hernia. The hernial sac was dissected out and opened. It was found to contain a mass of omentum which was easily reduced. The sac, when removed, was found to be much larger than it appeared before the operation. The peritoneum was united with catgut. The fascia, which was dissected free from the ring of the hernia, was held in apposition by two silkworm-gut sutures, used as a cobbler's stitch, the ends of the sutures then being brought out through the skin at either end of the wound. Buried interrupted kangaroo-tendon sutures were also used to hold the divided fascia together. Silkworm-gut sutures were employed to close the wound in the skin and subcutaneous tissues. An aseptic dressing was placed on the wound and covered with a large flannel binder. During the first twenty-four hours after the operation drachm doses of hot water were given every fifteen minutes if the patient was awake.

January 27th. Patient has had very little pain, no nausea or vomiting. Cough annoying, so was ordered a codeia cough mixture.

January 29th. Patient very comfortable. One-tenth of a grain of calomel was given every ten minutes until ten doses were taken, then two drachms of magnesium sulphate repeated in three hours. About the time a movement might be expected a soap-suds enema was given. The bowels moved at least once a day while patient remained in the hospital.

February 4th. Wound dressed for the first time and superficial stitches removed. Primary union.

February 16th. An unsuccessful attempt was made to remove the cobbler's stitch of silkworm-gut.

February 18th. The cobbler's stitch was to-day removed without any difficulty.

February 22d. Patient's subsequent history uneventful. Discharged to-day feeling well.

Case V. Female, age forty-four years, entered the Rhode Island Hospital January 28, 1898. This patient noticed a swelling at the navel about three months ago. This swelling appeared after she had lifted a heavy stove. Examination reveals an umbilical hernia about the size of an egg, but the patient says that at times the swelling is considerably larger. The patient was put to bed and given easily digested nourishment. Five grains of benzo-beta-naphthol was administered every four hours. Sulphate of magnesia was given every morning and followed by an enema.

January 31, 1898. Operation under chloroform and oxygen. An incision in the skin about the hernia was made and the sac dissected free down to the hernial ring. The sac was found much larger than it appeared to be by the external examination. The sac was opened and found to contain omentum which was adherent in many places. A large mass of omentum was tied off with interlocking catgut ligatures and removed. The hernial sac was excised, and the edges of the wound in the peritoneum united with a continuous catgut suture. The edges of the fascia were approximated with buried silver-wire mattress sutures and the edges of the skin with silkworm-gut. An aseptic dressing was applied. During the first twenty-four hours nothing but drachm doses of hot water were given every fifteen minutes when the patient was awake. The patient rallied well from the operation, no stimulation being necessary, and complained of only a little pain.

February 3d. One-tenth of a grain of calomel was given every ten minutes until ten doses were taken, followed by two doses of magnesium sulphate, three hours apart, and followed in two hours by a soap-suds enema. The bowels moved freely.

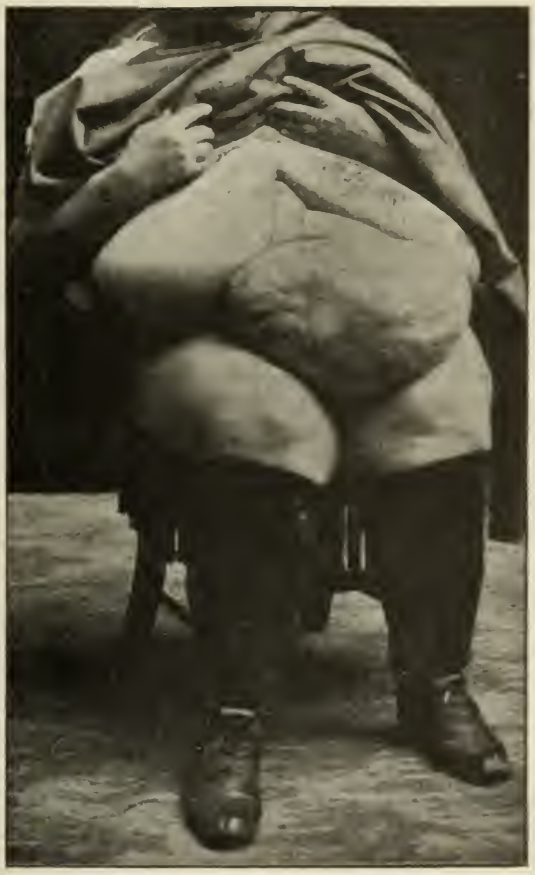
February 6th. Similar cathartics were given.

February 8th. First dressing. Silkworm-gut removed. Primary union.

February 26th. Discharged well.

November 21, 1898. Examination shows no evidence of return of hernia.

Case VI. Female, age 38 years, entered the Rhode Island Hospital February 28, 1898. Two years ago she was operated upon for appendicitis with the formation of an abscess. Incision and drainage of the abscess were the methods employed, with the gradual closing of the wound by granulation. Two weeks after the wound had healed she noticed a small hernia at the site of the incision. This hernia gradually grew larger and caused so much inconvenience that she consulted an advertising sure-cure-for-hernia specialist, who treated her by injections into the hernial sac twice a week during a period of about seven months. The alleged cure failing to cure, she consulted a surgeon, who operated for the cure of the hernia eleven months ago. Three days after the operation the hernia reappeared and is now as large as two fists. It is irregular in shape, the ring admitting four fingers. This cannot be replaced in the abdominal cavity, only a portion disappearing when the patient is in a recumbent position. She was again treated by the hernia-cure specialist twice a week for a period of four months. Patient was given ten-grain doses of benzo-beta-naphthol every four hours and daily doses of salines followed by an enema.



March 5, 1898. Operation under ether. An elliptical incision about eight inches long was made, including the old cicatrix. The sac was dissected out with difficulty on account of the depth of the wound, there being about three inches of fat in the abdominal wall; the irregularity of the sac; and a diverticulum extending for some distance between the external and internal oblique muscles. The intestine and omentum were adherent to the sac and it required careful dissection to free them. Portions of omentum were tied off with catgut and excised. The peritoneum was united with a continuous catgut suture. Several buried wire mattress sutures brought together the transversalis and internal oblique muscles, and a continuous silver-wire suture approximated the severed edges of the external oblique muscle. The wound in the skin was closed with silkworm-gut and an aseptic dressing of iodoform gauze, sterilized gauze, cotton, and a binder applied. Drachm doses of hot water were given during the first twenty-four hours, with one-eighth grain of morphia for pain.

March 5th. Calomel, a saline and an enema caused a free evacuation from the bowels.

March 9th. Wound dressed and a small amount of pus was found in the lower angle of the wound.

March 10th. Superficial stitches removed.

April 24th. Lower part of wound healed by granulation.

April 27th. Discharged. No evidence of reappearance of hernia.

November 29, 1898. Examination shows no evidence of return of the hernia.

CASE VII. Female, age forty-nine years, entered St. Joseph's Hospital October 2, 1898. She has borne four children and had one miscarriage at three months. About fifteen years ago she noticed a small swelling at the navel, which has never wholly disappeared. The swelling has gradually increased in size until now it is as large as a child's head. Examination reveals a large umbilical hernia whose contents are irreducible. The skin covering the mass is ulcerated and has the appearance of an epithelioma. At frequent intervals during the past year she had had vomiting spells lasting from a day to ten days. Lately they are scarcely two weeks apart. The abdomen is very large, the wall containing a thick layer of fat. Rest in bed, benzo-beta-naphthol, calomel, salines, enemas and easily digested nourishment constituted the preparatory treatment. After a bath and thorough scrubbing with soap and water a bichloride poultice was worn during the night previous to the operation.

October 5, 1898. Operation under ether. The abdomen was scrubbed with ethereal soap solution, potassium permanganate, oxalic acid, bichloride of mercury, ether and sterilized salt solution. An elliptical incision was made about the hernia, the sac dissected free and opened. A large mass of omentum and several coils of intestine were found adherent to sac, which was trabeculated. The intestine and omentum were carefully dissected free, portions of the omentum being removed after ligating with a chain-catgut suture. The remainder of the contents of the sac were returned to the abdominal cavity and the sac excised. The peritoneum was dissected from the fascia and united with a continuous catgut suture. Several buried silver-wire mattress sutures brought the fascia firmly together. The skin was united with silkworm-gut. Owing to the thick layer of fat three deep silkworm-gut sutures were passed through the skin, fat and fascia at some distance from the wound on either side. An aseptic dressing was applied. The operation was long and tedious, owing to the trabeculated condition of the sac and the firmly adherent intestine and omentum; yet at the conclusion of the operation the patient's pulse was good, no stimulant having been given. Saline enemas given and drachm doses of hot water with coffee during the first twenty-four hours.

October 15th. Ten days after the operation the three tension silkworm-gut sutures removed. Slight amount of pus about one of the stitches.

October 19th. The silkworm-gut suture in the skin was removed. Primary union.

November 3d. Patient sitting up.

November 5th. Discharged well. There is firm union of the wound.

CASE VIII. The following case whose photographs I present with this history illustrates the enormous size an umbilical hernia may attain. One is better able to judge of the size of the hernia by comparing it with other portions of the body than if measurements were taken. At the time of my examination of the hernia I judged that fully three-fourths of the intestine and omentum occupied the hernial sac, rendering operation out of the question, as the present abdominal cavity was not large enough to hold all of the intestine contained in the sac. Another interesting feature of this case is the unusual hypertrophy of the mammary glands, one reaching to the umbilicus, as shown in the photograph. The patient did not consider the large size unusual or of any special importance, having suffered no inconvenience from them. This case emphasizes the value of early operation.

This patient, age sixty-two years, a hardworking woman, mother of five children, noticed twenty-eight years ago, while carrying her fourth child, a small swelling in the umbilicus. During the following ten years the swelling increased in size, but she thinks it has remained stationary during the past eighteen years. When she was married her weight was only one hundred pounds. After reaching her thirtieth year her weight has gradually increased until at present she weighs two hundred and sixty-two pounds. She had the hernia ten years before she wore a support of any kind. Trusses she found of no value, so she contrived an ingenious band to fasten about the body with a bag attached in front to receive and support the hernia. During the past five years she has had almost constant diarrhea. She has had only two attacks that appeared to be due to strangulation of the hernial contents, one two years ago and the other, for which I was consulted, one and one-half years ago. At present she runs a sewing machine and does the greater part of her own housework including washing.

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A CASE OF MEDIASTINAL SARCOMA.[1]

BY GEORGE G. SEARS, M. D., BOSTON.

JACOB D., a Russian, twenty-five years old, a carpenter by trade, was admitted to my service at the City Hospital in August, 1898. He knew nothing of his family history, and had paid so little attention to his own symptoms that only a very meagre account of them could be obtained. Last December he noticed that he was growing short of breath and that his face and neck became swollen when stooping or working hard. Two months ago he began to cough and occasionally spit up a little dark blood, and three weeks ago he noticed that his chest had enlarged. There has been no pain, but he has had a feeling of soreness across the lower portion of his chest, and has lately lost considerable flesh.

Physical examination showed a fairly nourished but anemic man with cyanotic extremities. The jugulars and the larger veins of the arms and in the axillæ, especially the right, were dilated and prominent, and at the level of the insertion of the diaphragm in front was a zone of dilated capillaries, while the veins of both legs, particularly below the knees, were varicose. The chest was much enlarged, especially on the left side, which moved but little with respiration. His appearance gave the impression that a cord had been drawn tightly around the body at the level of the umbilicus, and that the thorax had been forcibly and greatly distended, the left side yielding more than the right to the pressure. There was dulness at the base of the right chest, while the left was dull throughout, the dulness crossing the median line and extending behind two-thirds of the way to the right posterior axillary line, and in front to the right nipple, from which the upper limit curved inward toward the second cartilage. Full resonance was, however, obtained nowhere in the chest except in the right axilla. Vocal fremitus and resonance were present, although faint, over the upper half of the left front and at the apex of the axilla, but were lost below. In the left back fremitus could be felt only in a small area between the spine and the angle of the scapula. The respiration over the left front, except at the base where it was absent, was faint, bronchial and accompanied by friction sounds. Over the upper portion of the back it was feeble, becoming bronchial and distant below the angle of the scapula. Over the right chest the fremitus, voice and respiration were within normal limits. The cardiac impulse was most marked in the fifth right interspace almost in the nipple line. The sounds were normal. The lower edge of the liver extended fully two fingers' breadth below the costal border. The spleen could not be made out.

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[1] Read at a meeting of the Clinical Section of the Suffolk District Medical Society, November 16, 1898.

Except the inguinal and the left epitrochlear, which were slightly enlarged, the glands were normal in size. The leucocytes numbered 16,600. The pupils and voice were normal.

The following day an aspirating needle was introduced in the seventh interspace in the left posterior axillary line and sixteen ounces of bloody fluid withdrawn, a culture from which was negative. No appreciable relief to the patient followed, although the percussion note, the fremitus and the respiration improved down to the angle of the scapula; below that the respiration remained faint and bronchial. As no material change had occurred in the signs over the lower left front and anterior axillary region, a needle was introduced the next day in the sixth space a little outside the mamillary line, and thirty-eight ounces of bloody serum withdrawn. The fluid flowed out in vigorous spurts synchronous with the heart, and a distinct pulsating movement was imparted to the needle itself, which was increased when the patient held his breath. Very marked pulsation was also visible over the front of the left chest, but as this had not been previously noticed and disappeared soon after, it was probably due to a more vigorous action of the heart under the excitement of the operation. Some relief followed, and at the earnest solicitation of the patient another attempt to introduce the needle was made the next day, the fifth space just outside the nipple line being chosen, but so much resistance was encountered, the needle evidently entering a solid body, that it was withdrawn and again inserted in the interspace below, but the result was negative.

On August 7th fremitus could be felt over the left back nearly to the base, but was lost as the posterior axillary line was approached. The respiration below the angle of the scapula had also become more normal, the bronchial character being less marked. Fremitus over the right front could be felt faintly down to the third rib, but was lost below. In the right back friction had been noted four days ago over a considerable area between the inner border of the right scapula and the vertebral column, and to-day it is also present near the angle of the scapula. Medium moist râles are heard over the whole right back.

August 15. A capillary pulse has been seen and felt in the fingers during the past two days. Except a gradual loss of strength, there has been no marked change in his general condition, and, apart from the orthopnea, there is no especial suffering. A clinical diagnosis of new growth of the mediastinum and left lung, with secondary deposits in the right, had been made, but as its nature was still doubtful a hollow needle was introduced in the third left interspace anteriorly, where the signs showed the greatest density of the lung, with the hope of obtaining a shred of tissue. The attempt was successful, a small fragment being caught in the needle, which, under the microscope, was pronounced by Dr. Mallory to be a spindle-celled sarcoma.

August 16. He failed very rapidly and died.

Autopsy, August 17th, by Dr. Mallory. The thoracic cavity is occupied by a large tumor mass, which binds together the thoracic viscera, the heart being firmly imbedded in it. The lungs are pushed backward and downward and at their roots are firmly attached to the tumor. Height of diaphragm, seventh interspace on left, eighth rib on the right side. The left pleural cavity is obliterated, the visceral pleura being bound by firm fibrous adhesions to the parietal. Right pleural cavity contains about one litre of blood-stained fluid. On the surface of the parietal pleura are numerous, more or less spherical, soft, whitish tumor masses, varying in size from .5 to 2 centimetres in diameter.

The main tumor mass has evidently arisen from the posterior mediastinal lymph glands. It forms a large mass, measuring 22 x 18 x 14 centimetres, which has shoved the heart forward and to the right. On the left side it projects forward as far as the outer surface of the heart. On the posterior and on the left side the growth is ultimately joined to the muscle substance of the heart wall, from which it cannot be separated.

The pericardial sac is entirely obliterated by old, fibrous adhesions, excepting a few small pockets containing clear fluid. The pericardium can be stripped up only with great difficulty and is found to completely surround the main tumor mass. So far as can be made out, the growth extends between the visceral pericardium and the heart muscle on the left and posterior surfaces. The heart is not hypertrophied and the muscle is of good color, excepting that in the wall of the left ventricle is a small, white, opaque area, apparently fibrous in character. The valves and cavities are normal.

Left lung. — Pleura firmly adherent to the parietal pleura. The cut surface is dry, grayish in color, mottled with dark green and black, and is studded with whitish, soft, projecting, round tumor nodules, varying in size from 1 to 5 centimetres in diameter. One of the larger nodules near the base of the lung shows dark red, hemorrhagic areas.

Right lung. — Pleura smooth and glistening. Surface of a grayish color, mottled with green and black, and studded with tumor nodules of varying size, .5 to

4 centimetres in diameter, which project more or less above the level of the surface, some of them being almost pedunculated. On section these nodules are found to be of the same nature as those in the substance of the left lung. The cut surface of this lung shows the same appearance as that of the left. The bronchial and mesenteric glands are not involved.

The liver extends to the distance of a hand's breadth below the costal border; weight 1,950 grammes, color normal and markings distinct. On its surface and scattered through its substance are numerous tumor masses, similar to those in the lungs, and giving the same appearance on cross section.

Examination of fresh tissue from the tumor showed spindle cells and small round cells. The other organs were of no special interest.

Anatomical Diagnosis. — Sarcoma of posterior mediastinum, lungs and liver; old myocarditis; old pleuritis.

In reporting the physical signs I have only attempted to indicate the daily variation which resulted from the rapid absorption of what remained of the fluid after aspiration and from the production of adhesions between the two pleural surfaces, which in less than two weeks, through the formation of organized connective tissue, had become so firm that they could only be separated by cutting. We were evidently dealing with two collections of fluid, one of which was located in the left back, the other in front. The latter may have been inside the pericardium, which would more readily account for the spasmodic character of the flow through the needle, but no evidence as to its situation could be obtained at the autopsy, both surfaces of the pericardium and of the pleura being bound firmly together by dense, fibrous adhesions.

The completion of the clinical diagnosis, through obtaining a shred of the sarcomatous tissue, must be ascribed chiefly to good fortune, first, in striking one of the tumor nodules, which were separated by considerable areas of normal lung, and, second, in having it remain in the hollow of the needle by which it had been punched out. It is to be regretted that, owing to a misunderstanding, a bacteriological examination only was made of the pleural exudate, as corroborative evidence as to the character of the tumor might have been obtained by the discovery of characteristic cells.

ANTI-TUBERCULOSIS BILL. — We learn from the *Medical News* that a bill has been introduced in the Senate at Albany requiring all cattle brought into the State to have had a test thirty days previous at the hands of a State official, who is empowered to furnish a written permit to import them. All transportation companies are forbidden to carry cattle without such certificate and permit. Violation of the law is punishable by fines.

THE "KANSAS MEDICAL JOURNAL." — The *Kansas Medical Journal*, which has been published for the last ten years in Topeka, Kan., has been discontinued, and its former editor, Dr. W. E. McVey, will have editorial control of the *Medical Monograph*, a one hundred and fifty page monthly, which will be published in its place.

ANOTHER CENTENARIAN. — It is announced that Miss Mary Spooner, of New Bedford, has passed her one hundred and fifth year.

A POINT ABOUT INCISIONS AND SCARS IN THE HAIRY SCALP.

BY GEORGE H. MONKS, M.D., BOSTON.

I HAVE frequently noticed that scars in the scalp often seem to be unduly broad, — much more so, in fact, than the nature of the injury and the prompt healing of the wound would lead one to expect, — and for a long time I was at a loss to know the reason of this.

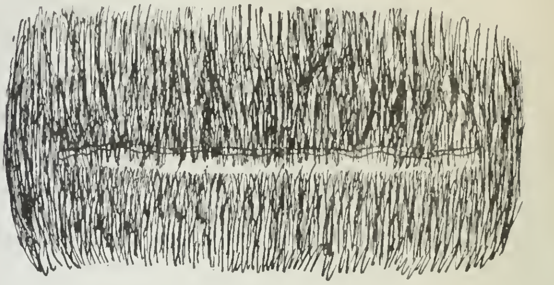


Fig. 1.

Fig. 2.

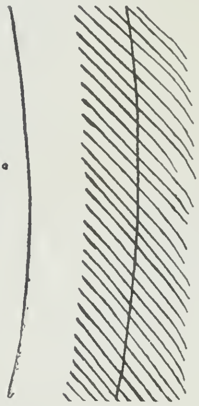
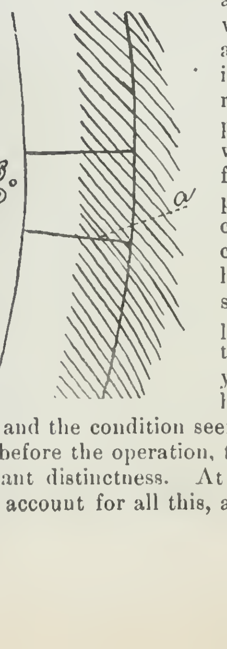


Fig. 3.



Some years ago a boy was sent to me in whom there was a long transverse scar directly *across the back of the head.* This scar had resulted from an incised wound, but after healing, it appeared to be so broad that the parents of the boy desired that some operation be done, with a view to making it smaller and less noticeable. It was while this case was under my care that I think I discovered one of the causes, if not the principal one, of the breadth of certain scars in the scalp. The scar in this boy's head was carefully dissected out for its entire length, and fine stitches were introduced, which brought the lips of the wound into perfect apposition, after which the wound was sealed up with cotton and collodion. The dressing and the stitches were removed after the usual period. The first result was most satisfactory. The freshly healed wound appeared as a fine line which could hardly be seen, except when the hair was held away from it on all sides. Every one was pleased. Later, however, to our chagrin, when the young man began to brush his hair the scar reappeared, and the condition seemed to be about as bad as it was before the operation, the scar showing up with unpleasant distinctness. At first I was entirely at a loss to account for all this, and was afraid the freshly formed scar tissue had already stretched; but on examining the parts carefully with a magnifying glass I found that the whitish area which I had considered to be made up entirely of scar tissue was by no means cicatricial in all its parts, for, while the upper part was a linear cicatrix, the lower part was simply *normal scalp without hair!* In other words, the upper part of the whitish area was *cicatricial* and the lower part *bald.* The scar therefore had not stretched at all! (See Fig. 1.)

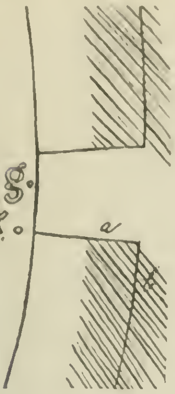


Fig. 4.

But how to account for the baldness? The hairs which originally occupied the bald area must have fallen out *some time after the wound had united*, for I was confident that, after I had removed all the dressings and stitches, there was no indication whatever of baldness anywhere near the wound. Finally the *real explanation* came to me: the truth is that when I was doing the little operation I had paid no attention to the fact that the hairs on the back of the head, being obliquely attached from above downwards, have roots which are likewise oblique (see Fig. 2). I had made my incisions in the usual manner of incisions, that is, at right angles to the surface of the skin, — and in that way had succeeded in cutting off the roots of many of the hairs, which hairs came to the surface of the skin below the edge of the incision. (A glance at Figs. 3 and 4 will explain this more clearly.) After the healing of the wound, all the hairs whose roots had been thus cut off subcutaneously naturally stayed in place so long as no traction was applied to them (see Fig. 5); but as soon as they were pulled upon — as in brushing the hair, for instance — they came out at once, leaving a broad strip of baldness, as it were, all along the lower border of the cicatrix. (See Figs. 1 and 6.)

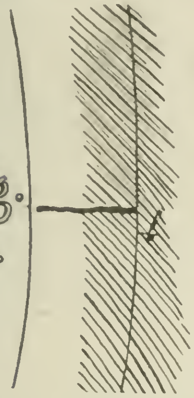


Fig. 5.

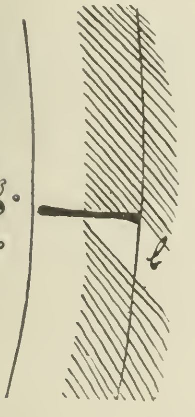


Fig. 6.

From time to time, since I did this operation, I have made it a point to examine scars in the hairy scalp, and can state that in almost all the cases where I have found a scar so placed as to suggest that the original incision must have divided some of the hair-roots, I have noticed a bald area on one side or the other of the real cicatrix, the whole thus giving the appearance and effect of a larger scar than actually existed. It would seem from this that most transverse scars in the back of the head must be associated with a line of baldness, while vertical ones are almost always free from it; and clinical observation appears to establish this point.

From all this it would therefore seem best, that, whenever it is necessary for any cause to make an incision into the hairy scalp in the back of the head, and especially where it is particularly desirable to conceal the scar, the knife should be held in a position at right angles to the surface of the skin in cases where a vertical incision is to be made, but in a position oblique in reference to the skin whenever a transverse incision is contemplated; that is to say, as your knife blade goes through the scalp keep it parallel to the roots of the hairs, so as not to divide them. This point may also find its application in the treatment of scalp-wounds, whenever it becomes necessary to trim the raw edges of the wound before stitching them together.

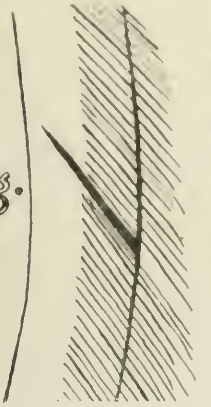


Fig. 7.

If in the case just reported I had made the incision obliquely in reference to the surface of the skin instead of at right angles to it, I should probably have had a result more like that shown in Fig. 7 than that in Fig. 6.

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PARALYSIS FOLLOWING CEREBRO-SPINAL MENINGITIS.

PRELIMINARY REPORT.

BY W. N. BULLARD, M.D., BOSTON.

I DESIRE to call attention to certain forms of paralysis occurring in the course of cerebro-spinal meningitis and continuing after the acute stage of the disease has passed. These differ clinically from the ordinary forms of paralysis in certain respects and do not entirely correspond to the other forms of paralysis which are commonly described in connection with this disease. All my cases have occurred in children.

These cases, while at times and in certain stages precisely resembling cases of paralysis in anterior poliomyelitis, are to be distinguished clinically from the paralyses of infantile paralysis by the following conditions:

(1) In cases of paralysis following cerebro-spinal meningitis we find that pain on passive motion of the limbs persists to a degree rarely, if ever, found in anterior poliomyelitis. Such pain and tenderness sometimes exists during the acute stage of anterior poliomyelitis for two or three days, but if it lasts much longer than a week I am inclined to consider the case as one in which the diagnosis is to be very carefully examined. It is not uncommon, on the other hand, for great pain, on passive motion of the limbs or of certain joints, especially the ankles, to exist in cerebro-spinal meningitis one, two or more months after the acute stage of the disease has ceased. Tenderness on pressure over the muscles also persists much longer than in anterior poliomyelitis where it rarely continues

much beyond the acute stage, but it does not last as long as the pain on motion, active or passive.

(2) The character of the paralysis also differs, at least in the early stages, although later it is often nearly indistinguishable. There is always a tendency to spastic contracture in the early stages of the paralysis of cerebro-spinal meningitis. This is sometimes so marked that it is evident on casual examination — certain portions of the limbs are flexed and there is a decided muscular resistance to passive motion due to a permanent tonic contraction. More often, and particularly in the later stages, this tonic or spastic condition is not so evident and shows itself only or principally in the extreme degree of flexion (extension) at the ankle-joint, the foot often being in a position of equinus, its axis almost in direct continuance of that of the leg.

(3) The knee-jerk is, on the whole, less affected than in anterior poliomyelitis. In other words, there seems to be a greater tendency to retain the knee-jerk. This is rather a question of degree than of anything else and may have been accidental in our patients. I lay stress on it only in connection with other symptoms. The knee-jerk is sometimes in this affection, as in anterior poliomyelitis, totally abolished.

(4) In addition to these clinical signs we have the history of the initial attack to guide us. While certain cases occur in which it is difficult to determine the character of the initial attack, as a rule the existence of the retraction of the head and of contractures of the muscles of the back or limbs, the continued presence of extreme tenderness or pain on movement and the duration of the acute stage of the disease enable us to determine more or less accurately the character of the case.

I have been accustomed to regard any case as suspicious in which the acute stage lasted more than seven days.

In conclusion, I should like to draw attention to the fact that the conditions in these cases closely resemble, if they are not identical with, those reported in certain epidemics of so-called anterior poliomyelitis, and to suggest that in some of these the disease, which assumes a more fatal course than is usual in anterior poliomyelitis, may really be cerebro-spinal meningitis.

NOTE. Since reading this paper I have seen one of the cases attacked in the Cherryfield epidemic, and its present condition would tend to confirm the above view.

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Clinical Department.

BROMOFORM, CARBOLIC ACID, AND WHOOPING-COUGH — THE DANGERS OF EACH.

BY J. S. STONE, M. D., BOSTON.

SEVERAL months ago I was called upon to treat some small burns scattered upon the body and extremities of a girl of two years. In brief the history was this: The child had suffered for weeks from a whooping-cough from which she had not yet recovered. In the early part of the disease a physician who had seen her had prescribed a bromoform mixture. No marked therapeutic effect was noticed until the bottle was almost empty. A dose was given as usual one evening. The child soon sank into such a profound sleep that a physician living close by was at once summoned. On his arrival the child was considered dead. He "pronounced" the case diphtheria. In fact he is said to have averred that the child had died of the "black diphtheria." Obviously there was no help for the child. Prompt disinfection was essential; otherwise the whole family was doomed. Accordingly the physician bravely entered the room and sprinkled a liquid from a bottle over the bed on which the partly-covered child was lying. While doing this, in order to avoid as much as possible the risk of breathing in the contagion, he held a handkerchief over his nose on which the mother said "ether or something of the sort" was poured. The physician then retired.

Sorrow and anxiety prevailed throughout the household during the night. Next morning hope returned. The child, "dead from the black diphtheria," was discovered to be still warm and was seen to move slightly. A third physician was summoned. The child recovered so rapidly that in a few days she whooped as loudly as ever. Meantime some burns had been noticed about the hips and side, the thigh, the heel and the arm. They were small, round, deep and very slow in healing.

At the end of six weeks financial considerations compelled the family to call on me as the district physician. The ulcers finally healed, the whoop ceased, and the child is now again in good health.

In regard to methods of disinfection comment is not necessary. If this narrative impresses on any one the fact that bromoform, owing to its high specific gravity, settles extremely rapidly and that, therefore, while given safely if dropped on sugar, its use in mixture is extremely dangerous, and if it further impresses the fact that liquefied crystals of carbolic acid, which always settle out if the strength is more than one part to twenty, produce burns which heal very sluggishly, it may be that the child did not suffer in vain.

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Medical Progress.

REPORT ON PROGRESS IN OBSTETRICS.

BY FRANK A. HIGGINS, M.D., BOSTON.

PUERPERAL SEPTICEMIA.

MUNDÉ,[1] in the President's Address before the American Gynecological Society, says that unquestionably in the large majority of cases of puerperal sepsis in private practice the infection comes from the fingers or instruments of the physician or nurse, and this statement applies not only to the poorer classes, but to a certain extent to those in better circumstances. It has been frequently stated that the women in well-conducted lying-in asylums are far safer from puerperal infection than those who are attended in their own homes. It is not only the hands and instruments which may introduce the infection, but also the clothing of the attendants, which may have been in contact with some infectious case and which has not been thoroughly cleaned and disinfected. Retention of portions of placenta or clots or membranes does not necessarily mean their decomposition and a septic infection. This takes place only when the germs are introduced from without. He is confident, however, that it is not always the fault of either the physician or the nurse if septic germs enter after parturition. He believes that the septic germs may be sucked into the gaping vagina during change of position, or after a fecal evacuation, or by auto-infection. As an instance of the latter, he mentions a case of fatal sepsis in which the patient herself, having a discharging felon on her forefinger, introduced another finger of the same hand into the vagina to relieve an itching which she felt.

The paper of Williams,[2] in which he reports bacteriological examinations of the vaginal secretions of one hundred pregnant women, goes to support the statements of Mundé. In no one of the one hundred cases did he find a single streptococcus or staphylococcus aureus. He believes the difference in his results in these cases from those in his previous reports and from those of most other observers is occasioned by faulty technique in taking the cultures.

In conclusion, he says that death from puerperal infection is always due to infection from without, and is usually due to neglect of aseptic precautions on the part of the physician and nurse.

FEVER IN THE PUERPERIUM.

Williams[2] reports the results of the bacteriological examination of forty cases of fever occurring in the puerperium, taking cultures in all cases in which the temperature rose to 101° in the cases confined in the hospital, and where the temperature reached 102° in the out-patient cases, and in his own practice.

His method of taking the cultures is, with the patient in Sims's position, under the most thorough aseptic precautions, to introduce a sterilized curved glass tube 25 centimetres long and 4 millimetres in diameter into the uterus up to the fundus. The uterine lochia is then aspirated into the tube by a syringe bulb, the tube is withdrawn and immediately sealed at either end to preserve for examination.

He found streptococci in eight cases, staphylococci in three, colon bacilli in six, gonococci in two, diphtheria bacilli in one, typhoid bacilli in one, gas bacilli in one, miscellaneous bacilli in seven and cultures were sterile in sixteen cases. In several of the latter bacilli were seen in preparations but there was no growth. A mixed infection was found in several of the cases. In one case malarial plasmodia were found in the blood.

Streptococci, which are conceded to be the most common etiological factor in the fatal forms of puerperal infection, were found in twenty per cent. of the cases, none of which were fatal. He believes in the great practical value of careful bacteriological examinations of the uterine lochia and remarks on the great relief experienced at finding the uterus sterile in patients with a temperature of 103° or 104° on the third and fourth days.

DRY LABOR, ITS DANGERS AND TREATMENT.

In a paper on this subject Brodhead[3] considers dry labor especially grave, and says it occurs in about 15 per cent. of all cases, but fortunately two-thirds of these are in multiparæ. In addition to the increased length of the labor, the exhaustion and the severity of the pains, on the part of the mother, there is also danger of laceration of soft parts, pressure necrosis, liability to sepsis, hemorrhage, rupture of uterus and prolonged convalescence.

There is a much higher infant mortality, largely due to failure to recognize early the dangers. The chief dangers to the child in such cases, he says, are asphyxia and meningeal hemorrhage, the two being frequently associated; the asphyxia being due largely to pressure on the cord, and the meningeal hemorrhage to the pressure on the fetal head in dilating the os.

He advises early interference after being assured that the membranes have ruptured. The method employed is first to administer at once a large dose of castor oil and glycerine, followed shortly by ten grains of sulphate of quinine, to be repeated every three hours, with one-thirtieth grain of sulphate of strychnine every two hours, careful watch being kept for unpleasant effects of either. He believes this treatment aids in the induction of labor and increases the number and strength of the pains. When the membranes rupture in the early part of labor, the treatment is the same except the cathartic is omitted. Hot vaginal douches of lysol, three quarts every six hours in a one-per-cent. solution not only render the vagina aseptic and lubricate the mucous membrane, but stimulate the contractions and seem to soften the cervix. He advises operative interference in the first stage of dry labor only in case of breech presentations, when he introduces his hand and brings down a foot for the purpose of making occasional tractions.

COCAINE IN RIGID OS UTERI.

Farrar[4] advocates the use of cocaine for rigid undilatable os uteri and reports five cases, all primiparæ, from nineteen to forty years old, in which cocaine was used with unvarying success, and dilatation was always secured in a very few minutes. The cocaine was used after failure by other methods. With and without chloroform he had attempted dilatation mechanically by hands, by instruments and by rubber bags; he had also administered chloral and morphine. His first application of cocaine was made for the purpose of securing local anesthesia before incising the cervix, and he was greatly surprised at finding the os fully dilated on making an examination shortly after. In all of the cases complete dilatation occurred within six minutes.

The cocaine is used in a ten-per-cent solution, is rubbed over the external and internal surfaces of the cervix, and the cotton is allowed to remain in contact with the os for a few minutes. With five consecutive and successful cases and no failures, all of which were very obstinate cases, he thinks he is justified in claiming more than simple coincidence to account for the phenomenon.

Since the report by Farrar several cases have been reported by others with equally successful results. May,[5] in a primipara with eclampsia, having a very rigid os only slightly dilated, applied cocaine in a similar manner while the patient was being chloroformed. By the time the patient was sufficiently anesthetized he was able to pass his hand into the os.

Bidis[6] reports a case in a debilitated primipara, in whom the pains were feeble; the rigid os was completely dilated when he made his examination ten minutes after applying the cocaine.

Taylor,[7] in a letter, adds the testimony of several cases with similar results and with no unpleasant symptoms.

PAINLESS TREATMENT OF FISSURES IN THE NIPPLES.

Maygrier[8] and Blendel report on the treatment of forty cases of cracked nipples occurring at the Charite

Hôpital. The nipples were dressed with orthoform,* which brought about complete anesthesia during suckling and also kept the cracks aseptic. The application of the powder causes only slight smarting. The infant was put to the breast a quarter of an hour after the application was made and sucked eagerly, as orthoform has neither taste nor smell. The anesthesia persists for some time. Orthoform powder was tried alone, orthoform followed by a moist dressing of boric acid, and finally a strong alcoholic solution of orthoform dropped into the cracks. They consider this last method the best, for it caused no more initial smarting, and it quite did away with infection of the breast, probably because the solution was able to penetrate into the recesses of the fissures.

VOMITING OF PREGNANCY.

Bacon[9] writes at length on the subject of vomiting in pregnancy. For hyperemesis gravidarum, except the extreme cases, he insists upon absolute rest in the horizontal position, the position being constantly and persistently maintained, it often being advisable even to have the head lower than the feet; all nourishment is given without raising the head and during vomiting the patient is turned on her side, on no account allowing her to be raised. Absolute rest equalizes the circulation and insures against unnecessary loss of strength and vital energy. In addition, in the severest cases he recommends the subcutaneous injection of salt solution. He injects hypodermatically one quart of normal salt solution twice a day, washes out the stomach every morning, and gives rectal injections of salt solution three or four times a day.

Examinations are made to correct, if possible, any pathological conditions existing in the pelvis. Applications to the cervix, as nitrate of silver, are used chiefly for the moral effect, while sinapisms, the hot-water bag or ice bag may be applied to the epigastrium. Nerve sedatives are to be used with great caution, while the effects of morphia he considers generally bad.

He believes there is no place for abortion in the treatment of hyperemesis gravidarum; that it is efficient only when unnecessary, and that those who most strongly recommend the induction of abortion warn against its employment in the last stages. The waste of energy from the shock and loss of blood is often enough to hasten the death of the patient.

The summary of his recommendations for treatment is:

(1) The abnormal irritability of the nervous system, including the vomiting centre, is to be allayed by keeping the patient in the horizontal position, by attention to the skin, bowels and kidneys, using rectal and, if necessary, hypodermatic injections of salt solution.

(2) The hysterical condition which is so commonly found present should be controlled by strengthening the will and influencing the dominant ideas of the patient.

(3) All sources of peripheral irritation should be discovered and treated.

(4) In extreme cases subcutaneous saline injections serve the threefold purpose of (*a*) dilating the blood and increasing vascular tension; (*b*) eliminating toxins through renal and intestinal emunctories; (*c*) furnishing two most important kinds of food.

(5) Induction of abortion is never indicated. At a stage when it is safe and efficient it is not necessary, and in extreme cases it adds greatly to the danger, rarely stops vomiting, and can be substituted by the artificial serum.

PROTARGOL AS A SUBSTITUTE FOR NITRATE OF SILVER IN OPHTHALMIA NEONATORUM.

Cheney,[10] during his service at the Massachusetts Charitable Eye and Ear Infirmary, used protargol, the new silver salt, in twenty-five cases of ophthalmia neonatorum. He says protargol produces almost no irritation, is not precipitated by albumins or salt solutions, does not stain the skin, and apparently not the conjunctiva after prolonged use. A two- or four-per-cent. solution was employed sometimes with a brush, sometimes with absorbent cotton on a probe, and in a few cases a quarter of a dropperful was emptied over the conjunctiva. In ten of the cases protargol was used in the right eye, and nitrate of silver in the left.

The lesser degree of irritation from protargol was usually very noticeable. There was not the profuse lachrymation and there was less tendency to the formation of a fibrinous coagulate, the grayish shreds of tissue and the false membranes in the protargol eyes. In regard to the rapidity of the decrease and duration of the discharge, he considers the two remedies rank about equal. In regard to its prophylactic properties, Dr. Richardson writes of its use at the Boston Lying-in Hospital as follows: "Protargol (two per cent.) has been used in every baby's eyes at birth for about three months. None of the redness and swelling of the lids, and none of the temporary secretion that immediately follows the use of nitrate of silver (one per cent.), have been observed. In the few cases of purulent ophthalmia that have been treated with protargol the length of the course of the disease has apparently only been slightly shortened, but the severity of the attack has been decidedly lessened. Whether this has been due to the protargol or not, we have been, during the three months it has been used, more successful in confining the infection to one eye."

He says it is to be hoped that protargol, being apparently as valuable, and not causing the irritation of nitrate of silver, will be adopted generally as a prophylactic in routine practice.

RUBBER GLOVES IN OBSTETRIC PRACTICE.

Döderlein[11] says he is convinced that the cases of puerperal infection in his clinic have been caused by the examinations made by the students. On this account he has instituted the practice of using thin rubber gloves for making examination in all obstetrical work. They are fitted in an excellent degree for the purpose, because (1) they are impermeable; (2) they are easily and surely made sterile by steam, boiling water or antiseptic solution; (3) they can be used repeatedly, and when used with a one-per-cent. lysol solution they are smoother and more slippery than the hand; (4) they are not so expensive but that they can be generally used.

The gloves had been in use about three months, during which time there had been no case of rise in temperature. Examinations are also much less painful to the patient.

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* Orthoform is a white voluminous powder without odor or taste, and said to be absolutely non-poisonous. In addition to its antiseptic properties, it acts as a local anesthetic when applied to mucous membranes or to fissures, wounds and ulcers. It may be administered internally but not used subcutaneously. (Rep.)

The gloves are boiled for half an hour and then kept in a one-per-cent. solution of lysol. In using, the hands are made thoroughly aseptic, and the glove filled with a one-per-cent. solution of lysol, so that it slips on easily. For economy the glove is used only on the examining hand.

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[5] May. Loc cit., November 26, 1898, p. 1656.
[6] Bidis. Loc. cit., December 17, 1898, p. 1847.
[7] Taylor. Loc. cit., October 29, 1898, p. 1374.
[8] Lancet, November 19, 1898, p. 1369.
[9] Bacon. American Journal of Medical Sciences, vol. cxv, 1898, p. 683.
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Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

J. BERGEN OGDEN, M.D., SECRETARY.

Regular Meeting, Wednesday, November 16, 1898, Dr. H. F. Vickery in the chair.

Dr. George G. Sears read a paper on

SARCOMA OF THE MEDIASTINUM.[1]

Dr. W. F. Whitney showed a specimen of

SARCOMA OF THE MEDIASTINUM.

I thought possibly this might serve to round out Dr. Sears's case, as he has not been able to preserve his specimen. This is a case that recurred six or eight years ago, of a man of thirty-nine, and in whom there was a large mass which occupied the anterior portion of the mediastinum, the pericardium on the right side and growing over the auricle half-way down to the apex of the heart and infiltrating the lung, especially the anterior parts of the lower and middle lobes, and pushing the lung back. The diaphragm was infiltrated on the right side. The microscopic examination proved this to be a large round-celled sarcoma. The specimen shows the involvement of the heart muscle to a great extent, and yet the patient must have lived while it was in this condition. In order to remove the heart a cut had to be made through the tumor mass and the heart itself. There are two large cavities which are cysts of softening, the tumor is also extensively permeated by smaller ones. There were no metastases. Growth was by direct extension, and it was restricted to the right side of the pericardium, the right side of the heart, and to the left lung and diaphragm on that side.

Dr. James H. Wright showed a specimen of

SUPERNUMERARY PANCREAS.

This specimen was found at an autopsy in the pathological laboratory of the Massachusetts General Hospital. The organ was about the size of a chestnut, generally ovoid in form, and was situated in the wall of the jejunum near the duodenum, where it formed a tumor-like swelling beneath the peritoneal coat of the gut. The mucosa over the gland showed a small papilla, which was regarded as containing the duct. The specimen came from the body of a woman aged forty-eight years.

Dr. J. L. Morse read a paper on

THE FREQUENCY OF RICKETS IN INFANCY IN BOSTON AND VICINITY.

Four hundred consecutive infants under two years of age, medical out-patients at the Infants' Hospital, were examined for evidences of rickets. Eighty per cent. showed more or less marked signs. A rosary was present in every case. Only those enlargements were considered as a rosary which could be felt both parallel and vertical to the long axis of the rib. It was the only symptom in 40 per cent. It was accompanied by but one other symptom in 20 per cent. The single associated symptom was most often delayed dentition, next, enlargement of the cranial eminences. Delayed dentition occurred in more than 50 per cent. Large fontanelle, large eminences, retraction at the diaphragm and enlargement of the epiphyses of the extremities were each present in about 15 per cent. but were symptoms of later development. Marked rhachitic deformities were rare. About 40 per cent. of the cases were Russian and Polish Jews. Only 12 per cent. came from the southern races. Breast milk was a part of the diet in 43 per cent. and formed the whole in 18 per cent. The only influence acting on all alike was improper hygienic surroundings. These therefore must be considered as the most potent cause of rickets in Boston and vicinity.

Conclusions. — Eighty per cent. of the children under two years of the poorer classes of Boston and the adjacent cities have rickets. A rosary is not a normal phenomenon but is an evidence of rickets. It is a constant symptom of rickets. It is the earliest symptom to develop and in 40 per cent. of all cases under two years is the only symptom. The next most common symptom is delayed dentition. Other symptoms, while they may show themselves at any age, do not, as a rule, develop earlier than the tenth month. The cause of rickets in Boston and vicinity is to be found in improper hygienic surroundings rather than in race or diet.

Dr. Rotch: I think Dr. Morse's paper on rhachitis in early life is the most thorough on this subject that has yet appeared. I cannot give any figures, but my impression also is that there is more rhachitis in this vicinity than some years ago, and especially among the younger subjects in their first and second years. It is quite difficult sometimes to detect rhachitis, as Dr. Morse has said. The rosary is a very important sign to be looked for, and I think that we often overlook these rhachitic changes simply from being unable to get at the rosary; it may be small and the infants may be very fat, as they were when condensed milk was so generally used. In the past experience of the hospital, where condensed milk was almost universally used, there was not so much rhachitis detected, but I always believed that rhachitis was present. They became so fat, from the high percentage of sugar used in condensed milk, that the bones were covered, especially the epiphyses, so that they could not be easily felt. Then, again, we should remember that there are probably a number of cases of rhachitis that are not detected by the rosary, from this pathological condition occurring on the inside of the sternum and cartilages rather than on the outside. I remember that Dr. Whitney showed me a specimen some years ago that beautifully illustrated this point. I myself have noticed more cases in the early months of life in the last few years than ever before, and have been very much struck by it. When Dr. Morse spoke of the breast-fed infants as also showing evidences of rhachitis I in my mind drew a little different conclusion from what he has about its not being the diet that influences this class of cases. I suppose we would all agree that the hygienic surroundings are a prominent and perhaps the most prominent factor, but the breast milk must be judged in the same way as are the other foods. It depends much upon what the breast milk is, and the breast milk will often be found to be very deficient in fat, and in this way lead to improper nutrition. We therefore should be a little careful in saying that the diet does not have an influence on the production of rhachitis. In the same way, when we speak of a certain number of infants being fed on modified milk, we should be careful, as modified milk does not mean anything really unless the proper modifications are given, and in a large percentage of the rhachitic cases the proper modifications are not given in these cases, especially where the milk is modified at home — where they frequently do not get the correct percentages. I wish to say, however, that Dr. Morse has done very much in aiding in the modification of milk in the homes of the poor. I think Dr. Morse's work is very much to be praised.

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[1] See page 157 of the Journal.

DR. WENTWORTH: An interesting thing in connection with Dr. Morse's paper is that he finds a number of cases under four or five months, and it is generally considered a rare disease before that time. I think it is generally considered to begin at four or five months, and not earlier. As to susceptibility, statistics show that certain races are susceptible; whatever the etiology of rickets is, the race peculiarities have something to do with it. Negroes and Jews are more affected than other races. Another interesting thing in connection with infants under three or four months is the condition that we know as infantile atrophy; whether a disease or not, it is supposed to begin in the early period, and at that time rickets is a rare disease. It is a curious thing that those cases that have infantile atrophy well developed, even when several months old, have no rickets. They live in the same hygienic condition and have the same food as these cases that have rickets, which is a hard thing to explain; but it is a fact, I think, that in these cases of infantile atrophy one rarely finds rickets, even when they are a number of months old.

DR. TOWNSEND: I have listened with great interest to Dr. Morse's paper, which shows an immense amount of very careful work. I think it is rather difficult to draw sweeping conclusions as to the etiology of rickets. I was very much interested in what Dr. Morse said about the hygienic surroundings, etc. They differ from the conclusions reached by other observers as to the effect of race. Dr. Snow, of Buffalo, made some interesting observations two or three years ago. He examined some 200 cases under three years of age, and found that among the Italians 70 per cent. were rhachitic, whereas of the other nationalities only 11 or 12 per cent. were rhachitic. It is certainly the case that rickets impresses one as being much more common among the Italians and negroes than it is among the Irish and other more northern races. One conclusion which Dr. Snow reached as to the etiology of rickets was that it occurred among southern people brought to a more northern climate. He did not believe it was due necessarily to unhygienic surroundings, because the Irish and some of the other more northern races have just as bad surroundings as the Italians, and, furthermore, the Italians in their own southern clime in Italy are very free from rickets. A year or two ago I took occasion to look up cases of rickets in the Out-Patient Department of the Children's Hospital, and with the help of my house-officer recently I have completed it to August 1897 from 1883. Now the number of cases of rickets diagnosticated in the out-patient records is of course very small as compared with Dr. Morse's statistics, because the diagnosis was made where it was an evident case. They were not looked for especially. There were 4,091 patients in the Out-Patient Department of the Children's Hospital during that time, and of these 276 were cases of rickets, that is, a percentage of 6.7. The majority of these cases were between six months and three years of age. Two were noted as under two months of age. In connection with the very early cases of rickets I will mention a case I reported some years ago of congenital rickets; the child showed very marked evidence of congenital rhachitis. There is one point on which I should take issue with Dr Morse, and should question whether it was not possible that the diagnosis of rhachitis from the rosary alone is perhaps misleading. In one half of his cases, as I understand it, the diagnosis of rickets was made from the existence of rosary alone. I know I have been tempted to think there was a rosary in emaciated cases where I afterwards concluded there was none. As Dr. Rotch said, there are many cases of marked rickets where there is scarcely any rosary to be felt outside, but where post-mortem examination shows enlargement of the epiphysis inside. Delayed dentition is sometimes seen in babies in the best hygienic surroundings and fed in the best way, where there is no suspicion of rickets, and early dentition is sometimes seen among the rhachitic. As to the food as an agency in rickets, I tabulated as well as I could the food of these 276 cases, and I found the analysis as follows: 4 entirely on breast milk; 37 had never nursed; 32 had nursed at least fourteen months and had been additionally fed; 52 nursed and fed from an early period, and 50 had everything from the table; 24 fed on condensed milk, and patent foods were used in 60 cases. Those fed on patent foods and condensed milk all suffered from a deficiency of fat, a lack of which has proved experimentally in the case of animals to be a cause of rickets.

DR. WENTWORTH: There is this to be said of the patients who attend the Out-Patient Department at the Children's Hospital: their hygienic surroundings are better than those of patients who attend the Infants' Hospital. A great many of them live in the suburbs and are more comfortably situated than the patients that attend the Infants' Hospital; so that statistics drawn from the two sources are not comparable.

DR. WHITNEY: I should like to ask Dr. Townsend whether the negro in the South is free from rickets? He spoke of the Italians being free from rickets at home.

DR. TOWNSEND: Dr. Snow referred more especially to the Italians. The larger part of his clinic of rhachitics was among the Italians. I believe there is a great deal of rhachitis among the negroes in Washington, but I cannot say as to the negroes farther south.

DR. VICKERY: Some years ago a paper was read in this room on the subject of rhachitis occurring among the negroes in Boston, and the author, Dr. H. C. Haven, thought that the disproportionate frequency of the disease among the negroes was due to something else than their food. He considered that the cause was racial degeneration, under climatic conditions so different from those of tropical Africa. The paper was published in the *Boston Medical and Surgical Journal*, January 14, 1886.

DR. ROTCH: There was quite a discussion at that time, and I think it was suggested that syphilis was a factor to be considered in the colored race suffering from rhachitis in our community. That paper was based on cases in the West End. We know that syphilitic subjects have a tendency to rhachitis.

DR. VICKERY: About the southern races, that is, races out of their natural habitat, my impression when I studied in Germany and in Vienna was that there was a very large proportion of the poorer children of Austria and Germany rhachitic in their native place. I should like to know if Dr. Rotch thinks that is true of Germany.

DR. ROTCH: Yes, there is a very large number there, and I was very much struck by it in coming home. I supposed rhachitis was rather a rare disease here, but of late years it seems to be more frequent. There was a large number of cases of cranio-tabes in Germany, but I think it is rather rare here.

DR. MORSE: When I came to work up these cases I found much reason to regret that I had not kept as careful notes on the cases that did not have rickets as on those that did, because I think they would have given us interesting comparative figures as to diet and race. As to diet, I did not wish to be understood as saying that diet does not have anything to do with the causation of rickets, because I think it does, but it seemed to me that in this series of cases it was a comparatively unimportant factor and that the hygienic surroundings were the most important. As to race — now I wish to read my remarks again: "These figures must not be taken as denoting the relative frequency of rickets in the various races; they merely show the relative proportion of the races that attend the clinic and make up the poorer classes." These cases represent 80 per cent. of all the cases under two years that came to the Infants' Hospital. Now it seems to me that in all probability they are fairly representative of the proportions of the different races — that is, those figures cannot teach us anything. As to the proportion of the cases whose ancestors came from northern and southern climates, only 39 of these 318, giving the most liberal interpretation to southern climates, came from southern climates; the rest came from climates at least as far or farther north than Boston. Then as to Dr. Townsend's criticism on the rosary, as I stated in the beginning of my paper, the reason I undertook the study of these 400 cases was to find out whether a rosary was, or was not, a symptom of rhachitis. My conclusion is that it is a symptom of rickets, and that a rosary is not a normal thing in infancy. For, in the first place, a certain number of babies do not have rosary. Then the fact, which I took the trouble to find out from the men who are working especially on the bones in Boston, that bones which show such a slight degree of beading that it cannot possibly be recognized during life by external examination show microscopically very marked signs of rickets. In order not to call anything a rosary which was not, I accepted only those which could be felt distinctly in both diameters of the rib, that is, vertically and horizontally. When Dr. Townsend says that in the Back Bay babies he finds delayed dentition and a rosary, my idea is that those babies have rickets in a mild form, and that the error is in not calling the condition rickets. Dr. Wentworth's remark about infantile atrophy is undoubtedly true. It seems to be a very unusual thing to find a rosary in cases of infantile atrophy. The explanation no one knows. One suggestion is that possibly infantile atrophy means impaired nutrition, while rickets means disturbed nutrition. This, of course, can only be taken in a very broad sense.

DR. TOWNSEND: I think other things must be taken into consideration in the diagnosis of rickets. One is sweating of the head. I think where the baby cuts its first tooth as late as the tenth or twelfth month, and is well nourished and does not have sweating of the head, it would be unwise to call that a case of rickets. The point I wish to make about the rosary is, that it is often difficult to say whether a rosary is present or not, and one ought to take other signs aud symptoms into consideration before making a diagnosis of rickets. With an undoubted rosary, the diagnosis is, of course, plain.

DR. WENTWORTH: It is not so much delayed dentition as irregular dentition that is a sign of rickets. Some normal babies have teeth at six or seven months, and some at ten or eleven, or later; it is not that their teeth come at a certain time, but that the intervals are irregular. As I understand it, that is the diagnostic point about dentition; I mean that where dentition is interfered with it is not delayed dentition that is the sign, it is the irregularity in dentition. In a normal baby dentition may be delayed.

DR. MORSE: I merely want to repeat that a normal baby does not have a beading at the junction of the cartilage and the rib which can be felt. No matter how thin a baby is, or what its condition of nutrition, if it has not rickets there cannot be anything felt.

DR. VICKERY: In treating babies I have often been in doubt whether to call them rhachitic or not. The line between perfect health and slightly developed rhachitis is not well marked. I have been led to believe that many babies, who seem to be healthy and happy little citizens, yet betray some signs of rickets.

When Dr. Rotch spoke about the obesity of some subjects with rickets I was reminded of a small boy who entered the wards of the Massachusetts General Hospital lately. My impression is that when he entered he was thirteen months old; I know he weighed twelve pounds. When he was ten months old he weighed no less than thirty-six pounds. He started in life on the breast and then he had condensed milk and Nestle's food, his diet being confined to canned goods. When he entered my ward he had purpuric spots and a rosary, and the appearance of athrepsia, and, I am sorry to say, went on failing. His parents took him out before there could be an autopsy.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninety-Third Annual Meeting, held in the City Hall, Albany, January 31, and February 1 and 2, 1899.

FIRST DAY. — TUESDAY.

INAUGURAL ADDRESS.

The President, **Dr. Roe**, in his inaugural address referred to the large membership, seven hundred and eight, and the satisfactory state of medical education throughout the State. The medical libraries in the State contain a total of 138,110 volumes, over one-third of this large number being in the New York Academy of Medicine. Speaking of medical legislation, he referred to the dispensary bill now before the legislature as the best of its kind yet introduced. The mooted question of the control of midwives he would have referred to the State Board of Medical Examiners.

STATE BOARD OF MEDICAL EXAMINERS.

The report of the committee representing the Society was presented by **Dr. M. J. Lewi**, of New York.

COMMITTEE ON HYGIENE.

Dr. Henry R. Hopkins, of Buffalo, in a very carefully prepared report, directed attention to the very significant fact that 49,875 deaths had resulted from diseases which were in all probability communicable, and therefore preventable.

COMMITTEE ON LEGISLATION.

Dr. Frank Van Fleet, of New York, the chairman of this committee, declared with some pride that his committee had been instrumental in securing the defeat of quite a number of bills brought before the legislature last year. Among the more important of the bills for whose defeat the committee assumed the responsibility, and claimed credit therefor, was one which deeply interested the profession throughout the State, and which received the support of many of them, that is, the now celebrated Sullivan Dispensary Bill.

FRACTURE OF THE CERVICAL VERTEBRÆ.

Dr. Chauncy P. Biggs, of Ithaca, reported the case of an aged man who had been injured by being thrown out of the back of a wagon on his head. The specimen presented showed that while the direction of the canal had been changed, it had not been obliterated. The cord had been injured by a spicule from the fifth vertebra, the body of which had been crushed forward, thus giving rise to a prominence which made the case appear as if the upper fragment had been dislocated forward. The prominent features were the clear mental condition, the persistent and marked subnormal temperature and the possibilities of surgical treatment.

Dr. A. M. Phelps, of New York, advocated active surgical interference in such cases, and **Dr. Mynter**, of Buffalo, while agreeing with him theoretically, admitted that his own experience with such operative treatment had been discouraging.

AN UNUSUAL INJURY TO THE KIDNEY.

Dr. W. D. Garlock, of Utica, reported a case of extensive laceration of the kidney as a result of a blow received in a game of base-ball. A little blood-stained urine was passed shortly after the accident, but it was not until the following morning that the dulness over the region of the left kidney, the abdominal tenderness and increasing tympanites led to consultation and abdominal section. At the operation there was found to be some peritonitis, with free blood in the cavity, with a subperitoneal hematoma in the left kidney. Through a posterior incision this hematoma was reached, and the coagulated blood evacuated, and then, owing to the extensive laceration of the kidney, removal of this organ was resorted to. The patient died three hours later.

Dr. Mynter said that where the urine was bloody after such an injury, and there was an effusion of blood under the skin of the nates and scrotum, one was reasonably safe in diagnosticating rupture of the kidney.

FORMALDEHYDE DISINFECTION.

Dr. W. H. Park, of New York, presented a communication on this subject. He stated that this gas is exceedingly irritating to the respiratory passages, and that it is, chemically speaking, an unstable substance. For purposes of disinfection this gas is commonly generated from the ordinary formalin, or 40-per-cent. solution of formaldehyde. It is a deodorizer as well as a disinfectant, and has been shown by experiment to be comparatively non-toxic to the higher animals. For surface disinfection it suffices to use three ounces for each one thousand cubic feet of space to be disinfected. It has but feeble penetration, and where it is desired to act through only one layer of moderately thick fabric at least three times this quantity should be provided. Bedding, upholstered furniture, and heavy fabrics generally should be disinfected by steam, or by formaldehyde in special chambers provided with vacuum apparatus, to secure the requisite degree of penetration. The time should be at least eight hours, and the quantity of gas at least ten times that used for surface disinfection. Books may be readily disinfected by spreading them out on shelves and exposing them to formaldehyde gas, and cars and ambulances may be effectively treated in large chambers. For the ordinary disinfection of dwellings about twelve ounces of formalin should be used for each one thousand cubic feet, the temperature of the air in the room should not be below 50° F., and the time of exposure to the formaldehyde should be at least four hours. It costs from fifteen to thirty cents per thousand cubic feet, as compared with a cost of eight or ten cents for disinfection by fumigation with sulphur.

THE DANGERS OF THE LONG-TUBE NURSING BOTTLE.

Dr. Ernest Wende, of Buffalo, gave in this paper the results of a careful investigation, chemical, bacteriological and microscopical, into the structure of these rubber tubes, and the feasibility of thoroughly cleansing them. A series of photomicrographs were exhibited to prove that the rubber used in their manufacture is very porous, and that they are full of pits and seams which are admirably calculated to afford breeding-places for bacteria.

As a result of this research, and at the suggestion of **Dr. A. Walter Suiter**, of Herkimer, the State Society passed a resolution calling upon the health authorities of cities and towns to assist in prohibiting by law the sale of these bottles.

THE TRANSMISSION OF DISEASE BY THE USE OF SECOND-HAND CLOTHING.

Dr. William G. Bissell, of Buffalo, in a very suggestive communication on this subject, showed that his experiments had demonstrated the presence of virulent tubercle bacilli in the pocket of a military coat that had been worn at one time by a consumptive officer.

INTESTINAL RESECTION.

Dr. W. L. Cuddeback, of Port Jervis, reported an interesting case of extensive intestinal resection that had come within his personal experience. Although the operation was done for a strangulated hernia, and when the patient was rapidly passing into a condition of collapse, thirty inches of small intestine were resected and the Murphy button used with complete success.

Dr. R. H. M. Dawbarn, of New York, criticised the use of the Murphy button for end-to-end anastomosis when safer methods were at the disposal of the surgeon.

THE CLOSE RELATION BETWEEN THE NASAL AND THE CRANIAL CAVITIES, AND BETWEEN NASAL AND CRANIAL DISEASE.

Dr. William C. Kraus, of Buffalo, read a paper with this title, in which he took the ground that the nasal passages served as ventilators of the brain, and insisted that all children should be taught to cleanse the nose with warm Dobell's solution as a part of the ordinary daily toilet.

THE IMPORTANCE OF EARLY EXAMINATION AND TREATMENT OF CATARRHAL MOUTH-BREATHING IN THE PUBLIC SCHOOLS.

Dr. Clarence C. Rice, of New York, read this paper, one object of which was to direct attention to the probable danger arising from the daily association in our schools of a large number of children suffering from disease of the nose and throat. In his experience, about 90 per cent. of mouth-breathing children had permanent nasal obstruction, chiefly the result of enlargement of the pharyngeal tonsil. Although the diagnosis could often be made by exclusion, he was in the habit of using for this purpose a small post-nasal curette, which is much more easily used for purposes of exploration than the finger in a struggling child. Unless there is hypertrophy of the adenoid tissue in the pharynx the curette will not remove any tissue.

HOW TO TREAT SHOCK.

Dr. R. H. M. Dawbarn, of New York, presented this paper which, in spite of its title, dealt not so much with the treatment of shock as with its prevention. This preventive treatment consisted in the use of saline infusions at the right time and at the right temperature. As a result of experiments in the physiological laboratory he had learned that the right temperature for the infused fluid is 120° F., instead of 100°, as is usually employed. These very hot injections exert a far more potent influence on the flagging heart.

Dr. A. T. Bristow, of Brooklyn, remarked that no one need fear to use these hot infusions, as they did not injuriously affect the albumins in the blood.

Dr. Walter B. Chase, of Brooklyn, discussed the important part played by fear and nervous apprehension in the causation of shock, and also of the shock unnecessarily inflicted by a thoughtless prolongation of the period of anesthesia.

FEVER IN ASEPTIC SURGERY.

Dr. B. Farquhar Curtis, of New York, presented a paper on this subject, in which he stated that the kind of fever to which he had reference was often the result of absorption of fibrin ferment or nuclein from the broken-down tissue and coagulated blood in the wound. To make the subject clear, temperature charts were exhibited to show the temperature range after infection of an operation wound, after clean, aseptic wounds and in pure shock. The temperature in absorption fever rises within twelve hours after the infliction of the wound, while in cases of moderate infection this rise of temperature is usually somewhat longer delayed. Aseptic fever is characterized by a relatively slow pulse and but little constitutional disturbance.

Dr. A. Vander Veer, of Albany, spoke of a number of recent operative cases, occurring during the epidemic of la grippe, in which the temperature had risen to 104° or 105° F., but with no evidence of infection of the wounds.

THE USE OF STREPTOCOCCUS ANTITOXIN IN PLEGMONOUS INFLAMMATION.

Dr. A. T. Bristow, of Brooklyn, read a paper on this subject, in which he reported fourteen cases in which the remedy had been tried. He concludes from these observations: (1) that cases of idiopathic erysipelas may be quickly controlled by the serum, giving rarely more than two injections of ten cubic centimetres each; and (2) that in phlegmonous inflammations the serum does nothing more than check the extension of the process.

PUERPERAL INSANITY — A CURSORY REVIEW FOR THE GENERAL PRACTITIONER.

Dr. Carlos F. Macdonald, of New York, read this paper. He spoke of and recommended the old, familiar classification of this disorder into mania, melancholia and dementia, and stated that in most instances the third variety was only observed as the terminal stage of the other two forms. Among the causes of puerperal insanity were mentioned heredity, prolonged anxiety during pregnancy, severe post-partum hemorrhage, fright or shock from the death of the child, and sepsis.

MILITARY MEDICINE AND SURGERY.

The general discussion on this subject was opened with a paper on

CARDIAC DEGENERATION AS OBSERVED IN THE SOLDIERS OF THE LATE WAR.

by Dr. Henry A. Fairbairn, of Brooklyn. Of the 272 soldiers that had come under his care after their return from Cuba, 155 exhibited disturbance of the vascular system, 133 giving auscultatory signs indicative of a weakened heart wall.

HYGIENIC CAMPS.

Dr. H. R. Hopkins, of Buffalo, discussed this part of the subject, fortifying his statements with carefully selected statistics. He stated that the first step in securing a healthful camp was to abolish the abominable camp sink. For a regimental camp, a good system of piping and sewerage could be provided for $1,000;

the water supply would cost about $4,000, and the balance of $5,700 would be expended in protecting the soil in such exposed parts as the kitchen and sinks with a covering of concrete. Those persons who are inclined to look upon such an expenditure as extravagant should think of the costliness of disease, and also remember that for the one item of fitting up the ventilating system of the *Oregon* the Government expended over $30,000.

DR. VANDER VEER, of Albany, and DR. W. WARREN POTTER, of Buffalo, continued the discussion, relating their personal experience with camp life in the Civil War.

THE RELATIONS OF PREVENTIVE MEDICINE TO POLITICAL ECONOMY.

DR. GEORGE W. BRUSH, of Brooklyn, read a paper on this subject, in which he asserted that consumption was responsible for the death of 13,000 persons every year in New York State. As yet Massachusetts is the only State which has established a state hospital for consumptives, although history shows that efforts in the past, by stringent legislation, to check the progress of this grim spectre have always resulted in a very decided diminution in the number of its victims.

THE RELATION OF THE CONSUMPTIVE TO THE STATE.

DR. JOHN H. PRYOR, of Buffalo, in a paper with this title, reinforced the arguments of the preceding speaker. He asserted that, according to conservative estimates, more than 50,000 consumptives are to be found within the borders of New York State, and that ideal isolation can be best secured by State care of these citizens. Such an institution, if reserved for incipient cases, should be almost self-supporting, and should yield 60 per cent. of recoveries. Taking the moderate estimate that each citizen is worth at least $1,000 to the State, it follows that 13,000 deaths from consumption means a pecuniary loss to the State of $13,000,000 annually. Surely the State can well afford to take care of its consumptives!

After listening to the preceding papers, the Society voted to send immediately to the governor and to each member of the legislature a communication urging the establishment of State sanatoria for consumptives.

(To be continued.)

Recent Literature.

A Text-book upon the Pathogenic Bacteria for Students and Physicians. By JOSEPH J. MCFARLAND, M.D., Professor of Pathology in the Medico-Chirurgical College, Philadelphia, etc. Second edition, revised and enlarged, with 134 illustrations. Philadelphia: W. B. Saunders. 1898.

The second edition of this book is a great improvement over the first edition. The subject matter is divided into two parts, one dealing chiefly with general considerations concerning bacteria and with laboratory methods, the other devoted mainly to specific diseases and their bacteria. In this edition more space has been given to bacteriological technique, with the idea of making the book serve the purpose of a laboratory manual as well as a theoretical presentation of the subject of bacteriology.

The insertion of references to original papers is also a feature of this edition. In two instances there are mistakes in these references, namely, on page 168, "volume seven" should be inserted before "third memoir," and on page 203, *Journal of the American Medical Association* should be *American Journal of the Medical Sciences.*

The laboratory directions as a whole are satisfactory. It is to be noted, however, that no mention is made of the important Councilman-Mallory method for the rapid preparation of blood-serum culture-tubes, which has already appeared in two American books on bacteriology, published more than a year ago.

The part devoted to infectious diseases and their bacteria has been enlarged by the addition of chapters on the bacteriology of whooping-cough, mumps, yellow fever, hog cholera and swine plague, and of descriptions of the bacillus aërogenes capsulatus and proteus vulgaris. In this part of the book some points call for special mention.

The description of the histological lesions produced by the tubercle bacillus is not that of a good observer of such lesions. It is not clearly presented and is not likely to mean much to students. On the other hand, the description of the histological lesions of glanders is much better than is usual in the books. We are glad to note that at last one modern text-book has shown some disposition to question the dictum of Baumgarten that the glanders "nodule" has essentially the same histogenesis as the tubercle of tuberculosis. Observations of some years' standing have shown that in some cases, at least, the lesions produced by the glanders bacillus are primarily suppurative and not proliferative, as Baumgarten stated.

In the chapter on Actinomycosis we find no reference to the view held by some of the best authorities, that the parasite of actinomycosis is one of the "streptothrix" group, a group standing between the fungi and the bacteria. It is also to be pointed out that the author does not emphasize the fact that the occurrence of "clubs" in the colonies of actinomyces, in cases of infection of man, is not constant nor characteristic. The statement that actinomycosis is rare in human medicine is open to serious question. The description of the histological changes produced by actinomyces infection is very incomplete.

The diplococcus intracellularis meningitidis is not described. This is a serious omission.

The author states that in diphtheria "the bacilli are found only in the membranous exudation" and that the diphtheria bacilli do not, as a rule, distribute themselves through the circulation of an inoculated animal, though at times they may be found in the heart blood. We do not think that these statements fully express the facts. It has been clearly shown that in most fatal cases of infection with the bacillus of diphtheria, both human and experimental, the bacilli are found scattered throughout some of the chief internal organs in small numbers.

In this connection, we wish to mention that it has been a matter of surprise to find that the work of Blasi and Russo-Travali on the question of mixed infections in diphtheria should be quoted, while no reference is made to the more conclusive observations on the same subject which have been published in this JOURNAL from the Pathological Laboratory of the Boston City Hospital.

It is gratifying to read, in the chapter on Pneumonia, that genuine acute lobar or croupous pneumonia is now almost universally regarded as due to infection with the pneumococcus of Frænkel and Weichselbaum. This organism alone, and no other, has been considered for a long time as the sole and only primary infectious agent in cases of genuine croupous pneumonia by those American pathologists who have had practical experience in the bacteriology of the disease, but this idea has been slow of acceptance by those who write medical books.

On the other hand, the author's treatment of Friedländer's bacillus does not meet with our approval. He has largely ignored the numerous observations made upon this organism, or closely related forms, in connection with pathological processes. While he has pointed out that in all probability the organism never causes genuine croupous pneumonia, as so many have taught that it may, he has failed to state that it can give rise to a special form of pneumonia in which the exudate is composed largely of the bacilli themselves.

Perhaps the chief defect of this work, looking at it as a whole, is the inadequate presentation of the pathological histology of bacterial diseases. It is our opinion that in such a book as this one aims to be, a fairly accurate and extensive description of the finer anatomical changes produced by bacteria should be required. The book is well illustrated by many reproductions of photomicrographs, taken, for the most part, from the atlas of Frænkel and Pfeiffer. Most of these are good and are more instructive than drawings.

We can recommend this book to students and others interested in the subject of bacteriology.

A New Classification of the Motor Anomalies of the Eye Based upon Physiological Principles, together with their Symptoms, Diagnosis and Treatment. The Prize Essay of the Alumni Association of the College of Physicians and Surgeons, New York, for 1896, by Alexander Duane, M.D., Assistant Surgeon Ophthalmic and Aural Institute, New York. Pp. 100. New York: J. H. Vail & Co. 1897.

This little book is (1) an elaborate study of the part taken by the individual extrinsic ocular muscles in the combinations utilized to produce the various ocular movements; (2) a classification of the motor anomalies as follows: (*a*) anomalies of individual muscles or of their nerve-nuclei; (*b*) anomalies of the associated centres for parallel movements; (*c*) anomalies of the centre for convergence movements; (*d*) anomalies of the centre for divergence movements; (*e*) anomalies of sursumvergence; (*f*) anomalies of rotation movements; (*g*) mixed forms.

This classification is carried out with great minuteness under numberless sub-headings in order to make the methods of exact diagnosis in these troublesome cases plain. The advice as to treatment is conservative, sensible and well considered.

As a conscientious study of a difficult subject the essay deserves great praise.

Casualties of the Spanish War. — The *Journal of the American Medical Association* states that, as officially reported to the House Committee on Invalid Pensions, there were: Officers killed, 26; enlisted men killed, 257; officers wounded, 113; enlisted men wounded, 1,487. Deaths from disease, May 1st to December 31st, officers, 111; men, 4,854.

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ANNUAL REPORT OF THE PRESIDENT AND TREASURER OF HARVARD COLLEGE FOR 1897–98.

The report of Harvard College, which has just appeared, is a bulky volume of 411 pages, and contains much of interest, to a small portion of which we shall briefly allude.

President Eliot discusses at some length the record of the Harvard men, both graduates and undergraduates, who took part in the war with Spain, and gives in the following statement the motives which influenced the University authorities in giving advice to the men still under their jurisdiction: "The effort of the president and the deans was to prevent hasty and inconsiderate enlistment, but not to discourage the enlistment of able-bodied young men of legal age whose family circumstances warranted them in offering their lives to the country. So long as there are wars it will be expedient, especially in democracies, that the best educated young men bear their full share in war's hardships and dangers. The highly educated class must show itself as brave, tough and disinterested as any other and as faithful to ideals. If its education has been right it will always show itself superior in these respects to every other class." The president combats the idea that football is especially adapted to the training of soldiers, inasmuch as personal contact comes so little into play in the modern battle. In this connection it is fair to say that those who hold a contrary view would merely maintain that the mental and physical qualities which make a man a good football player would, other things being equal, also make him a good soldier. To be a good soldier, as to be a good football player, certainly involves many other qualities than those of bodily prowess or strength.

The review of athletics is succinct, and clearly expresses the attitude of the head of the University toward them. He objects to intercollegiate contests among students who have just entered upon their college course, and believes that they should be excluded from university teams. He urges the adoption of local competition for the mass of the students, and insists that the policy of the University is to resist the moral and physical evils which are developed by intercollegiate sports. The concluding sentences of this section of the report are: "It is always to be put down to the credit of vigorous, out-of-door sports that they tend to deliver young men from sloth, sensuality and luxury. The principal benefit of athletics accrues to the hundreds of students who play wholesome games and take vigorous exercise without ever being heard of in intercollegiate contests."

Following is an interesting discussion of the present standing and probable future place of the A.B. degree. There is a marked tendency toward a substitution of other degrees, chiefly scientific, by men seeking a liberal education. This is merely an expression of the further reaction from a purely classical and literary course in favor of the practical sciences. A matter of much interest and some surprise is the fact that a very small number of students take the courses in "physics," in spite of its intimate association with many varieties of profitable employment later in life.

Among other new subjects which may be offered for admission to the college are anatomy, physiology and hygiene, which we must regard as a distinct step in advance.

Both the Graduate School and the Summer School have flourished, and have completely demonstrated their need and usefulness. The president wishes to see the Medical School "crowned by a graduate department proper, in which a body of experts should be trained for laboratory service, rather than for the ordinary practice of medicine." He further urges what he has before advocated, that the Veterinary School "should be under the direction of a faculty of medicine which should also carry on the three schools which would train medical, dental and veterinary practitioners."

The services of the medical visitor and his assistant have been of distinct value to the University. Better and better means have constantly been provided for the care of sick students, and for the proper investigation and diagnosis of their diseases. The final step in this direction has been taken in the establishment of an infirmary, through a bequest of $50,000 from Mr. James Stillman, of New York City.

The report of the dean of the Medical School is largely statistical, and closes with the present needs of the school. He says: "The great need of the school is an increase of the space devoted to the several laboratories. There is not room enough for the proper accommodation of the regular students of the school, and much additional space is needed for graduate students and for special investigations. The lecture-rooms are also overcrowded. It would seem as if steps should at once be taken with a view to either enlarging the present building, or obtaining a new site, on which a much larger and more commodious structure can be erected."

The volume is a fund of information to those interested in the policy and progress of the University, and contains much food for reflection for those who are studying educational aims and methods.

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THE TREATMENT OF EPILEPSY BY SYMPATHECTOMY.

In a general way it may be affirmed that the hopelessness of a disease is in direct proportion to the number of therapeutic measures advocated for its cure. Judged on this basis alone, essential epilepsy deserves to stand well to the front in the domain of incurability. In pursuance of the numerous theories advanced as to the causation of this disease, the poor degenerate — we use the term advisedly — epileptic has been so thoroughly drenched with drugs by the physician and has so variously fallen under the knife of the surgeon that he has come to be a mere thing of shreds and patches. The altar of the reflex theory alone has received many a votive offering. Here eye muscles have been divided by the ophthalmic surgeon, the septum nasi shorn of its spurs and turned from its devious course by the nose specialist, the ear robbed of its wax and inflated beyond the proper sense of its importance by the aurist, the pelvis divested of uterus and adnexa by the gynecologist, the undescended testicle pounced upon and dragged forth into the unfamiliar light of day by the general surgeon. Nevertheless, of all surgical procedures thus far attempted in pursuit of a theory, that of Alexander is perhaps the most worthy of serious consideration. On the basis of the hypothesis that epileptic crises are the result of acute cerebral anemia brought about by perturbation of the vasomotor mechanism controlling the blood supply to the brain, Alexander published in 1889 a series of twenty-four cases in which by excision of the superior cervical sympathetic ganglion he had sought to overcome the tendency to sudden changes in the blood supply of the brain and thus prevent epileptic seizures. Out of these 24 cases Alexander claimed 25 per cent. of cures from his operation. This claim in itself is somewhat startling, but not nearly so much so as the hypothesis upon which the operation was based. To understand it we must examine into the then existing state of knowledge with regard to cerebral vasomotor nerves. The presence or absence of a vasomotor supply for cerebral vessels has been one of the most interesting moot points among physiologists from time immemorial and attempts to prove its existence experimentally have suffered the most signal failure even at the present time. That the histologic structure of these vessels demanded such a controlling mechanism all observers were more or less disposed to admit, but no positive evidence was forthcoming of their existence until Obersteiner demonstrated them histologically in 1897. Since then Gulland and Morison, of Edinburgh, have corroborated the findings of Obersteiner, but by histologic means only, and the presence of vasomotor nerves on cerebral vessels is now a generally accepted fact. Notwithstanding this, Hill and Bayliss, in a frequently repeated and almost painfully minute series of experiments, in which they stimulated the whole sympathetic supply to the carotids and the whole cranial nerve supply, and in which, moreover, by dividing the spinal cord in the upper dorsal region they reduced the passive effect of the general circulation to the vanishing point, were able to obtain no positive results as far as the effect on cerebral circulation was concerned. Nevertheless, in spite of these somewhat weighty considerations, an operation advocated by so eminent a surgical authority as Alexander was bound to obtain trial at the hands of others, and we since find it practised, with certain modifications, by Baracz, of Lemberg, Kümmel, v. Jaksch, Bogdanik, Jonnesco, Jaboulay and Lannois, and others. The results obtained by the last three mentioned are the most significant. Jonnesco's series comprised 45 cases, in which he chose the operation of complete bilateral resection of the sympathetic. Out of the 45 cases there were 5 deaths, and of the remaining 40 the author gives the final results in only 19. In these 19 he claims 10 cures, 6 notable ameliorations and 3 failures. In the *cured* cases no one had been free from fits for a period longer than two years.

The most recent communication on the subject is that of Jaboulay and Lannois,[1] and the results obtained by them in their series of 16 cases are in startling contrast to those obtained by Jonnesco. In one of the 16 the epilepsy was merely symptomatic, and, as the patient died soon after operation, from grave cerebral disease, the case cannot fairly be counted. Of the remaining 15 only 9 were genuine epileptics and the result of the operation was, in a word, nil, as far as cure was concerned. On the contrary, in certain of the cases the operation was followed by an increase in the frequency and severity of the seizures and in others by psychical manifestations of a more or less permanent and serious character.

In the presence of these markedly contradictory results at the hands of equally good authorities it may perhaps be premature to draw too definite conclusions as to the value of sympathectomy as a remedial measure in genuine epilepsy. Those of Jaboulay and Lannois certainly seem to us more in accord with what we should expect after the experimental researches of Hill and Bayliss. Furthermore, to base a claim for cure, as does Jonnesco, on a two years' respite from attacks appears presumptuous, to say the least, when we take into consideration the natural vagaries of the disease. The operation itself we are not inclined to look upon as the simple procedure that certain of the French surgeons, notably Chipault, would have us believe, and until we have much more striking and convincing proof of its superiority over drug and hygienic treatment we do not predict for it a universal acceptance on the part of neurologists and surgeons.

As we stated at the outset, the epileptic is a degenerate. He is born with a nervous system whose fine adjustment is all askew. In it that perfect harmony which should exist between the excito-motor and inhibitory elements is completely lacking, and the result is that the life of its possessor is harassed by those constantly recurring excito-motor overflows which we term fits. The very innateness of this nervous discord prejudices us — we confess it — against any, or all, operative attempts to restore the harmony; they seem too gross, too inadequate, and we venture to predict that, in spite of the most ingeniously conceived and cunningly contrived operative procedure of the surgeon, the epileptic will continue to manifest by his seizures the dreadful stigma of his degeneracy.

MEDICAL NOTES.

Health of Troops in Cuba. — On January 29th, according to the *Medical News*, it was reported that during three days there had been no deaths among our troops in Cuba. This is considered a remarkable showing.

Fatal Cases of Small-Pox. — Small-pox is raging to quite an extent in Muscogee, I. T., thirty-five persons having died of the disease in the last few weeks. The victims were negroes and Indians.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, February 15, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 45, scarlet fever 16, measles 167, typhoid fever 1.

Opening of the New Surgical Amphitheatre at the Boston City Hospital. — Mayor Quincy and the members of the Boston City Government were the guests of the Trustees of the Boston City Hospital at the formal opening of the new surgical amphitheatre on February 15th. The amphitheatre, which is one of the most perfectly equipped in this country, and certainly the finest belonging to any municipal hospital, has a seating capacity of 200. The construction and equipment have little to be desired in the facilities furnished for modern surgical work. The exercises consisted of speaking by Dr. David W. Cheever, Senior Surgeon; President A. Shuman, of the Board of Trustees, and Mayor Quincy. Dr. Cheever's remarks are published on page 173 of the Journal.

Boston Society of Medical Sciences. — At the meeting held Tuesday evening, February 7th, Dr. R. M. Pearce spoke on the "Pathology, Histology and Bacteriology of Scarlet Fever." He found from an examination of a large number of cases at the Boston City Hospital that autopsy showed a general hyperplasia of lymphoid tissue, that the streptococcus pyogenes was the usual organism found, to be regarded as a secondary invasion, and that histologically there were in the early cases evidences of true inflammatory changes in the tissues. His work threw no light on the etiological factor of the disease. Dr. J. J. Thomas spoke briefly of a "Case of Bone Formation in the Human Brain, due to the Presence of Coccidia Oviformia." The patient had had no brain symptoms; after death a circumscribed area in the brain was discovered, which showed in parts complete ossification, found on further examination to be caused by coccidia oviformia. The formation of bone was to be regarded partly as a secondary process, which has been before described as due to various primary causes. Dr. J. N. Pratt read a paper on "Typhoid Abscesses," which he stated might be multiple, but were usually single; the typhoid bacillus was rarely the sole cause; they were usually due to a mixed infection. Dr. Pratt reported a case from the City Hospital in which the bacillus typhosus was isolated from the abscess. Dr. H. O. Arnold gave the results of his investigation, extending over a number of years, on "The Weight of the Normal Heart in Adults." He had studied cases in which there was no organic disease of the heart, nor of the kidneys and circulatory system. In the final estimates, sex, height, cause of death and other factors were considered. In all, 216 hearts, fairly called normal, were weighed. He found that the heart weight was affected more or less by any general disease, and that there was considerable variation within the limits of health. The average weight of the male heart he found to be 290 grammes; of the female, 260 grammes. Dr. W. L. Strong read by title a paper entitled, "A Study of the Capsule Bacillus."

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[1] Revue de Médecine, Paris, January 10, 1899, pp. 1-18.

NEW YORK.

Death of Kenneth F. Maclennan, M.D. — Dr. Kenneth F. Maclennan died suddenly on January 30th. He was a native of Scotland and fifty-four years of age. He was graduated from the University of Glasgow in 1867, and for several years afterwards served as a surgeon on the Anchor Line of steamships. He had practised in New York for over twenty years.

Mortality Records. — The reports of the Health Department for the month of January show a reduction in the mortality from that of December, the average death-rate of the four weeks ending January 28th being 19.46+, against 20.65+ during the four weeks ending December 31st. The weekly average of deaths from influenza was 63.5, against 61.5 in December, but the mortality from this disease progressively diminished from the beginning of the month. In the week ending January 7th the number of deaths reported from it was 94, and in the week ending January 28th, 45. There was some reduction in the mortality from pneumonia; the weekly average of deaths being 249.25, against 260.75 in December; but there was a corresponding increase in the deaths from phthisis, the weekly average being 172.75, against 162.25 in December. There was a slight increase in the deaths from diphtheria, scarlet fever and measles, the weekly averages being respectively 29.25 (January) –27.75 (December); 11–10.5; and 9.50–6.25. In typhoid fever, on the other hand, the mortality was reduced one-half, the weekly average of deaths being 6.25 for January, and 12 for December. In comparing the mortality in the different boroughs of the city we find a much greater uniformity than was the case in the summer months. The greatest variation is seen in the Borough of Queens. Here during the week ending January 7th the death-rate was 24.12, the highest recorded for the month in any of the boroughs except that of the Bronx, where the mortality is always high on account of the many large institutions located there. In the week ending January 28th, on the other hand, the death-rate was only 15.56, the lowest recorded in any borough during the month.

Death of a Centenarian. — Mrs. Thomas J. Stead, the oldest woman in Somerset County, New Jersey, died on February 8th in North Plainfield, at the age of one hundred and one.

Death of Alvin C. Henderson, M.D. — Dr. Alvin C. Henderson, coroner's physician under Coroner Delap, of Brooklyn, died February 6th in the Long Island College Hospital. Dr. Henderson was born at Cadiz, Ohio, and was fifty years of age. He was graduated from the Medical Department of the University of Michigan in 1872. Later he was graduated from the Long Island Medical College Hospital, and had always practised in the Eastern District of Brooklyn.

Kissing the Book. — Magistrate Pool, of the Board of Police Justices, has set a commendable example in abolishing the ancient custom of "kissing the book" from his court. The Bible used for the purpose of swearing witnesses in such a place as a police court, he holds, becomes nothing less than a breeder of diseases, and it is subjecting people to an unnecessary danger and hardship to compel them to submit to the practice, for which there is no warrant in law.

Death of Rufus W. Peacock, M.D. — Dr. Rufus W. Peacock, of Jersey City, N. J., died on February 6th, at the age of seventy-two. He was born at Goldsborough, N. C., and practised in the South for a number of years. In 1875 he took a post-graduate course at the Medical Department of the University of the City of New York, and since then had resided in Jersey City.

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Miscellany.

MICHIGAN STATE BOARD OF HEALTH AND THE NEXT CENSUS.

At a regular meeting of the Michigan State Board of Health the following preambles and resolutions were unanimously adopted:

Whereas, It is eminently desirable that reliable vital statistics shall be collected by the next United States Census, and

Whereas, The system to be followed should be in accord with the most progressive methods observed in several of the States, the Michigan State Board of Health, at its regular meeting held at Lansing, January 13, 1899,

Resolved, That the Representatives and Senators from Michigan be requested to lend their assistance in securing such correct vital statistics in non-registration States as may be possible;

Resolved, Furthermore, that the appointment of Dr. Cressy L. Wilbur, the present efficient Chief of the Michigan Vital Statistics, be urged as Chief Vital Statistician of the next United States Census.

Attest: FRANK WELLS, *President.*
HENRY B. BAKER, *Secretary.*

LANSING, MICH., January 20, 1899.

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THE OPENING OF THE NEW SURGICAL AMPHITHEATRE AT THE BOSTON CITY HOSPITAL, FEBRUARY 15, 1899.

REMARKS OF DAVID W. CHEEVER, M.D., SENIOR SURGEON.

Gentlemen: — It is now thirty-five years since surgical operations were first done in this hospital. All the night accidents were operated on in a low basement room, beneath Ward B, the other cases, up in the dome of our central building. After about ten years an amphitheatre with wooden floors and fixtures was built, and used some seventeen years. This, becoming unfit from wear and saturation, has been replaced by the structure we are assembled to dedicate to-day.

Now marble, glass and iron have taken the place of wood. But the change means something more than elegance. The expense is justified by the saving of lives and limbs. The new modes of operating and dressing wounds require absolute cleanliness for success, and a cleanliness that can only be assured by glass, marble and steel, where the surfaces of walls and floors and tables have to be constantly cleaned after daily use.

This is one of the best, perhaps the best, municipal hospital in the world. It rivals the most costly, privately-endowed, memorial hospitals in New York. It has grown from 230 beds, in 1864, to 512 beds in 1899. But it is not merely growth, it is improvement. Does it pay?

The surgeon would answer by referring to the changed conditions after compound fractures, for example. Compound fractures are crushed limbs where the bones protrude through the flesh. The triumph in treating compound fractures is to save the limb from amputation. During the first five years of the hospital we averaged twenty-four compound fractures a year; of these, nine were amputated. In 1897 we had increased to sixty-three compound fractures a year; and of these, ten were amputated — a decrease from thirty-seven per cent. to sixteen per cent. of limbs lost.

So, too, of those unfortunates who have to be amputated, the mortality, as compared with early years, has now fallen from fifty per cent. for thigh amputations to twenty-five per cent.; and from twenty-seven per cent. in the leg to twelve per cent. One man in six, of the cases of crushed limbs, now has to lose his leg, instead of one in three; and if his leg is cut off, his chance of recovery is twice as good as it was a few years ago.

I would also cite the enormous number of cases of operations in opening the abdomen for appendicitis, for tumors, and for many causes. If attempted formerly, they died; now most recover.

These improvements and these discoveries in surgery are not ours, nor are they peculiar to any one hospital. But, in order to ensure success in these operations, we must have the best, although costly, antiseptic surroundings. Such we have here to show you to-day. Yet, you will say, are not such operations done safely in private houses, and even in country villages?

They are. But the difference is that a hospital is used over and over again; the same room, the same furniture, the same instruments. Last year they were used for 1,623 operations. Absolute cleanliness, then, must be kept up, and kept up by incessant vigilance in a hospital; and the materials and surroundings must be of the best, for this purpose. Formerly hospitals were often nests of contagion; formerly there was a diseased condition called "Hospitalism"; formerly the chance of recovery was less in a hospital than at home. So people feared hospitals, and justly; and they were reluctant to go to them. Now all is changed. A severe surgical case is safer in the hospital than anywhere else. Popular prejudice is gone. People seek the hospital; and also, I regret to say, abuse its privileges, by claiming and using for nothing what they are sometimes well able to pay for.

The poor laborer, knocked down and crushed, receives here perfect nursing, asepsis, which means life and cure, good surgery, kindness, and abundant food. He commands instantly an intelligent care and skill, which the well-to-do have to wait and seek for, and even the rich sometimes do not attain.

This is true; and it is due to the devotion and skill of unpaid doctors, to the patience and fearlessness of our nurses, to the executive ability of the superintendent of this hospital, to the bounty of our taxpayers, through the City Government, administered by a long succession of honest and careful trustees.

We may build too large hospitals, we may pauperize our people by too free charity, but what we prepare shall be of the best; and our results challenge other institutions, however endowed.

The cost of life and limb may be onerous, but life and limb are beyond price. A still more gratifying instance of the saving of life is afforded in our new South Department for contagious diseases. This is a noble hospital of itself, containing 220 beds. Diphtheria has been actually diminished in this city by Dr. McCollom's labors here, as the public finds it better and safer to take their friends and children to the hospital, thus reducing the contagion in houses and apartments.

Wonderful success has attended the use of antitoxin injections. The average death-rate of all cases of diphtheria for sixteen years was 30.7 per cent. The percentage of deaths from diphtheria in our South Department Hospital has sunk to .14 per cent.; and now to .13 per cent.

The saving of life, the saving of time in sickness, the saving of money in families, do they not justify all these five structures and elaborate machinery, which constitute our City Hospital?

A hospital has other functions than caring for the sick and wounded: it educates and makes doctors; it is a school of the highest grade. Teaching, then, is one of its duties. In this fine ampitheatre much teaching will be done, — still more in the new buildings for pathology, with their laboratories. Here are tested and solved the new problems of germs and antitoxins. To these laboratories every doctor looks for discoveries, new remedies, progress.

Our hospital now equals most in size (732 beds, total), and has five aseptic operating rooms, besides this amphitheatre.

Here in these rooms three great forces of nature, trained to our use, help us in our merciful work: The doing of all painful surgery while the patient sleeps, or ***anesthesia***; the healing of operations, and cuts and crushes, without suppuration, by excluding germs, or ***asepsis***; the illumination of the interior of the flesh, the bones, the visceral organs, or ***electricity***.

> "As life's unending column pours,
> Two marshalled hosts are seen:
> Two armies on the trampled shores
> That death flows black between.
>
> "One marches to the drum-beat's roll,
> The wide-mouthed clarions' bray,
> And bears upon a crimson scroll,
> 'Our glory is to slay.'
>
> "One moves in silence by the streams,
> With sad, yet watchful eyes,
> Calm as the patient planet's gleam
> That walks the clouded skies.
>
> "Along its front no sabres shine,
> No blood-red pennons wave;
> Its banner bears the single line,
> 'Our duty is to save.'"[1]

INFLUENCE OF MILK ON THE SPREAD OF TUBERCULOSIS.

One of the last investigations of the late Professor Kanthack, assisted by V. Sladen, was an investigation of the spread of tuberculosis through milk. Taking the milk as supplied by sixteen dairies to the colleges of Cambridge, it was centrifugalized, and an amount proportionate to the size of the gunea-pig inoculated into that animal. The creamy layer and deposit of each supply were injected into different guinea-pigs, and this was repeated on two successive days. In this way each supply was passed through six animals. At the same time cover-glass preparations were made from the sediments and examined microscopically. In these cocci diplococci and tubercle bacilli were found, but only a few of each. Those animals that, after the lapse of several weeks, showed marked enlargement of the inguinal glands were killed, and the internal organs examined both macroscopically and microscopically. In all, ninety guinea-pigs were inoculated, and twenty-three were found to have tuberculosis, a percentage of 52.55. Of these twenty-three, thirteen had been inoculated with the creamy layer, and ten with the sediment. Of the sixteen dairies examined, the milk of nine caused tuberculosis; in other words, the milk supply of more than half was tainted and capable of spreading tuberculosis. This is a most serious indictment, and the danger to the townspeople is probably greater than that of the undergraduates, as the former class includes hand-fed infants and young children, as well as delicate people and those suffering from acute diseases. It also demonstrates the fact that cream is just as likely to be infected as the sediment. It is worthy of note that four of the animals died within five days, and of three it is noted that there was tense swelling present. Two of these animals were injected with milk from the same dairy, and it would have been of interest to know whether the bacillus enteritidis sporogenes, an organism that flourishes exceedingly in milk, was the cause of death. The superiority of this method of investigating milk for tuberculosis over that of simply examining the sediment with the microscope is evident, as in only three instances were tubercle bacilli found previous to the inoculation. It fails for practical purposes, as the average length of life in those animals that died of tuberculosis was nine weeks, while of those that were killed and found to be tuberculous it was thirteen weeks. It has the merit that there can be no prejudice against it upon the part of the farmers, such as undoubtedly exists against injection of tuberculin. — *British Medical Journal*, June 21, 1899.

LEGISLATION AGAINST DIPLOMA MILLS.

The following bill was introduced into both houses of the Illinois Legislature on February 2d: A Bill for an Act to amend Section 2 of an Act concerning Corporations, approved April 18, 1872, in force July 1, 1872:

Be it enacted by the people of the State of Illinois represented in the General Assembly that Section 2 of an Act concerning Corporations, approved April 18, 1872, in force July 1, 1872, be, and the same is, hereby amended so that the same shall read as follows:

Section 2. Whenever any number of persons, not less than three nor more than seven, shall propose to form a corporation under this act, they shall make a statement to that effect under their hands and duly acknowledged before some officer in the manner provided for the acknowledgments of deeds, setting forth the name of the proposed corporation, the object for which it is to be formed, its capital stock, the number of shares of which such stock shall consist, the location of its principal office and the duration of the corporation, not exceeding, however, ninety-nine years; which statement shall be filed in the office of the Secretary of State. The Secretary of State shall thereupon issue to such persons a license,

And, *Provided further*, That the Secretary of State shall not issue charters to persons, associations or corporations for the purpose of conferring degrees, diplomas or other certificate of qualification in the science of medicine, pharmacy or dentistry unless the application therefor is approved by the State Board of Health, the State Board of Pharmacy or the State Board of Dental Examiners, respectively.

And, *Provided further*, That the Secretary of State is hereby empowered, and it shall be his duty, to revoke charters issued to persons, associations or corporations which authorize such persons, associations or corporations to confer degrees, diplomas or other certificate of qualification in the science of medicine, pharmacy or dentistry, upon the recommendation of the State Board of Health, the State Board of Pharmacy or the State Board of Dental Examiners, respectively; such recommendation to be accompanied by proof that the said persons, associations or corporations are conducting a fraudulent business, or violating the terms of their charter.

And, *Provided further*, That this Act shall apply to schools, colleges or universities which now are or may hereafter be licensed in this State, notwithstanding any provisions that may exist in their charters.

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[1] "The Two Armies," by Oliver Wendell Holmes, M.D.

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Correspondence.

A PESSARY RETAINED FOR FORTY YEARS.

Pleasant Valley, N. Y., February 2, 1899.

Mr. Editor: — The following description and history, which I am confident are true in all respects, seem to me worth preserving, and are almost a record beater.

At the January, 1899, meeting of the Medical Society of the County of ———, Dr. ———, a member of the Society, exhibited a peculiar pessary, with a history. It was a smooth, hollow sphere of wood, but, like the earth, "a little flattened at the poles." Its lateral circumference was 6¼ inches; its vertical, 7½ inches; and its weight 482 grains. It was of one piece of wood, with a cover one inch across. This cover was tongued and grooved on its border, to screw into a corresponding groove and tongue on the border of the opening in the sphere itself. This cover had five perforations, each about one line across and arranged like this ⁑ * ⁑. The surface opposite to this had also five similar perforations. The whole instrument looked like a globular pepper-box. The history is as follows:

It was removed, by the doctor presenting it, in November, 1898, from the vagina of a woman more than seventy years old. For some years she had had an offensive discharge, growing worse, until she had become a nuisance to herself and her friends. Still she was about the house all the time. At length she told another woman what was the matter; and this led to its removal. It was so firmly imbedded the doctor had much difficulty in taking it out. After a few days the discharge ceased, and at the time the doctor exhibited the instrument he said "she was as well as any woman."

This pessary was first applied by a distinguished surgeon, who died in 1863, but who removed from this vicinity in 1858, and did not practise here after this latter date; consequently it had been certainly worn forty years, and perhaps longer. Once only during this long period had it been removed, but was at once replaced. Some years after its application she married, and lived happily with her husband for nearly a quarter of a century. He died without posterity. The cause of his death was not stated. This incident shows how absolutely necessary is the *early* removal of an irritating pessary. Had this one remained in its habitat another forty years a serious, perhaps fatal, sepsis might have developed.

Yours very truly, Veritas, M.D.

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HOUSE FOR EMERGENCY CASES OF INSANITY.

Boston, February 10, 1899.

Mr. Editor: That is what the good hospitals for the insane are. I thought that some one better qualified than I would reply to your editorial on this subject, as Dr. Lane has done. But I am sorry that the other part of your editorial, in which you confound incipient cases of insanity with emergency cases of the same, has not been more fully discussed. I think that alienists would tell us that most incipient cases of insanity are such for some time before they become emergency cases, if they ever do, and require very different treatment. Hence we would expect that a place for the study and care of incipient cases should be very different from that for emergency cases, and probably very few mental cases in their first stages, or their relatives would consent to their being sent to an "emergency house."

Our hospitals for the insane are fully equipped with wards for mild and convalescent cases entirely separate from those that are for the violent and excited — the emergency cases. Medical and public opinion is now sufficiently enlightened to attach no more stigma to diseases of the mind than to diseases of the body.

The recent ungracious attempt to impair the usefulness of the McLean Hospital, by circulating reports that the charges there were so high that few or none could afford them, called forth a just and emphatic protest. The same methods are resorted to for other purposes in the medical profession.

If you ever had to attend an insane patient at his home during the stage of excitement, with inadequate provision for his care, you would be most devoutly thankful to get him safely landed in one of the already existing hospitals that are amply supplied with means of safety and ready at all times to receive such cases.

The last number of the *Archives of Neurology and Psychopathology* (the organ of the State Hospitals for the Insane of New York) devotes much space to the consideration of the need of an Institute for the study of the special symptoms, special pathology and special treatment of incipient cases of insanity, a study that is freely confessed by alienists to be a long ways behind the excellent care that they have learned by experience to bestow on these unfortunate sufferers.

Very truly yours,
Douglas Graham, M.D.

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EARLY REMOVAL OF AN APPENDIX.

8 Monadnock St., Dorchester,
February 6, 1899.

Mr. Editor: The accompanying photograph [not reproduced] represents the true size and condition of a vermiform appendix removed from a patient the same day that the first symptoms developed.

It was inflamed, enlarged, distended with pus, adherent to the contiguous tissues, and about the lower third was a dark purple spot, extending well around the appendix, where in a few hours it would have become gangrenous.

The patient, a woman aged thirty, began to vomit at about 3 a. m. February 2d. The vomiting persisted until daybreak, when intense abdominal pain set in. Seen by Dr. H. V. Reynolds, of Dorchester, during the forenoon, she was still in pain, and vomiting, with marked tenderness over the region of the appendix and a temperature of 102°. I saw her with him in consultation and at 3 p. m. we operated, it being about twelve hours from the beginning of the symptoms to the time of the removal of the appendix. The patient is making a normal convalescence.

In case the photograph and history of this early removal of an appendix are of sufficient interest for publication, you are at liberty to make use of them.

Samuel Crowell, M.D.

METEOROLOGICAL RECORD

For the week ending February 4th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...29	29.94	22	28	16	66	37	52	W.	N.W.	12	12	C.	F.	
M..30	30.06	22	32	12	51	45	48	W.	N.W.	8	10	C.	F.	
T...31	30 06	20	26	14	81	54	68	N.	N.	8	12	O.	O.	
W...1	30.18	17	20	10	75	39	57	N.W.	W.	12	8	C.	O.	.03
T....2	30.24	21	28	14	58	43	50	W.	S.	8	6	F.	O.	
F....3	30.04	27	32	22	87	98	92	E.	E.	4	10	C.	R	.33
S....4	29.90	30	36	23	95	60	78	N.W.	N.W.	8	18	N.	O.	.36
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, February 4, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Typhoid fever.	Whooping-cough.	Diphtheria and croup.
New York	3,438,899	1229	374	8.88	18.56	.40	.80	3.92
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	226	63	9.28	23.32	1.32	.44	1.76
Baltimore	506,389	190	66	9.54	13.25	1.06	1.06	5.30
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	133	46	10.50	16.50	4.50	3.00	.75
Washington	277,000	110	37	10.01	21.84	.91	—	4.55
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	59	17	5.07	40.56	—	—	1.69
Nashville	87,754	40	12	—	17.50	—	—	—
Charleston	65,165	23	5	—	8.70	—	—	—
Worcester	108,240	36	—	12.08	17.12	—	—	5.54
Fall River	95,919	—	—	—	—	—	—	—
Cambridge	89.724	26	6	3.84	15.36	—	3.84	—
Lowell	88,641	33	8	6.06	18.18	—	6.06	—
Lynn	66,703	—	—	—	—	—	—	—
New Bedford	66,340	16	8	6.25	25.00	—	—	6.25
Somerville	61,101	19	4	10.52	42.08	10.52	—	—
Lawrence	57,263	31	12	12.92	19.38	—	—	6.46
Springfield	56,501	18	2	—	13.33	—	—	—
Holyoke	43,424	15	5	26.66	—	6.66	—	—
Brockton	37,278	8	1	—	12.50	—	—	—
Salem	36,883	12	2	—	8.33	—	—	—
Malden	34,613	11	1	—	27.27	—	—	—
Chelsea	33,468	19	1	—	—	—	—	—
Haverhill	32,022	10	3	10.00	10.00	—	10.00	—
Gloucester	30,589	5	0	—	—	—	—	—
Newton	29,716	12	0	8 33	33.33	—	8 33	—
Fitchburg	29,438	13	3	6.79	6.79	—	6.79	—
Taunton	28,167	18	6	—	22.22	—	—	—
Everett	25,338	8	2	—	25.00	—	—	—
Quincy	23,549	7	3	—	71.40	—	—	—
Pittsfield	22,643	—	—	—	—	—	—	—
Waltham	21,812	6	2	—	16.66	—	—	—
North Adams	20,971	5	2	20.00	20.00	—	—	—
Chicopee	17,842	4	0	—	—	—	—	—
Medford	16,511	1	1	—	—	—	—	—
Newburyport	14,915	7	1	—	14.28	—	—	—
Melrose	14,032	5	0	—	—	—	—	—

Deaths reported 2,388; under five years of age 696; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 198, acute lung diseases 462, consumption 320, diphtheria and croup 79, typhoid fever 21, whooping-cough 20, scarlet fever 20, cerebro-spinal meningitis 17, measles 12, diarrheal diseases 12.

From scarlet fever New York 18, Boston and Washington 1 each. From cerebro-spinal meningitis New York 4, Holyoke 3, Boston and Washington 2 each, Baltimore and Worcester 1 each. From measles New York 12, Baltimore, Washington and North Adams 1 each. From erysipelas New York 7, Boston, Pittsburg, Washington, Providence and Clinton 1 each. From diarrheal diseases New York 6, Baltimore, Pittsburg and Lawrence 2 each, Providence and Worcester 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending January 28th, the death-rate was 17.0. Deaths reported 3,716; acute diseases of the respiratory organs (London) 266, whooping-cough 84, diphtheria 71, measles 67, fever 40, scarlet fever 39, diarrhea 28.

The death-rates ranged from 12.9 in Cardiff to 23.8 in Plymouth; Birmingham 16.0, Bradford 17.9, Croydon 13.5, Gateshead 18.1, Hull 16.7, Leeds 16.6, Liverpool 23.3, London 15.2, Manchester 18.5, Newcastle-on-Tyne 16.9, Nottingham 18.1, Salford 16.2, Sheffield 18.3, Sunderland 22.2, West Ham 12.0.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING FEBRUARY 11, 1899.

C. G. Herndon, surgeon, detached from the "Columbia" when put out of commission and ordered home to wait orders.

N. H. Drake, surgeon, detached from the "Minneapolis" when put out of commission and ordered home to wait orders.

J. C. Byrnes, surgeon, detached from the "Puritan" when put out of commission and ordered to continue duty at the Norfolk Navy Yard.

J. Stepp, assistant surgeon, detached from the "Justin" when put out of commission and ordered immediately to the "Independence."

E. M. Blackwell, assistant surgeon, detached from the "Franklin" and ordered to the "Abarenda" immediately.

D. F. Sughrue, assistant surgeon, detached from the "Abarenda" and ordered home.

T. A. Berryhill, passed assistant surgeon, detached from the "New York," and ordered to the "Panther," by steamer of February 15th.

C. E. Riggs, passed assistant surgeon, detached from the "Topeka" and ordered to the "New York" immediately.

F. E. McCullough, assistant surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the "Nero" immediately.

J. Stepp, assistant surgeon, detached from the "Independence" and ordered to the Naval Hospital, Mare Island, Cal., temporarily.

A. R. Wentworth, surgeon, relative rank of lieutenant, from October 9, 1898.

D. F. Sughrue, assistant surgeon, order of February 4th, detaching from the "Abarenda" and ordering home, modified to temporary duty on the "Topeka," and when that vessel arrives at Boston, Mass., detached and ordered home.

C. G. Herndon, surgeon, ordered to temporary duty on the "Richmond."

F. M. Bogan, assistant surgeon, detached from the "Sterling" when put out of commission and ordered to temporary duty on the "Wabash."

The following order was issued from the headquarters of the Army, February 4th: John W. Ross, surgeon, U. S. Navy, retired, having been assigned to duty under the War Department, will proceed from Clarksville, Tenn., to Havana, Cuba, and report in person to the commanding general, division of Cuba, for assignment to duty.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING FEBRUARY 9, 1899.

Purviance, George, surgeon. Granted leave of absence for ten days. February 7, 1899.

White, J. H., surgeon. To represent Service at a conference of health officers to be held at New Orleans, La., February 3, 1899. February 9, 1899.

Guiteras, G. M., passed assistant surgeon. Granted leave of absence for ten days. February 3, 1899.

Rosenau, M. J., passed assistant surgeon. To proceed to New York City for special temporary duty. February 2, 1899.

Comfort, N. C., junior hospital steward. To report to acting assistant surgeon in temporary charge, Cincinnati, O., for duty and assignment to quarters. February 8, 1899.

Davis, Henry E., junior hospital steward. To report to medical officer in command, Boston, Mass., for duty and assignment to quarters. February 8, 1899.

APPOINTMENTS.

R. H. McGinnis, of Florida, to be acting assistant surgeon for duty at the port of Jacksonville, Fla. January 28, 1899.

Newton C. Comfort, of Pennsylvauia, and Henry E. Davis, of Massachusetts, to be junior hospital stewards. February 4, 1899.

SOCIETY NOTICE.

Boston Society for Medical Improvement.— The regular meeting of Monday evening, February 13, 1899, has been postponed to Monday, February 20, 1899.

Arthur K. Stone, M.D., *Secretary*, 657 Boylston St.

RECENT DEATH.

Albert Edward Pick, M.D., M.M.S.S., died in Brockton, February 12, 1899, aged thirty-four years.

BOOKS AND PAMPHLETS RECEIVED.

A Syllabus of Materia Medica. Compiled by Warren Coleman, M.D., Instructor in Clinical Medicine and Materia Medica in Cornell University, Medical Department; Visiting Physician to City (Charity) Hospital; Assistant Visiting Physician to Bellevue Hospital. New York: William Wood & Co. 1899.

Text-Book of Histology, Including the Microscopic Technic. By Dr. Philipp Stöhr, Professor of Anatomy at the University of Würzburg. Second American from eighth German edition. Translated by Emma L. Billstein, Director of the Laboratories of Histology and Embryology, Woman's Medical College of Pennsylvania. Edited with additions by Dr. Alfred Schaper, Demonstrator of Histology and Embryology, Harvard Medical School, Boston, Mass.; formerly Docent of Anatomy and First Assistant at the Anatomical Institute of the University of Zürich. With 292 illustrations. Philadelphia: P. Blakiston, Son & Co. 1898.

Original Articles.

EXPERIMENTS UPON THE GERMICIDAL PROPERTIES OF BLOOD SERUM.*

BY FRANKLIN WARREN WHITE, M.D., BOSTON.

Nuttall,[1] in 1885, demonstrated the fact that the blood serum of animals is germicidal for certain bacteria, and since then a large number of men have conclusively shown that both animal and human serum possesses this property. The importance of this discovery was at once recognized, and this property of the blood has been regarded as one of the chief defences of the human body against the invasion of pathogenic bacteria. Much inaccuracy has arisen, however, in the general conception of this property of the serum from a failure to recognize that the action of human and of animal serum may be very different upon the same bacterium, and, furthermore, that all kinds of bacteria are by no means equally affected by human serum, some being promptly destroyed by it, while others are hardly affected.

In testing the germicidal properties of blood serum it seemed desirable to submit the bacteria to the action of the blood in the living body if possible, but injection of bacteria into the blood of animals with subsequent examinations of their blood proved to be an unsuitable method, for Wyssokowitch [2] and others have shown that bacteria which are injected into the blood-vessels of animals are rapidly filtered out by such organs as the liver and kidneys, and may disappear promptly from the blood stream without reference to any germicidal action of the serum. The usual method, therefore, has been to obtain the blood by cupping, aspiration of a vein, or other means, and, after separation of the serum by simple clotting or by defibrination of the blood, to inoculate it with the bacteria to be tested and determine their fate by making cultures of a small portion of the serum at intervals after inoculation.

Nissen,[3] Buchner [4] and others have given strong experimental evidence that the germicidal substance in blood serum is not a product of chemical changes at the time of clotting, but that the germicidal action of defibrinated blood in tubes outside the body is like that of uncoagulated blood in the vessels. They have shown in experiments with exudates, transudates and blood prevented from clotting by addition of peptone, histon and magnesium sulphate, that uncoagulated blood and uncoagulated body fluids coming from the blood plasma also have germicidal properties. Buchner and Stern [5] have shown that blood serum retains its germicidal power for several days after clotting of the blood.

The source and chemical nature of the germicidal substance in blood, the so-called "alexin," is still an open question. Buchner,[6] Emmerich [7] and many other scientists believe it is a serum-albumin or albuminate, Vaughn [8] considers it a nuclein, and Ogata [9] a ferment. The white corpuscles of the blood seem to be intimately concerned in its production, and the experiments of Hahn,[10] Buchner,[11] Denys and Kaisin,[12] and Van de Velde [13] show that it is a product of the life and metabolic activity of the polynuclear leucocytes, not a result of their death and degeneration. Hankin and Kanthak [14] believe it is derived from the eosinophiles. It has been claimed that by increasing the number of white corpuscles in the blood we can heighten its germicidal power. Hahn produced hyperleucocytosis by injections of nuclein and tuberculin in men and dogs, and claims by this means to have increased the germicidal power of the serum for certain bacteria. Löwit,[15] by ligating the abdominal aorta and lessening the blood supply to the abdominal organs in rabbits, decreased the number of leucocytes in the blood, and thus lowered or removed its germicidal power.

Fodor,[16] Emmerich and Hahn believe that the activity of the "alexin" is dependent upon the degree of alkalinity of the blood, and have endeavored to show by experiment that alkalization of the blood increases its germicidal power.

The changes in the germicidal properties of blood serum which occur during and after an acute infectious process are important, though but little understood at present.

Lubarsh [17] and Szekely and Szana [18] have found that in rabbits the germicidal power of the blood for anthrax bacilli gradually weakens during the course of an infection with these bacilli, and is lost a few hours before death, at a time when the bacilli can be seen microscopically in the blood. A similar change in the blood has also been demonstrated in infections by cholera bacilli and the staphylococcus aureus. Denys and Kaisin found that a dog's blood, which normally showed little or no germicidal action on anthrax bacilli, became strongly germicidal a few hours after infection with these bacilli.

Charrin and Roger [19] increased the germicide power of the blood of rabbits and guinea-pigs for the "rauschbrand" bacilli by vaccinating them for this disease. Armaaskoff [20] found that the blood of horses immunized for diphtheria was much more germicidal than normal for the Klebs-Löffler bacillus. Behring and Nissen [21] found that the serum of normal guinea-pigs does not kill the vibrio Metschnikoff, while the serum of immune guinea-pigs does, also that unsusceptible rats gave a serum more germicidal for anthrax bacilli than other animals. This causal relation between the germicidal power of serum and the immunity of the animal does not hold for all animals or all infectious diseases. In general, a serum which kills one kind of germ does not on that account kill all kinds of bacteria; for example, rat serum, which kills anthrax bacilli freely, does not harm the vibrio Metschnikoff. It appears that the serum of an animal has a definite specific power over certain bacteria, and not that the serum contains an antiseptic substance which injures all bacteria more or less. We have merely touched upon the relations of the germicidal properties of the blood to infection and immunity: a detailed discussion is beyond the scope of this paper.

I. EFFECT OF NORMAL HUMAN BLOOD SERUM ON THE PUS ORGANISMS.

Previous writers have not wholly agreed as to the effect of animal and human serum upon the pus organisms. Schattenfroh,[22] using animal serum, and Nuttall, Stern and Prudden,[23] using human and animal serums, conclude that they are not germicidal for the staphylococcus aureus or streptococcus pyogenes.

On the other hand, Pansini [24] has shown that ascitic and hydrocele fluids have some germicidal action upon the streptococcus pyogenes, and Rovighi,[25] using human serum, claims to have demonstrated a germicide action upon the staphylococcus aureus and pneumococcus, which is, however, moderate and transitory compared to the action of the same serum upon typhoid bacilli. Flexner[26] found that two out of seven specimens of normal human blood serum (including four specimens of blood from obstetrical cases) showed marked destructive power upon the staphylococcus aureus, and three out of nine serums from cases of chronic disease had a similar effect. He concludes from his experiments that normal human serum possesses distinct germicidal properties for the staphylococcus aureus, and that this power is diminished in some cases of chronic disease, and offers to explain the predisposition to bacterial infection in chronic disease by a lessened germicidal power of the blood serum.

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* From the Pathological Laboratory of the Massachusetts General Hospital.

In our own experiments, before seeking to determine what modifying influence cachexia and chronic diseases might have upon the germicidal properties of the blood, we first studied the action of normal human serum upon the pus organisms. We have chosen the pus organisms for these experiments because they are the bacteria which are most commonly concerned in the production of general septicemia, and of secondary and terminal infections in chronic disease, and it therefore seems most natural to expose them to the action of the serum, and because the disagreement of previous results with human and animal serum seems to make further experiments desirable. Incidentally in a few instances the serum has been tried on typhoid bacilli for contrast. It was not deemed practicable to work with pneumococci owing to the delicacy of their growth on plated media.

The blood was obtained from patients in the wards of the Massachusetts General Hospital who were admitted for some slight non-infectious ailment, from which they speedily recovered, the blood being taken when they were in a healthy condition just before discharge from the hospital; a few specimens of blood were furnished by healthy young women in the Boston Lying-in Hospital.

The method of obtaining the serum was as follows: In the obstetrical cases 20 or 30 cubic centimetres of the blood flowing from the uterus after delivery was collected in a sterile flask under aseptic precautions, and was allowed to stand in a cool place till the serum separated. In the other cases 5 or 10 cubic centimetres of blood was aspirated from one of the large superficial veins about the elbow with a sterile glass syringe (an ordinary glass antitoxin syringe was used) after carefully cleansing the skin with soap and water and ether. To facilitate the aspiration, a bandage was usually tied about the arm above the elbow to distend the veins, and an ethyl chloride spray was used to anesthetize the seat of puncture. In this way the aspiration was accomplished with very slight discomfort to the patient. The blood was kept in sterile test-tubes, and occasionally, to hasten the separation of clot and serum, a sterile platinum wire was passed around the clot to keep it from sticking to the walls of the tube. After a period varying from two to twenty-four hours the clear straw-colored serum was pipetted off into other test-tubes, two cubic centimetres being the standard amount used in each experiment. Although Buchner and Stern have conclusively shown that blood serum does not lose its germicidal properties in any appreciable degree for from six to eight days after the clotting of the blood, we have always tried to use as fresh serum as possible to avoid any error.

The method of testing the serum was the usual one of making a suspension of a fresh agar culture of the fresh virulent bacterium in physiological salt solution, and inoculating the serum with a small amount of this suspension. The inoculated serum was kept at body temperature in a thermostat, and a small definite amount (a platinum loopful) was plated on agar,* immediately after inoculation, and two, six, and twenty-four hours after. The agar plates were usually made in duplicate to avoid error, and were kept in the thermostat forty-eight hours before counting. The same platinum loop was used throughout the whole series of experiments. In several experiments serum warmed to 55° C., and thus deprived of its germicidal power, was used for control. As the germicidal action of blood serum is to a certain extent dependent upon the number of bacteria present in a certain amount of serum, we have endeavored to inoculate our serum with a (comparatively) small rather than a large number of germs, so that the action of the serum might be clearly evident, and also have tried to vary the number of bacteria inoculated in different experiments.

Table I gives our results, the kind of bacteria tested, the number of hours the blood stood in the flask or test-tube before the serum was used, and the number of bacteria (per platinum loopful) in the serum immediately after inoculation and at intervals of two, six, and twenty-four hours later. The double line of figures seen in all but a few cases represents duplicate plates. The first eight serums are from obstetrical cases, the rest from patients at the Massachusetts General Hospital.

In looking at the results, we see in the seventeen cases where serum was inoculated with the staphylococcus aureus, that with the exception of one case (No. 3) there has been no evidence of any germicidal action, but, on the contrary, there has been a progressive growth of the cocci varying somewhat in rapidity in different cases, and the blood serum has caused at most only a temporary delay in their growth. In the cases where a portion of the serum was heated to 55° C. before inoculation (thus removing the possibility of germicide action) the rate of growth of the cocci was almost identical with that in the unheated specimens.

The action of two serums was tried upon typhoid bacilli for purposes of control, and the prompt, complete germicidal action upon these bacteria is in sharp contrast to the lack of influence upon the pyogenic organisms.

There is no appreciable difference between the action of blood from obstetrical cases and that from other individuals.

In the six cases where serum was inoculated with the streptococcus pyogenes there was no evidence of any germicidal action, but likewise a progressive growth of cocci in the serum, a growth which, in comparison with staphylococcus aureus, begins earlier and reaches its maximum earlier, usually within the first twenty-four hours. In five of the cases a specimen of serum was heated to 55° C. and then inoculated. The growth of the cocci in these heated serums forms an accurate parallel in every case to their growth in the unheated specimens. The rate of growth in the different serums varies somewhat.

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* In experiments with streptococci serum agar plates were used, made by adding 2 cubic centimetres of sterile blood serum (previously warmed to 55° C. for a half hour) to the 10 cubic centimetres of melted agar before plating. This medium gave a much more clear and distinct growth of colonies on the plate than plain agar, thus facilitating the counting process.

Previous experiments "in vitro" have shown conclusively that human blood serum is germicidal for various bacteria, such as anthrax, typhoid, colon and cholera bacilli, and many others, and it has been concluded that one of the chief defences of the body against the invasion of pathogenic bacteria lay in these germicidal properties of the blood and body fluids. Our similar experiments "in vitro" have shown that normal human serum possesses little or no germicidal power over pus organisms. One thing is very sure, namely, that we can make no sweeping statements about the action of human serum upon bacteria in general, but must remember that certain germs are promptly destroyed, while others are scarcely hindered in their growth.

TABLE I.

Case.	Bacteria tested.	Blood stood hours before using.	No. of bacteria at start.	After 2 hours.	After 6 hours.	After 24 to 48 hours.
1	Typhoid bacillus.	24	2,160	18	0	0
	Staphylococcus aureus.	24	2,784	2,752	9,630	∞
	Streptococcus pyogenes.	24	99	1,080	....	∞
2	Typhoid bacillus.	10	284	240	0	0
	" "	34	1,450	600	... .	0
3	Staphylococcus aureus.	12	1,376	616	970	∞
4	" "	24	2,784	2,752	9,630	∞
5	" "	5	2,176	2,320	8,320	24,800
			2,976	3,056	6,320	....
6	" "	16	3,584	3,553	7,792	∞
			2,784	3,456	7,056	∞
	Staphylococcus aureus (heated serum).	16	4,448	5,184	5,616	∞
			4,220	5.808	6,240	∞
7	Staphylococcus aureus.	24	3,468	3,616	17,200	∞
			3,292	2.960	17,200	∞
8	" "	24	3,184	3,264	20,448	30.500
			2.608	2,464	24.560	37,130
9	" "	3	60	124	260	23,300
			53	120	284	25,200
10	" "	3	58	96	332	37,800
			60	108	300	40,400
11	" "	16	1,968	3,324	2,976	6,006
			2,528	3,340	3,520	7,050
12	" "	16	844	1,616	2,448	5.958
			736	1.776	2,588	6,000
13	" "	16	3,612	3,056	6,320	....
			3,936	4,122	7,840	....
14	" "	3	2,592	2,304	5,840	13,696
			2,160	2,256	5,328	14,928
15	" "	3	1,216	1,296	14,160	32,160
			1,200	1,312	13,200	28,600
16	" "	3	1.572	1,344	15,320	....
			1,744	1,664	13,382	92,160
17	" "	24	2,880	3,200	13,600	19,040
			2,896	3,696	14,080	24,960
18	" "	20	2,368	1,648	6,048	13,776
			3,088	3,008	6,512	15.696
19	Streptococcus pyogenes.	12	5.370	....	20,250	3,525
			5,560	....	25,050	4,185
	Streptococcus pyogenes (heated serum).	12	3,965	....	28,000	2,700
20	Streptococcus pyogenes.	12	3,850	....	20,550	5,340
			4,050	....	19,035	4,350
	Streptococcus pyogenes (heated serum).	12	5,385	....	14,175	465

Case.	Bacteria Tested.	Blood stood hours before using.	No. of Bacteria at start.	After 2 Hours.	After 6 Hours.	After 24 Hours.	After 48 Hours.
21	Streptococcus pyogenes.	12	1,290	....	8,325	5,625	2,535
			....	....	7,800	5,745	2,400
	Streptococcus pyogenes (heated serum).	12	1,350	....	4.175	....	3,435
22	Streptococcus pyogenes.	12	1,275	....	12,870	23,350	1,200
			1,530	...	13.350	21,915	1,500
	Streptococcus pyogenes (heated serum).	12	2,380	....	11,835	21.395	6,225
23	Streptococcus pyogenes.	12	1,410	....	5,505	1,320	1,500
			1,350	....	5,325	1,170	1,875
	Streptococcus pyogenes (heated serum).	12	1,065	....	9,905	1.620	1,245

II. EFFECT OF HUMAN BLOOD SERUM FROM CASES OF CHRONIC DISEASE ON TYPHOID AND COLON BACILLI.

We know that chronic disease plays an important part in determining susceptibility to bacterial infection, and it seems possible that a modification in the quality of the blood and tissue fluids in individuals with chronic disease may be one of the important factors in producing this increased susceptibility. The following experiments were made to determine whether the blood of cachectic individuals in a condition presumably predisposing them to infection would show a diminished germicidal power for certain bacteria. The colon and typhoid bacilli were chosen for the experiments as being common bacteria which are promptly destroyed by normal blood.

TABLE II.

Case.	Disease.	Bacterium tested.	Blood stood hours before using.	Bacteria at start.	After 2 hours.	After 6 hours.	After 24 hours.
1	Chronic rheumatism.	Typhoid bacillus.	14	90	42	1	0
	" "	Colon bacillus.	14	36	21	0	0
	Chronic rheumatism (heated serum).	Typhoid bacillus.	14	31	..	45	∞
2	Aortic and mitral disease.	" "	2	320	84	1	0
	Aortic and mitral disease (heated serum).	" "	2	484	..	672	∞
3	Sarcoma.	" "	20	865	2	0	0
				1,125	8	0	0
	"	Colon bacillus.	20	825	300	0	2
				855	480	3	0
4	Aortic and mitral disease.	Typhoid bacillus.	18	1,200	15	6	0
				1,215	16	0	0
	Aortic and mitral disease.	Colon bacillus.	18	2.040	1,395	12	3
				2,250	1,575	10	0
5	Arterio-sclerosis.	Typhoid bacillus.	18	1,260	3	1	0
				1,350	3	2	0
	" "	Colon bacillus.	18	1,815	1,335	25	2
				1,965	1,335	26	2
6	Pernicious anemia.	Typhoid bacillus.	18	3,400	40	6	0
				3,300	20	2	4
	" "	Colon bacillus.	18	3,000	1,950	67	3
				2,870	1,500	74	8
7	Gastric cancer.	Typhoid bacillus.	18	1,050	8	5	0
				1,230	15	3	0
	" "	Colon bacillus.	18	2,100	780	4	6
				2,300	840	..	10
8	Abdominal sarcoma.	Typhoid bacillus.	18	2,000	15	5	0
				2.400	5	5	0
	" "	Colon bacillus.	18	1,560	672	2	0
				1,800	700	.	2
9	Chronic nephritis.	Typhoid bacillus.	18	3,920	20	5	0
				4,100	22	2	5
	" "	Colon bacillus.	18	2,800	480	5	1
				3,200	525	2	0
10	Tubercular peritonitis.	Typhoid bacillus.	18	1,920	25	6	5
				1,870	..	4	3
	Tubercular peritonitis.	Colon bacillus.	18	1,620	810	6	6
				1,320	735	4	4

The patients were from the wards of the Massachusetts General Hospital, and comprise cases of grave cachexia, such as pernicious anemia, chronic heart and kidney disease, abdominal cancer, sarcoma, etc. The method previously described was used to obtain and test the serum. In several cases a specimen of serum was heated and inoculated for control. A brief description of the cases follows:

(1) Chronic rheumatism of four years' standing.

(2) Aortic and mitral disease of several years'

standing, dyspnea, orthopnea, edema of legs, delirious at times.

(3) Lymphosarcoma of neck, too extensive for operation, duration eleven months.

(4) Mitral disease, duration several years; dyspnea, edema of legs.

(5) Arterio-sclerosis, myocarditis, dyspnea, edema of legs, vomiting, delirious at times.

(6) Pernicious anemia, typical case; red corpuscles 1,090,000; hemoglobin 25 per cent.; died one month later.

(7) Cancer of stomach; pale, thin; gastric pain and tumor, hematemesis.

(8) Recurrent sarcoma of abdominal wall; operated upon five times; sloughing; died four months later.

(9) Chronic parenchymatous nephritis of several years' duration; pale, poor pulse, vomiting, headaches, edema of legs, ascites; died one month later.

(10) Tubercular peritonitis, typical case; thin, pale, cachectic.

The results are given in Table II.

In looking over the results we see that in each case of chronic disease and cachexia the blood serum was still actively germicidal to the typhoid and colon bacilli, and about equally so in the different cases, and that variation in number of the inoculated germs within the limits used did not influence the result. If any diminution in germicide power of the serum occurred in these cases the bacteria were too susceptible to show it. The two samples of serum which were heated before inoculation (to destroy the germicidal substance) form a sharp contrast to the other serums. The figures show that the typhoid bacilli were somewhat more rapidly destroyed than the colon bacilli.

We have no desire to make too wide an application of the results of experiments with serum "in vitro," but it seems to us that the fact which is so clearly shown, namely, that human serum is very destructive to colon bacilli, and has very little effect upon pus cocci, may afford an explanation of the relatively frequent finding of pus organisms in the blood during life in cases of septicemia, pyemia, endocarditis, tuberculosis, etc., and the comparative rarity of finding either colon or typhoid bacilli in living blood in intestinal or other disease. In short, of the bacteria which we have tested, the ones commonly found in the blood in disease are just the ones we should expect to find there, considering the properties of the blood serum.

III. CHANGES IN HUMAN BLOOD SERUM OCCURRING NEAR THE TIME OF DEATH.

It is a well-known fact that normal human blood serum destroys the colon bacillus, and it has been sufficiently proved that this germicidal property of the serum is retained in severe cases of chronic disease. We also know that the colon bacillus is frequently found in living active condition in the blood and organs at autopsies in all kinds of acute and chronic diseases. From these facts it is evident that at some period in the course of fatal disease, either at the latter end of life, during the death agony, or after death, the germicide power of the blood serum for the colon bacillus must be lost. An attempt was made to find out the exact time when this change in the properties of the serum occurs, by testing samples of blood taken shortly before and after death in a mixed class of cases, with the hope of throwing some light on the question of agonal and post-mortem invasions of the body by colon bacilli and other bacteria.

The cases, nineteen in number and all of them fatal, comprise various chronic diseases, such as pernicious anemia, nephritis, cancer, cystitis and myocarditis, various septic affections, also several miscellaneous cases, such as cerebro-spinal meningitis, acute pancreatitis, skull and rib fractures, etc.* The blood was obtained before death by the aspiration method previously described, and after death by aspiration of the heart, with a needle thrust through the fourth intercostal space close to the sternum under careful aseptic precautions. Blood was taken from the cadaver up to three or four hours after death; after this time the blood remaining in the vessels usually lost its power of clotting and changed to a dark, grumous, putrescible fluid unsuitable for our experiments. As a rule, the serum in these cases was used for experiment as soon after aspiration as possible, that is, as soon as the separation of serum from clot was fairly complete, which usually occurred in two to two and one-half hours. The method of testing the action of these serums upon the colon bacillus was the one used in the previous experiments. In a few cases the serum was also tried upon typhoid bacilli. Blood cultures were made in all these cases with a portion (three to five cubic centimetres) of the blood obtained by aspiration. An autopsy was performed in one-half of the cases.

The following is a brief description of the cases:

(1) *Orchidectomy; Sepsis.* — Male, age sixty-seven. Enlarged prostate, and cystitis fifteen years; orchidectomy, sepsis of wound; death one week after operation. Blood cultures, three hours after death, sterile.

(2) *Suppurative Nephritis.* — Male, age forty-five. Septic process four weeks. Temperature 103°, pulse 130, delirious, no chills. Blood culture, one and one-half days before death; staphylococcus pyogenes aureus. Autopsy, fifty-eight hours after death; heart, liver, spleen and kidney contained staphylococcus pyogenes aureus.

(3) *Pernicious Anemia.* — Female, age sixty-six; typical case. Red corpuscles, 1,090,000; hemoglobin 25 per cent. Blood cultures, two days before and one-half hour after death, sterile. Autopsy, one and one-half hours after death; heart and spleen sterile. Liver and kidney each one colony of staphylococcus pyogenes aureus.

(4) *Acute Hemorrhagic Pancreatitis.* — Male, age forty-nine. Duration one week. Laparotomy; death three days after operation. Blood cultures, eleven hours before and six hours after death, sterile. Autopsy, six hours after death; heart, liver, spleen and kidney sterile, kidney and peritoneum, bacillus coli.

(5) *Gastric Cancer.* — Female, age twenty. Gastric symptoms one year. Gastric pain and tumor. Blood cultures, eight hours before and one-half hour after death, sterile.

(6) *Skull Fracture.* — Male, age forty. Compound depressed fracture. Operation; death six hours later. Blood culture, one-half hour after death; streptococcus pyogenes.

(7) *Nephritis; Pneumonia.* — Male, age fifty-one. Chronic diffuse nephritis, lobar pneumonia, eleven

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* This series of cases would have been longer had it not been for the practical difficulty of getting sufficient blood for serum tests from moribund patients, and the difficulty a non-resident has in being present in the hospital at the best time before or after death for obtaining blood.

days' duration. Autopsy, twenty-one hours after death; heart and spleen sterile, kidney and liver, bacillus coli.

(8) *Fracture of Ribs.* — Male, age sixty. Alcoholic, emphysema of back; no pleural effusion; death twelve hours after accident. Blood culture, three and one-half hours after death, sterile.

(9) *Cerebro-spinal Meningitis.* — Male, age thirty-one. Duration six days. Temperature 103°, pulse 130. Delirium, coma. Blood cultures, two and one-quarter hours before and two hours after death, sterile. Autopsy, three hours after death; heart, liver, spleen and kidney, unidentified bacteria. No bacillus coli.

(10) *Appendicitis.* — Male, age fourteen. Operation; appendix gangrenous, general peritonitis. Blood culture, one-half hour after death, sterile.

(11) *Cerebro-spinal Meningitis.* — Female, age thirty-five. Duration five days. Temperature 104°, pulse 130. Blood cultures, four hours before, one-half hour after, and two and one-half hours after death, sterile.

(12) *Uterine Fibroid.* — Female, age forty-eight. Fibroid for two years. Hysterectomy. Died three days after operation; no sepsis. Blood cultures, ten hours before and one and one-half hours after death, sterile.

(13) *Septic Arm.* — Male, age sixty. Septic cut on arm. General infection. Temperature 104°, pulse 125. Blood cultures, one and one-quarter days before death; streptococcus pyogenes.

(14) *Cancer of Sigmoid; Erysipelas.* — Male, age fifty-nine. Acute intestinal obstruction from cancer of sigmoid, laparotomy, facial erysipelas; death four days later. Blood cultures, two days before death; streptococcus pyogenes.

(15) *Myocarditis.* — Male, age forty-three. Irregular pulse, dyspnea, edema of ankles. Blood culture, three-quarters hour after death, sterile.

(16) *Cancer of Epiglottis.* — Male, age sixty-five. Laryngectomy; death ten hours after operation. Blood culture, three-quarters hour after death; streptococcus pyogenes.

(17) *Enterocolitis.* — Male, age nineteen. Intestinal hemorrhages. Duration one week. Blood culture, four hours after death, sterile. Autopsy, five hours after death; heart, liver and spleen sterile, kidney, unidentified bacteria.

(18) *Phlegmon of Leg.* — Male, age forty-five. Septic wound; duration one week. Temperature 104° pulse 130. Blood cultures, one day before and one day after death, sterile. Autopsy, six hours after death; heart and kidney sterile, liver, staphylococcus pyogenes aureus.

(19) *Tubercular Peritonitis.* — Female, age thirty-five. Duration eight months. Laparotomy; death two and one-half months later. Blood culture, one hour after death, sterile. Autopsy, ten hours after death; heart sterile, spleen and kidney, bacillus coli.

Table III shows the results; no attempt has been made to classify the cases as acute or chronic, septic or non-septic.

On looking over our results we see that the three specimens of serum (one obtained before death and two after death) which were inoculated with typhoid bacilli possessed strong germicidal properties for these bacilli. The twenty-six specimens of serum inoculated with colon bacilli differ greatly in their germicidal power for the latter bacilli. All the serums obtained before death, namely, ten specimens from ten cases (Nos. 2, 3, 4, 5, 9, 11, 12, 13, 14 and 15), showed germicidal power for the colon bacillus, but in two cases (Nos. 13 and 14) it was very much weakened. In about one-third of the cases, namely, in seven specimens of serum from six cases (Nos. 3, 4, 6, 7, 12 and 13), the serum obtained shortly after death was found to have lost its germicidal power. In two of these cases (Nos. 6 and 13), while the serum was not actively germicidal, it appears to have delayed the growth of bacilli. In about one-half the cases, namely, in eleven specimens of serum from nine cases (Nos. 5, 8, 9, 10, 11, 15, 16, 17 and 19), the blood serum retained more or less germicidal power after death, even up to three and one-half and four hours in several cases. The difference in number of bacteria inoculated in different experiments has had no perceptible influence on the results.

TABLE III.

Case.	Disease.	Bacterium tested.	Time serum was obtained.	Bacteria at start.	After 2 hours.	After 6 hours.	After 24 hours.
1	Orchidectomy, sepsis.	Typhoid B.	3 hours p. m.*	830	0	0	0
2	Suppurative nephritis.	"	1½ days a. m.	1,810	6	0	0
3	Pernicious anemia.	"	½ hour p. m.	650	120	7	0
				720	130	15	0
		"	"	62	19	1	1
				70	21	0	2
		Colon B.	"	2,325	3,825	∞	∞
				2,431	3,455	∞	∞
		"	"	705	525	∞	∞
				795	558	∞	∞
		"	2 days a. m.	2,600	....	41	2
				2,580	....	16	0
4	Acute hemorrh. pancreatitis.	"	11 hours a. m.	960	870	1	0
				840	745	0	0
		"	6 hours p. m.	1,080	1,125	∞	∞
				1,200	1,440	∞	∞
5	Gastric cancer.	"	8 hours a. m.	1,020	110	2	0
				1,150	98	2	1
		"	½ hour p. m.	915	1,050	1	0
				1,125	1,025	2	1
6	Skull fracture.	"	"	4,110	4,125	4,180	∞
				4,185	4,217	3,310	∞
		"	4½ hours p. m.	3,420	3,970	∞	∞
				3,150	3,240	∞	∞
7	Nephritis; pneumonia.	"	1½ hours p. m.	2,470	....	7,500	∞
				2,370	....	7,100	∞
8	Fracture of ribs.	"	3½ hours p. m.	1,695	....	110	∞
				1,720	....	120	∞
9	Cerebro-spinal meningitis.	"	2¼ hours a. m.	5,040	...	48	0
				5,175	...	60	1
		"	15 mins. p. m.	5,265	....	192	1
				4,905	....	208	0
		"	2¼ hours p. m.	4,575	....	80	300
				4,320	....	55	250
10	Appendicitis.	"	½ hour p. m.	3,420	....	45	65
				3,310	...	46	38
		"	3½ hours p. m.	4,775	....	27	80
				4,445	....	30	40
11	Cerebro-spinal meningitis.	"	4 hours a. m.	1,395	....	3	0
				1,440	....	10	0
		"	½ hour p. m.	2,715	....	416	0
				2,640	....	420	1
12	Uterine fibroid.	"	10 hours a. m.	1,240	....	110	2
				1,180	....	90	0
		"	1½ hours p. m.	1,860	....	2,970	∞
				1,835	....	2,880	∞
13	Septic arm.	"	1¼ days a. m.	3,570	....	1,770	∞
				3,855	....	2,250	∞
		"	½ hour p. m.	8,760	....	7,200	∞
				8,715	....	6,285	∞
14	Cancer of sigmoid. Erysip.	"	2½ days a. m.	8,550	....	825	1605
				9,600	....	780	2010
15	Myocarditis.	"	¾ hour p. m.	6,000	....	2,700	450
				6,100	...	2,400	480
16	Cancer of epiglottis.	"	"	9,760	...	615	∞
				8,550	....	660	∞
17	Enterocolitis.	"	4 hours p. m.	7,600	....	3,200	∞
				7,200	....	3,700	∞
18	Phlegmon of leg.	"	12 hours a. m.	4,950	....	184	64
				5,175	....	176	140
19	Tubercular peritonitis.	"	1 hour p. m.	1,800	....	132	4
				1,635	....	136	3

* a. m. and p. m. = ante mortem and post mortem.

In seven cases the blood of the same patient was tested both before and after death. In three cases (Nos. 3, 4 and 12) the blood was markedly germicidal ante mortem, and not germicidal post mortem. In one case (No. 13) the blood was slightly germicidal before death, and not germicidal after death. In three cases (Nos. 5, 9 and 11) the blood was germicidal both before and after death, though the action of the serum obtained after death was somewhat less prompt.

We should expect the presence or absence of germicidal power in the blood serum to strongly influence the occurrence of agonal or post-mortem invasion of the body by colon bacilli. The report of the autopsies which were performed in seven of our cases bears out this theory. In four cases (Nos. 3, 9, 17 and 18) in which the blood serum was germicidal (two before death, two after death) no colon bacilli were found in the organs at autopsy. In two cases (Nos. 4 and 7) whose blood examined shortly after death was not germicidal colon bacilli were found in some of the organs at autopsy. In one case (No. 19) whose blood was germicidal one hour after death colon bacilli were found in the spleen and liver at autopsy ten hours after death; this may perhaps be explained by post-mortem growth outward from the intestine.

We have spoken of the specific action of human blood serum upon separate varieties of bacteria. Case 3 shows how different the effect of the serum may be on two varieties as closely allied as colon and typhoid bacilli. The serum obtained one-half hour after death promptly destroyed the typhoid bacilli, while the colon bacilli grew rapidly in it.

It is interesting to note that in those cases in which pus organisms were found in the blood before or after death (Nos. 6, 13, 14, 16) the blood was either not germicidal for the colon bacillus or rather weakly so.

We began our series of experiments upon blood serum with the object of finding out whether the blood of cachectic individuals in a condition presumably predisposing them to infection would show a diminished germicidal power for certain bacteria, and studied first the action of serum from healthy individuals upon the pus organisms as a basis for comparison. Our experiments indicated that normal human serum was not actively germicidal for pus organisms, so we could not expect to demonstrate any contrast between health and cachexia in this regard. We next turned our attention to the action of cachectic serum upon some bacteria which are promptly destroyed by normal serum, namely, typhoid and colon bacilli, and found that they were also quickly killed by serum from cases of the gravest cachexia. We have finally tried to discover some change in the germicidal power of blood serum occurring near the time of death, and have succeeded in demonstrating it.

In two of our cases weakening of the germicidal properties of the serum occurred shortly before death, and in others the blood showed an absolute loss of germicidal power promptly after death (which probably means that in these cases also there was some weakening just before death occurred), and in other cases the germicidal power of the blood was retained for several hours post mortem. We cannot connect these facts with the course of disease in the individual, but they undoubtedly have an important bearing on agonal and post-mortem invasion of the body. In some cases the germicidal properties of the blood are weakened or lost in the last hours of life, general bacterial invasion of the body is undoubtedly favored, bacteria enter the blood stream, are scattered about to the organs, and are found at autopsy even when the latter is performed within a few hours after death. In many other cases, however, the blood retains its germicidal properties till after death, general invasion of the body is prevented or hindered, and colon bacilli only reach the organs by post-mortem outgrowth from the bowel.

The question of the frequency of agonal invasion will be discussed by the author in another paper and will be only briefly referred to here. We know how often sterile organs are found at autopsies — Lesage and Macaigne,[31] Beco, Austerlitz and Landsteiner,[32] remark upon this fact — and the infrequency of finding the colon bacillus at fresh autopsies. Austerlitz and Landsteiner, repeating the experiments of Chvostek and Wurtz,[33] killed small animals slowly by freezing and demonstrated the absence of any general agonal invasion by means of cultures of the organs. In our own experience the small number of the cases in which bacteria were found in the blood post mortem, and the fact that in our experiments with blood serum its germicidal properties for the colon bacillus were retained till hours after death in half the cases, lead us to believe that agonal invasion is not a general, or very common, occurrence, and that the presence of the colon bacillus (and perhaps also of certain other bacteria) in the organs at autopsies performed eight or ten or more hours after death is commonly due to a post-mortem invasion of the cadaver from the intestine.

We will summarize our conclusions as follows:—

(1) Human blood serum differs greatly in its germicidal action upon various kinds of bacteria.

(2) Our experiments indicate that normal human blood serum is not actively germicidal for the staphylococcus pyogenes aureus or the streptococcus pyogenes.

(3) Human blood serum does not lose its germicidal power for typhoid and colon bacilli, even in the late stages of chronic wasting disease.

(4) Human blood serum in fatal disease occasionally loses part of its germicidal power for the colon bacillus shortly before death, but more frequently retains the germicidal power for this bacillus for several hours after death.

(5) A weakening of germicidal power of the blood serum shortly before death undoubtedly favors an agonal invasion of the body by the colon bacillus.

In closing I wish to express my thanks to the Visiting and House Staff of the Massachusetts General and Boston Lying-in-Hospitals for their ready coöperation, and to Dr. J. H. Wright, Director of the Pathological Laboratory of the Massachusetts General Hospital, for his kind assistance in my work.

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OPERATION FOR PERFORATED GASTRIC ULCER; PERFORATION NOT FOUND; DRAINAGE; RECOVERY.

BY FRANK M. SHERMAN, M.D., WEST NEWTON, MASS.

S. D., twenty four years of age, nursery maid, had been treated eleven years ago for pain in epigastrium and "sour stomach," and got better, but has had more or less stomach trouble ever since. For several years past has had much pain, frequent vomiting, hyperchlorhydria, and eructations of gas. There is a vague history also of several attacks of localized peritonitis.

In February, 1897, began to vomit blood, and since then has had frequent hematemesis in addition to the other symptoms. The diagnosis of gastric ulcer had been made, and a careful diet and medical treatment instituted. The only relief from her pain was obtained from bicarbonate of soda and from drinking fluids. For some weeks there had been improvement in her symptoms, when on July 8, 1898, at 11.30 P. M., five hours after taking food (which was mostly milk), and while lying in bed, she had an attack of nausea and vomiting, and while vomiting was seized with a sudden, sharp pain in the epigastrium and left hypochondrium, and in the left side of the neck and left shoulder. This was followed by swelling of the abdomen, a gradually increasing pulse rate, and a general appearance of shock. Soon after the first pain she was given morphine in a peppermint solution, and again vomited. She afterward at intervals received several doses of morphine hypodermatically.

Dr. W. B. Lancaster, in whose family the patient was employed at Wonalancet, N. H., quickly recognized the symptoms of perforation, and asked me, by telephone, to see the patient and to come prepared to operate. I reached the patient, after a journey of one hundred and fifty miles, about 4 P. M. July 9th. She was lying on her back; her face was anxious; abdomen swollen and tympanitic; liver dulness much diminished. Was having considerable pain, and there was marked tenderness in the left hypochondrium. Pulse 160; temperature 101.5°.

It was decided to operate at once, in the hope of finding and closing the perforation. The difficulties of preparation in a country house were easily overcome and at about five o'clock Dr. Remick, of Tamworth, administering ether, and Dr. Lancaster assisting, a curved incision was made just below and along the margin of the ribs on the left side. Tissues edematous as the peritoneum was approached; a gush of gas and turbid fluid on opening the abdomen. Stomach was attached to abdominal wall by recent adhesions, which were easily separated, and the abdominal opening lengthened to about four and a half inches. Stomach was brought into the wound. There were patches of thick lymph on the lower portion of the anterior wall, the cardia, and posteriorly. These surfaces were carefully examined, without finding any opening. There was evidently a considerable amount of fluid and semisolid material still in the stomach, and fluid in moderate quantity, with a few small milk curds, welled up from behind, indicating the seat of perforation; but here the stomach was so firmly bound down, apparently to the pancreas, that the ulcer could not be reached. The advisability of opening the stomach was discussed, and rejected. The extravasation of the stomach contents appeared to be limited *below* by the transverse colon; *on the right* by the stomach and the adhesions behind; *on the left* by the spleen and diaphragm; and *above* by the diaphragm, forming a small cavity. This cavity was washed out with sterile salt solution, and drained by strips of iodoform gauze. Remainder of abdominal incision closed. The patient was given a large enema of salt solution. Operation lasted about an hour. Condition of patient very good.

July 10th. Has slept some during the night; no vomiting. Looks and feels pretty well. Pulse 100, temperature 99°; complains of thirst. Rectal alimentation. The gauze dressings are saturated; dressings changed.

July 11th. The gauze drain does not apparently deliver all of the discharge, and Dr. Lancaster substituted rubber tube, under ether.

July 12th. Patient removed to Boston City Hospital by Dr. Lancaster. She was given one-half grain of morphine before starting, and another one-half grain during the journey. Was taken on a cot-bed in a long wagon eleven miles over rough roads, thence by railroad, one hundred and twenty-four miles, to Union Station (in removing her from the car she had a fall from her bed), placed in an ambulance, and arrived at City Hospital, in spite of her adventures, in fairly good condition. By the courtesy of Dr. H. W. Cushing I am able to quote from the records of the hospital that during the first weeks of her stay there her condition was fairly good, except for a more or less continuous fever, which was evidently septic and due to imperfect drainage. She was nourished by enemas.

July 19th. Began to take milk in small quantities by mouth, and July 28th began solid food.

August 5th. Was etherized, and Dr. Munro dilated the discharging sinus and probed the wound thoroughly for pus pockets, afterwards washing out with peroxide of hydrogen. The temperature dropped soon after this operation, and the wound steadily healed, so that at the end of eleven weeks the patient was discharged cured.

On October 28, 1898, I examined the patient and found the wound entirely healed; no local tenderness or induration, and she said she was having no trouble with digestion.

The case illustrates the occasional value of drainage in perforative peritonitis, even when the perforation is not closed. This is especially true, of course, when the peritonitis is localized, as was the case with this patient. It also illustrates the fact that a gastric ulcer can heal under the treatment long ago recommended by Wilson Fox and Balthazar Foster,[1] that is, rest in bed, no food by the mouth, and rectal alimentation.

Undoubtedly every possible effort to find and close the perforation should be made in these cases, and undoubtedly the greater the skill and experience of the operator the fewer will be the failures to find the opening. When it cannot be found, however, circumstances must decide the action.

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[1] Ewald: Diseases of the Stomach.

The advice of Keen,[2] to open the stomach and treat the ulcer by thermo-cautery, and then to do a gastroenterostomy in those cases which are not accessible from behind because of adhesions to neighboring organs, bears the weight of Keen's authority, and the precedent of the case of Küster, mentioned by Keen. Where sufficient assistance and apparatus are available I believe this plan to be a good one, generally speaking. In such cases a small electric light, thermo-cautery, and perhaps a Murphy button, might be found useful.

In the case reported the conditions found and the subsequent progress of the case show that only a localized area had been exposed to the extravasated stomach contents, and it is not unlikely that a more determined search for the perforation, either by the attempt to dissect the posterior wall of the stomach from its adherent attachments, or by opening the stomach and treating the ulcer from within, might have had a less favorable result, either by spreading the infection from the stomach contents, or by prolonging the shock of the operation.

Relative to the results in incomplete operations for perforated gastric ulcer, I find in Keen and Tinker's table of 78 cases[3] 14 cases in which, so far as I can determine from the reports, either the perforation was not found or, if found, could not be sutured. Of these 14 cases 6 recovered and 8 died. In the accompanying table of 15 cases there were 2 in which the perforation was not found. Of these 1 recovered.

I have been able to collect 15 cases of operation for perforated gastric ulcer since the publication of Keen and Tinker's[4] compilation of 78 cases, and have tabulated them in the same admirable way.

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THE RADICAL TREATMENT OF CHRONIC DACRYOCYSTITIS.

BY EDWARD R. WILLIAMS, M.D., BOSTON.

THE radical treatment of chronic dacryocystitis by an excision of the tear-sac has been used especially by the Germans during the last few years, with very brilliant results, and while studying in Kiel and Berlin I observed the operation and its after effects.

Chronic dacryocystitis is primarily caused by stenosis of the lachrymal canal, which may be brought about by (1) inflammation of the mucous membrane of the nasal duct in acute or tuberculous coryza; (2) the cicatricial closure of the nasal duct by the healing of a syphilitic or tuberculous ulcer; (3) tumors or nasal polypi or congenital deformities of bone which may block the nasal end of the duct; (4) foreign bodies in the lachrymal passages whose frequency and importance have been generally overlooked. In the Kiel Hospital reports were found a number of such cases of dacryocystitis caused by cilia or hairs from the head which had found their way in through the puncture. Dr. Rehr cites two interesting cases. One man had a cilium projecting half-way out of the puncture, which continually rubbed against the bulbar conjunctiva. While Dr. Rehr sought for a pair of forceps the hair disappeared, having been forced into the canaliculus by closure of the lids. By stroking the canaliculus towards its opening the hair came again in sight, and was easily extracted with forceps. The second case shows how a cilium may be completely in the wall of the sac. This case of dacryocystitis was of six months' duration. After operating, the sac was split open and a cilium was seen sticking out of some granulations just opposite the opening into the nasal duct. On the opposite wall was the site of insertion of the other end of the hair, it having been pulled out as the sac was laid open. The entire lower half of the tear-sac was lined with granulations, and if the cilium had lain entirely against one wall it would have been completely covered by the new growth.

Chronic dacryocystitis may be either mild or severe. The milder type has an intensely reddened conjunctiva, swelling of the tear-sac, which, if pressed, discharges a thin watery fluid, denoting a stenosis of the nasal duct. This fluid in the course of some days becomes muco-purulent and finally purulent. The severer form is characterized, in addition to the above symptoms, by sudden and intense pain with great swelling of the lids and conjunctiva, an abscess forms in the tear-sac, the pus is finally discharged through the skin and a fistula is formed. The discharge from this fistula changes gradually from a purulent to a watery one. So long as the opening remains clear the patient will be free from any return of the inflammatory symptoms.

The treatment of this disease is partially symptomatic and must vary for different conditions. In acute catarrhal cases the stricture of the lachrymal passage may be dilated with suitable probes. The canal is irrigated, generally at the same time, by Anel's syringe, with solutions of zinc or corrosive sublimate. Such treatment is apt to last a long time, and a considerable number of these patients have relapses. In Schweigger's and Snellen's clinics the acute inflammation with abscess formation is treated by a simple incision through the skin into the tear-sac, the after-treatment being dilatation with probes and irrigation. The chronic cases are the ones generally selected for the radical operation of extirpation, which has come again of late years more into favor, especially in Germany, and has been used with very brilliant results, for instance, in Voelckers's clinic at Kiel.

The operation, first performed by Platner (Leipzig) in 1724, was also used by von Graefe in 1879–1881 in about forty cases. He recommends the operation in (1) all cases of obstinate dacryocystitis with stenosis of the nasal duct, where the sac is protuberant and thickened. Such patients could be probed, and often are, but the treatment lasts too long; (2) in cases of fistula, where the skin has been attached to the tear-sac by cicatrices due to frequent phlegmonous inflammations, and in chronic catarrhal cases due to polypi, where the nasal duct still remains open. Rehr says the operation is indicated for all cases of dacryocystitis except an acute inflammation arising from an external infection. If such an inflammation arose without any previous epiphora or purulent discharge, it will cure itself. The advantages of an extirpation over the obliteration operation by the electro-cautery are: (1) it lasts only twenty minutes on the average, and is without danger to the patient; (2) by using a five-per-cent. solution of cocaine hydrochlorate it is nearly painless, and pa-

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[2] Philadelphia Medical Journal, June 4, 1898.
[3] Loc. cit., June 11, 1898.
[4] Loc. cit.

No.	Operator.	Reference.	Age and Sex.	Died or Recov'd.	Previous History.	Character of Attack.
1	G. Reinhardt Anderson.	Lancet, May 14, 1898.	F.	R.	For more than a year dyspepsia; no hematemesis.	Vomiting after every meal for three days then severe abdominal pain, collapse, perspiration, face ashen, rapid thready pulse, general abdominal tenderness.
2	L. A. Bidwell.	Medical Press and Circular, vols. 120, 126.	F. 40	R.	Symptoms of gastric ulcer.	Had been living on milk. Ate a chop and in a short time had acute pain in left hypochondrium and became collapsed.
3	J. Paul Bush.	British Medical Journal, November 5, 1898.	F. 26	D.	History of old gastric ulcer.	Symptoms and physical signs of ruptured gastric ulcer.
4	J. Paul Bush.	British Medical Journal, November 5, 1898.	F. 24	R.	Indistinct history of gastric ulcer.	All signs and symptoms of perforation.
5	A. T. Cabot.	Boston Medical and Surgical Journal, August 11, 1898.	F. 30	R.	For some time indigestion, occasional vomiting, 1 week before small amount of blood. Gas in stomach in large quantities.	At 10 o'clock previous day violent abdominal pain. Rapid swelling of abdomen. Collapse.
6	John Campbell.	British Medical Journal, July 16, 1898.	F. 35	R.	Twenty years before, for 2 years pain in gastric region aggravated by food. For 18 years neuralgia of hand, face and side about 3 hours after meals. Beginning of July, 1897, an attack of usual character and also vomiting after food.	July 20, 1897, porridge and milk for supper at 9 P. M. At 11 awakened by sharp pain in abdomen. It increased in intensity. At 1.30 A. M. pulse 80. Temperature normal at 1.30 P. M. July 21, pulse 104, temperature 101°, pain and distended abdomen.
7	C. P. B. Clubbe.	Australasian Medical Gazette, June 20, 1898.	F. 21	R.	Indigestion for some time. Pain in epigastrium. No vomiting. Been getting pale and weak.	Sudden pain in abdomen. Swelling of abdomen. Tender all over, especially in left epigastrium.
8	" "	Australasian Medical Gazette, June 20, 1898.	F.	D	Patient consulted Clubbe April 25, 1898, for severe epigastric pain and vomiting. April 26, vomiting all day, pulse 100, temperature 98.6° April 27, at 11 A. M., same condition.	About 3 P. M. marked change for worse At 10 P. M. pulse 114, temperature 99.8° Abdomen tender all over. Distention. Liver dulness absent.
9	" "	Australasian Medical Gazette, June 20, 1898.	F. 19	R.	Has had slight epigastric pain and occasional vomiting for last few weeks. Sometimes vomit had appearance of coffee grounds.	Suddenly seized with violent pain in epigastrium. Half hour later vomited. Blood in vomit.
10	" "	Australasian Medical Gazette, June 20, 1898.		R.		
11	Garré.	Münchener med. Wochenschrift, September 13, 1898.		R.		
12	Garré.	Münchener med. Wochenschrift, September 13, 1898.		R.		
13	E. W. Roughton.	British Medical Journal, July 9, 1898.	F. 20	D.	Dyspepsia. Never hematemesis.	Slight attack of pain April 7th. Worked on April 8th, and went to bed at usual hour Woke at 3 A. M. with violent epigastric pain
14	Dr. Sharkey.	Lancet, May 14, 1898.	F. 33	R.	When 15 years old began having pain, with occasional vomiting. Two years ago hematemesis. For 15 months treated for gastric ulcer.	Sharp pain in left side below ribs. Taken to hospital, on the way vomited brownish matter looking like cocoa.
15	F. M. Sherman.	Boston Medical and Surgical Journal.	F.	R.	Eleven years ago, pain and "sour stomach." More or less trouble since, with acidity, vomiting, pain and gas. In February, 1897, hematemesis, much pain and acidity for last year. Diagnosis of gastric ulcer had been made.	Severe pain in left side of neck, left shoulder and just below ribs on left side, 5 hours after food, which was mostly milk. Pulse rate gradually but steadily increased.

ULCER. COMPILED BY FRANK M. SHERMAN, M.D.

CONDITION AT OPERATION.	SITE OF PERFORATION.	OPERATION.	REMARKS.
apse, absence of liver s to seventh rib.		Median incision 5½ inches long above umbilicus. On entering peritoneal cavity escape of gas and turbid serum of marked gastric odor, flakes of lymph on surface of liver and omentum. On drawing down stomach a small punched out perforation came into view, from which escaped dark brown liquid. Perforation secured by 3 rows Lembert sutures infolding stomach in long axis. Peritoneal cavity flushed with large quantities of water. Systematic sponging. No drainage. Time 1 hour, 20 min.	Uninterrupted recovery, excessive vomiting 48 hours and slight pleurisy with effusion. Rectal feeding until 9th day, fish 17th, chicken 27th day. Temperature normal 13th day. Sat up March 24th. Discharged April 29th.
omen rigid and dis- l. Liver dulness com- y disappeared.	Anterior wall close to pylorus.	Incision in left semilunaris. Large amount of semi purulent fluid. A little lymph between left lobe of liver and stomach. On separating these a hole size of tip of finger found in anterior wall close to pylorus. Lembert sutures in 2 rows (first row cut out). Abdomen flushed with normal salt solution. Counter opening just above pubes, into which a drain-tube was placed. Plug of gauze in abdominal wound down to hole in stomach.	Eight days after operation patient aborted. At end of two weeks progressing favorably toward recovery, no leakage, no signs of peritonitis.
oss of hepatic dulness.	Near the lesser curvature and equidistant from pyloric and cardiac ends of stomach.	Operation in usual way. Anterior wall found thickly coated with lymph. Large quantity of thick fluid welled up in this abdominal opening. Could find no ulcer on anterior wall. Turned up the stomach and transverse colon with its omentum and tore through the transverse meso-colon. Found a large hole into which could get finger. After much trouble closed with 3 rows of sutures. Lesser peritoneal cavity carefully sponged, but did not irrigate. Large tube down to site of ulcer.	Nothing by mouth for first 24 hours For 36 hours was much collapsed. Respiration falling to 8 per minute, then steadily improved and between three weeks and a month after the operation, when for some days had been taking solid food with comfort, she rose suddenly from her bed and died in collapse in a few moments. Necropsy showed ulcer completely healed, no abscess or pus anywhere, pale and somewhat flabby heart.
ence of liver dulness.		On opening abdomen a quantity of food and fluid came away. Could see nothing but felt a hard mass on anterior surface near lesser curvature. Peritoneum closed with much difficulty. Four rows sutures. Neighboring portions of peritoneal cavity carefully sponged. No irrigation. Two drain-tubes.	Nothing by mouth for 24 hours. Uninterrupted recovery.
er morphine and hot tations condition im- l. Absolute disappear- f liver dulness.	Lesser curvature ½ of an inch in diameter.	Median incision. Between stomach and liver fibrinous exudate and on lesser curvature a yellow sloughing area. In centre of this was seat of perforation. Closed by folding the stomach wall together over ulcer with Lembert stitches in 2 rows.	Steady and uninterrupted recovery.
	Lesser curvature, about 1 inch from pylorus, size of threepenny bit.	Median incision. Gas escaped from peritoneal cavity. Margins trimmed with scissors. Raw edges drawn together by suture of fine silk. Over this dozen Lembert sutures and over all a piece of small omentum.	As stomach contents had not extended far abdominal cavity was not flushed. Nutrition by enema for 5 days.
ewhat collapsed, great Pulse 120, weak, liver ss lost.		Opening in mid line above umbilicus. Gas escaped. Flakes of inflammatory lymph on anterior surface of stomach under lymph perforation ¼ inch in diameter brought together by catgut closing edges of peritoneum. Abdomen washed out with sterile water, large rubber drain-tube and in this strip of gauze.	Uninterrupted recovery. Discharged cured February 26, 1898.
	Found post mortem high up in post-cardiac region near esophagus.	Incision mid line above umbilicus. Peritoneum injected and somewhat sticky. No lymph. Stomach appeared to be inflamed. No perforation to be seen anteriorly. Omentum separated and posterior surface examined. No sign of perforation. Region of appendix examined. No clue to symptoms. Abdomen closed. No drain.	10 A. M. next day much collapsed; 8 P. M. worse and died at 11 A. M. next day. Necropsy showed small perforation high up posteriorly near esophagus.
ewhat collapsed. quick but fair strength. erature 98°. Tender er. Slight distention. dulness obliterated to xillary line. Respira- ifficult.	Anterior wall.	Incision in mid line above umbilicus. Peritoneum very sodden and edematous. Large quantity of lymph over intestine and stomach on anterior surface, thickening over area of 2 square inches, in centre of this area a slit-like perforation. Opening difficult to close because stomach wall would not hold stitches. At last closed and omentum placed over the mended part. Large amount of stomach contents escaped into peritoneal cavity. Opening made below umbilicus and abdomen thoroughly flushed out with hot water and boracic solution. Glass tube in lower opening down into pouch of Douglas. Upper incision drained by strips of iodoform gauze.	April 29th. Patient slept off and on during the night. Slight pain. Pulse 124, temperature 98°, respiration 28. April 30th, gauze removed. May 5th, beef peptonoids by mouth; recovery.
			This case is mentioned with the others as occurring some years before. No details given.
	Perforation into rectus muscle.	Resection of stomach wall.	
	Into transverse colon.	Plastic of stomach, anastomosis with colon.	
	Anterior surface near cardiac extremity, which was adherent to left lobe of liver.	Incision 5 inches above umbilicus. Gas on opening peritoneal cavity. Left lobe of liver found adherent to anterior surface of stomach. Perforation one centimetre in diameter on anterior surface near cardiac orifice. No extravasation of stomach contents. Left rectus divided close to costal margin gave good access. Double row of Lembert sutures. Lymph sponged away. Irrigated with 1-5000 biniodide solution. Gauze drain. Operation well borne.	Vomiting bile next day. April 10th, stomach washed out. April 13th, gauze removed, general condition good. April 14th, not so good, pain, tenderness, fever. Died April 16th. Necropsy: abscess, ½ pint of pus between cardiac end of stomach and spleen, left lobe of liver and under surface of diaphragm.
ious countenance. In- pain in epigastric region left hypochondrium. nen rigid. Not dis- l. Normal liver dul- Epigastric and hypo- riac regions tender. acid, 1,026, reduced ng's solution. Extremi- cold. Temperature) 95.6°, pulse 88.	Anterior surface close to lesser curvature and pylorus ½ inch in diameter.	Abdomen opened in mid line above umbilicus. Three pints of normal salt solution, containing 1½ ounces of brandy, in median basilic vein, improved appearance of patient and character of pulse. When peritoneum opened several ounces of milky fluid escaped. Ring of thickening around perforation. Ulcer inverted, with double row of Lembert sutures and closed with omental graft. Intestines turned out on surface of abdomen and washed with sterile water. Abdominal cavity and pelvis carefully sponged out. Pelvis contained stomach contents, but no sign of peritonitis. Drain introduced through an incision below umbilicus. Operation wound closed.	Recovery uneventful. Fed by rectum 15 days. Reducing agent never present in urine after the operation. Discharged February 24, 1898.
omen swollen and tym- c. Liver dulness almost peared. Very tender at f abdominal pain (epi- um and left hypochon-). Pulse 160, tempera- 01.5°.	Posterior surface.	Curved incision 4½ inches just below and along costal margins, left side. Tissues edematous as peritoneum approached. On opening abdomen gush of gas and turbid fluid. Stomach attached to abdominal wall by recent adhesions which were separated. Lower part of anterior surface, cardia and posteriorly the stomach were covered with patches of thick lymph. Fluid containing milk curds welled up from behind, where the stomach was so firmly attached that the opening could not be found. Gauze sponges shutting off the general peritoneal cavity, a cavity bounded by transverse colon, stomach, diaphragm and spleen (which appeared to be the only parts infected with stomach contents) was flushed out with sterile salt solution and drained with strips of sterilized iodoform gauze. Time of operation, 1 hour.	Pulse better at end than at beginning of operation. Slept some during the night. Next morning pulse 100, temperature 99°. Next two days temperature rose gradually. July 12th, removed to Boston City Hospital, 136 miles. Here for some weeks, had a septic fever. Nourished by rectum. July 19th, began milk, small quantities, by mouth. August 5th, etherized and the discharging sinus dilated and probed for pus pockets by Dr. Munro. Gradual and complete recovery.

tients are more willing to undergo the operation than under chloroform; (3) healing, almost always *per primam*, is completed so that patients can leave the hospital in ten days on the average; (4) the curved incision of Voelckers is an improvement over the older straight one, because it avoids ectropium, which was formerly the frequent result of this operation; (5) this method is advantageously employed in old chronic catarrhal cases which ordinarily are probed; (6) the epiphora stops entirely when the person is indoors and may trouble him only very slightly when exposed to a wind, dust, smoke, etc.; (7) the possibility of a corneal infection is avoided when the source of trouble is removed, which is of especial importance when only one eye is useful.

The operation as performed by Voelckers consists, first, in the subcutaneous injection of the five-per-cent. solution of cocaine over the tear-sac. The patient being laid upon a low bed, the incision is begun just below the eyebrow at a point exactly over the canaliculus. The knife is now carried in a curve onto the nose, and finally ends the cut at a point on the cheek, exactly opposite the starting point. The distance from the cut on the nose to the canthus is eight to ten millimetres. The incision being made through to the bone, the inner edge of the tear-sac is generally seen at once. The sac is then separated from the surrounding tissue by means of an elevator, and from the malar bone by pushing the elevator well under the sac and making one or two upward prying movements. The skin can be now dissected away from the front surface of the tear-sac. Up to this point the operation is generally quite bloodless if properly managed. The surgeon next grasps the entire sac with strong fixation forceps and raises it with his left hand, while with his other hand he divides the sac as it passes down into the nasal duct. The points of the scissors must be pushed as far as possible into the bony canal in order to include as much sac as possible. The hemorrhage is now generally profuse, but can ordinarily be controlled by pressure in a few minutes. The sac being freed from surrounding parts wherever necessary, the bony nasal canal must be carefully inspected, and if all its contents (excepting periosteum) are not removed, as may be the case where the tissues are brittle, they must be curetted out at once. After thorough disinfection the wound is closed by three or four deep sutures. The average duration of this operation is twenty minutes. If necrosis of malar or nasal bones is found a broad communication into the nose will allow the external wound to heal *per primam*.

Clinical Department.

REPORT OF A SECOND CASE OF DOUBLE OVARIOTOMY DURING PREGNANCY, WITH HYDATIFORM MOLE.[1]

BY R. A. KINGMAN, M.D., BOSTON,
Gynecologist to St. Elizabeth's and Carney Hospitals.

On the evening of February 24, 1897, I read before this section a report of a case of double ovariotomy during pregnancy, in which case two ovarian tumors of considerable size were removed and the pregnancy went on to term. The account of the labor was included in this report, with a series of conclusions drawn from a consideration of the unusual conditions presented during operation and in the conduct of the labor. This paper was published in the *Boston Medical and Surgical Journal* of July 29, 1897, page 103.

One week after the reading of the paper I operated on another similar case, which yet presented such striking differences as to make it well worth recording in contrast with the first one.

On February 28th, four days after the meeting of the section, there was admitted to my service in the St. Elizabeth's Hospital, by recommendation of Dr. C. H. Hare, a patient whom he had seen twice in his capacity as district physician of the Boston Dispensary. She was suffering from excessive vomiting, evidently due to pregnancy, the diagnosis being roughly verified on the occasion of the first visit by feeling the abdominal tumor under the bed clothing.

No relief being had from the first prescription, Dr. Hare was called a second time, and upon making more thorough examination discovered an abdominal tumor in addition to the pregnant uterus.

Upon entering the hospital the following history was obtained in brief: Mary F., married, twenty years of age, family history negative. Has had one child, with difficult labor. No miscarriages. Menstruation always regular, no pain, three or four days, profuse; first time at sixteen years; last time, December 3, 1896 (not quite three months previously). Never had leucorrhea or vesical symptoms. Was well up to December, 1896. Some time during that month began to have severe attacks of indigestion, with vomiting at any time during the day, but apt to be worse after eating. Vomiting has lately been excessive, with rapid loss of flesh and strength. Pulse 130.

Two tumors were distinctly made out, not only by Dr. Hare and myself, but by several of my colleagues on the hospital staff, who kindly examined at my request in consequence of the rather puzzling conditions which presented.

In the pelvis, nearly filling it symmetrically, was a globular, elastic mass, having almost exactly the characteristic feeling of the pregnant uterus at three months. Above this mass was another one rising from the pubes to an inch above the umbilicus. This was ovoid in shape, strongly elliptical in longitudinal section, was softly elastic almost to fluctuation, and though frequently examined for considerable periods of time, on no occasion could contractions be noted.

The cervix was very slightly softened, was pushed forward and upward behind and closely against the pubes. It seemed continuous with the upper tumor, and yet, owing to lack of space, it was impossible to determine that it was not sharply flexed and continuous with the lower tumor. Such a condition would be easily explained by a retroflexed incarcerated pregnant uterus, especially if there were resting upon it an ovarian tumor large enough to reach above the umbilicus.

The uncertainty arose from the strong resemblance of the pelvic tumor to a pregnancy and from the lack of characteristic form, density and contraction on the part of the abdominal tumor. No fetal parts could be felt, and fetal heart sounds were lacking. The history pointed to a pregnancy of not over three months' duration. The pelvic tumor corresponded closely to this requirement in size, while the abdominal tumor was too large.

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[1] Read before the Suffolk District Medical Society, Section for Obstetrics and Diseases of Women, December 28, 1898.

The importance of immediate operation was made plain to the patient, but she refused absolutely to yield consent. In view of the evident urgency of the case and the ignorance of the patient, no heed was paid to her objections, but the operation was insisted upon and was performed on the morning of March 3d. At the time of operation there was moderate flow of blood from the vagina, which had been in progress for several hours. The customary median incision was made and the abdominal tumor at once presented, being without question the pregnant uterus, but astonishingly soft. In order to avoid danger of miscarriage, the uterus was handled as littie as possible, but it being in the way of removing the pelvic tumor it had to be somewhat strongly pressed to one side. In this manipulation no suggestion of fetal parts was felt.

The pelvic tumor proved to be a multilocular cystoma of the right ovary, made up of a great number of small, thin-walled cysts. The broad ligament was drawn over it by the expanding uterus, so that extraction was difficult. The tumor proved so friable that the individual cysts broke down rapidly under the pressure of the fingers in the act of withdrawal from behind the tense broad ligament and hemorrhage was free, but the work was rapidly accomplished and the bleeding immediately checked. The tumor was tied off with chromicized catgut, using the cobbler's stitch.

The other ovary was now sought for and was found in the form of a hitherto unsuspected tumor, of the same size and character as the first. It was located behind the fundus of the uterus, high in the abdomen, in contact with the greater curvature of the stomach. It was too large to take in the hand, was slippery and loosely movable, and the pregnant uterus blocked the way for its being brought into view, so that at first some difficulty was experienced in its extraction. Remembering, however, the great friability and vascularity of the former tumor, the fingers were plunged deeply into the mass, thus hooking into it and extracting it almost in a single motion.

Aside from the condition of the uterus, nothing so strongly attracted my attention as the broad ligaments. These were in marked contrast to those seen in the operation previously reported, there being absolutely no suggestion of the greatly enlarged veins so strikingly evident before. In fact, the development of vessels was even less than would be expected in the presence of two tumors of such size.

The toilet of the peritoneum completed, the wound was closed with continuous layer sutures of chromicized catgut and the patient was returned to the ward in good condition. During the afternoom she was very nervous and restless, and throughout the evening had sharp abdominal pain, with increase of flow from vagina. At 9.40 P. M. she passed a large clot which was mistaken by the house-officer for the ovum, and the flow lessening I did not go to the hospital. In the morning a vaginal examination revealed a mass presenting at the vulva, which I removed entire. It proved to be a semi-solid, resembling boiled pearl tapioca, and in quantity about a pint. It was wholly within the vagina, came away easily, and after its removal there was no further hemorrhage. Convalescence was rapid and uneventful, the patient being discharged well on the twenty-fourth day.

Pathologist's Report, by Marshall H. Bailey, M.D. — "Cystomata of both ovaries. Later, a mass spontaneously evacuated from uterus and vagina received. This was a soft mole-like growth, made up of little cysts about the size of swelled tapioca, clear and transparent. The whole mass measured rather less than a pint.

"*Diagnosis.* — Hydatiform placental mole."

This case presents points of interest both for the gynecologist and the obstetrician. Both will note at once the difficulty presented in attempting an accurate diagnosis, owing chiefly to the change from the customary signs of pregnancy, due to the presence of a mole, rather than a living embryo in the uterus. The rapid enlargement which takes place in such cases, commonly about the third month, had already caused marked thinning of the uterine wall, and the shape of the tumor was strongly ovoid instead of spherical as in ordinary pregnancy.

From the gynecological standpoint, I would particularly call attention to the striking absence of vascularity in the pedicle as contrasted with the case before reported. In that report I said: "The only unusual condition noted in consequence of the pregnancy was the extreme vascularity of the pedicle, which consisted of the whole breadth of the broad ligament. It seemed a mass of dilated, tortuous veins."

The explanation of this difference must be found in the fact that the uterus did not contain a living ovum, and nature had therefore failed to provide for a continuance of development.

A point noted before is again emphasized by the occurrence of pregnancy in such an advanced stage of disease of the ovaries. There seemed no true ovarian tissue left, and yet an ovule was brought to maturity and impregnation resulted, for it is an accepted fact that hydatiform mole cannot occur without conception.

Here, however, our knowledge of the etiology of this condition seems to be at an end, and in this connection this case assumes its greatest interest to the obstetrician. In view of the rarity of the disease, this is probably the only case on record in which the inside of the abdomen and pelvis have been observed during its continuance and in the living subject. True, the case reveals no conclusive evidence upon which to build a theory, but it at least suggests the possibility that the advanced disease of the ovaries may be responsible for a lessened vitality in the ovum, hence leading to the disease of the chorion and the death of the fetus. The prompt delivery after the operation cannot be attributed to the latter, as hemorrhage had begun the day before and expulsion of the mass could not long have been delayed.

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A CASE OF TETANY.

BY JOSHUA C. HUBBARD, M.D., BOSTON.

WALTER E. O. W., fourteen months old, entered the summer hospital on August 15, 1898, with a moderately severe attack of fermental diarrhea.

Physical Examination.—Well developed and poorly nourished; weight eleven pounds four and one-half ounces; head large and square; two upper incisors only teeth present; chest rather narrow. Rosary present; abdomen prominent; very small umbilical hernia; very large epiphyses at wrists and ankles;

phimosis with retained smegma; tibiæ slightly bent outward; heart and lungs negative.

During the last of August his temperature rose and a series of fluctuating swellings came on the back of his head. The first one that was opened contained only serum, but the second a little pus. The sub-occipital glands were enlarged to the size of beans and the induration and swelling extended down the neck and round onto the face.

September 6th. Last night a sudden acute attack with the following symptoms: Thumbs flexed across palms, fingers flexed, wrists flexed, knees slightly bent, feet in position of talipes equinus. All these joints held rigid by the tonic spasm of the muscles. At times neck rigid; at times chin can be brought down onto chest. Back rigid. Abdomen very much distended. Knee-jerks absent. No involvement of face. Pupils equal and react to light.

The spastic condition gradually disappeared so that by September 12th the only evidence of it was the increase in the knee-jerks.

The attack had no effect on the diarrhea, which continued to improve slowly, or the appetite. He lost a little weight during it, but with the cessation of the acute symptoms began to gain again and left the hospital on September 13th, weighing eleven pounds fourteen ounces.

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Medical Progress.

REPORT ON ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D., BOSTON.

POLYARTHRITIS DEFORMANS IN CHILDREN.

Tschernow[1] describes this affection and considers it as occurring especially in patients with an hereditary dyscrasia, influenced by general or local conditions, which, irritating the joints, bring out acute or subacute rheumatic symptoms. Influenced by these causes, characteristic symptoms develop, namely, hypertrophy of the epiphyses and atrophy of the diaphyses; destruction or fibrous degeneration of the cartilages; alteration of the synovial membrane; early muscular contraction. The chief changes take place in the bones, especially of the smaller joints. In 49 cases the affection began with an acute or subacute onset. Heart complications were seen in only nine cases out of the 49. A marked distinction is to be observed between this and the ordinary rheumatism in children, which is not accompanied or followed by deformity or the development of bone exostosis. In an analysis of 400 cases the affection was found to range according to age from one year four months to twenty-five years. The constant current is employed, but, according to the writer, without marked benefit.

Delcourt[2] contributes an excellent article on the subject, giving an autopsy with carefully recorded observations of the anatomical conditions. A marked distinction is to be made between the enlargement of the joints in the condition and the changes due to the bacillus of tuberculosis. In the condition described a non-tubercular osteomyelitis is to be found at the end of the bone, with fibrous rheumatoid changes in the periarticular tissues. An x-ray photograph may be of value to determine the non-tubercular nature of the affection.

CONGENITAL HIGH POSITION OF THE SCAPULA.

Pitset[3] describes this unusual deformity, which has erroneously been attributed to an exostosis, and attributes it to an abnormal position of the arm *in utero*, followed by a consequent alteration in the muscles whereby the deformed position is maintained. It is not to be confounded with the non-congenital high position of the scapula seen in the curvature of the cervical region in lateral curvature.

The treatment of this congenital form, which has been successfully performed by Bolton and Hoffa, consists in operative interference. An incision is made along the forward border of the cucullaris muscle; the muscle is separated from its scapular attachment; the curve of the scapula corresponding to the attachment of the muscle is cut off by means of a bone forceps and the wound is packed.

CERVICAL RIB WITH OPERATION.

Howard J. Williams[4] reports a case of this rather unusual affection, in which the use of the skiagraphs for methods of location of diagnosis was misleading. The case presented early the symptoms of a prominence above the clavicle, which later increased in size, and became troublesome. It was apparently not connected with the clavicle, but moved with forced respiratory effort. It was at first thought to be either a prominent transverse process, or exostosis, or enchondroma coming from the first rib. Later the tumor became troublesome, and was removed by an incision between the sterno-mastoid and the trapezius. There was found a supernumerary rib about three inches long, extending from the transverse process of probably the sixth cervical vertebra. It presented a joint in the middle portion, which allowed by ligamentous union a limited motion. It gave attachment to some of the muscle fibres, probably one of the spleni, and also of muscle fibres which passed to the first rib.

The author considers that the failure of the skiagraph, either for purposes of locating this tumor, or determining its character, is of importance. The diagnosis would not have been made if reliance had been placed entirely upon this.

MYOSITIS OSSIFICANS.

De la Camp[5] reports a case of this affection, where by means of radiographic demonstrations the affection is shown to be more an excessive development of exostoses than an ossifying inflammation of muscle.

Boks[6] considers this affection in children the result of an inherited tendency, although the initial cause is a trauma. In a child two and one-half years of age, described by him, hard painful regions developed under febrile symptoms in different muscles, which in part diminished, but in places developed permanent thickening of the consistency of bone. In some regions the muscles became almost entirely of hard masses as in others they were soft and atrophic. The muscles of the neck were first attacked and later the muscles of the thorax, especially of the right shoulder. In the abdominal muscles isolated hard kernels could be felt. The affection, in the opinion of the writer, is not an exostosis, but an interstitial inflammation of the muscles which may develop scar tissue or bone. The prognosis is unfavorable.

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[1] Centralbl. f. Chir., p. 853, August 20, 1898.

[2] Revue Mensuelle des Maladies de l'Enfance, July, 1898, 329.

[3] Zeitschrift f. orthopädische Chirurgie, 1898, Bd. iv, Heft 1, p. 52.

[4] Annals of Surgery, October, 1898.

[5] Fortschritt auf dem Gebiete der Röntgenstrahlen, Bd. 1, Heft 5.

[6] Berliner klinische Wochenschrift, 1897, p. 41.

HYPERTROPHIC PULMONARY OSTEO-ARTHROPATHY.

Hasbrooke[7] reports a typical case of this affection, showing the enlargement of the bone in the terminal phalanges, carpal bones, and heads of radius and ulna. The feet and ankles had begun to take part in the enlargement, but had not progressed to a great extent. The joints of the affected members were somewhat stiffened, and were the seat of considerable pain. The pulmonary lesion in this case was a secondary, malignant infection of the bronchi and mediastinum. Photographs and skiagraphs are given to show the changes in this case, which are particularly marked in the shaft of the phalanges, and to an appreciable extent in the carpal bones, radius and ulna.

Hasbrooke gives a review of the reported cases in this country, which, since 1890, have been but five, and also reviews the distinction from acromegaly.

INTRA-UTERINE FRACTURE OF THE TIBIA.

Sainton[8] reports a number of cases of this affection, where attempts at correction by operation were followed by imperfect union. This he attributes to a congenital condition of imperfect ossification; in many instances there apparently existed since birth a slight pseudo-arthrosis before, and in no sense owing to, the surgical intervention.

CONGENITAL STERNO-CLEIDO MUSCULAR TORTICOLLIS.

Kuss[9] reports an autopsy and microscopical examination of the contracted sterno-cleido mastoid in the case of a six-year-old child who had been afflicted with congenital torticollis from contraction of the sterno-cleido mastoid. He reports that there was no evidence of an early hematoma. He concludes that the atrophy and contraction of the affected sterno-cleido was due to a diffuse interstitial muscular sclerosis, very extensive, though not total; more noticeable in the lower two-thirds than in the upper third of the muscle, and more marked in the deeper than in the superficial parts. The fibrous tissue in the portions most seriously affected had completely choked out the muscular tissue. In other parts the muscles presented no qualitative change.

TO DETERMINE THE HEIGHT OF THE SUPPORT NEEDED IN FLAT-FOOT.

Marshall[10] recommends an arrangement for this purpose, consisting of an adjustable block (raised by a screw) placed in a wooden stand on which the foot under examination stands.

TENDON TRANSPLANTATION.

Rocket[11] reports tendon transplantation in the paralyzed muscles of the hand. The abductors of the hand and thumb in a child of nine were paralyzed. The hand was held turned towards the side of the ulna. An incision was made along the ulnar side of the forearm, extending slightly beyond the wrist joint; the tendons of the flexor and extensor carpi ulnaris were cut close to their insertions; the tendons of the extensor brevis and abductor longus pollicis were laid bare, the sheath opened and the divided tendon of the extensor carpi ulnaris inserted into both, and the hand held in a position of radial abduction. Four months later the patient was able to abduct the hand and thumb.

In a second case, that of a child of thirteen, with paralysis of the extensors of the hand and abductor longus pollicis, the peripheral ends of the extensor longus pollicis were seen to the tendon of the extensor indicis proprius with the resulting ability to stretch the forefinger and thumb. In a fourteen-year-old boy with a paralyzed arm and flail wrist joint, with only the power of flexion of two fingers and extensor of the ring finger and thumb, left tendon transference as follows was performed through a median incision, namely, (1) extensor brevis and abductor longus pollicis; (2) extensor pollicis longus and extensor indicis; (3) the tendons of the middle and little fingers to the ring finger. Three months later the fore and little fingers could be extended and the thumb could be separated from the second metacarpal.

A similar operation was successfully performed on an individual fifteen years of age with a spastic hemiplegia of the whole right side, with distortion of the hand, which was held flexed. Incisions were made on the dorsal and volar end of the forearm and wrist joint, and the extensors of the fingers and extensores carpi were divided a short distance above the joint. The superficial flexors of the finger with the flexores carpi were divided and passed through an interosseous space and united to the central ends of the divided flexors. Five months later the hand was held straight and the fingers (whose deep flexors had not been distorted) could be both flexed and extended.

LITTLE'S DISEASE.

Eulenburg[12] reports a tendon transplanation in a case of Little's disease.

Lorenz[13] recommends tenotomy and fixation in an over-corrected position in Little's disease of spastic contraction of the limbs, followed by massage, faradization and gymnastics. Mechanical treatment he is inclined to reject.

Hoffa[14] recommends a similar method of treatment.

OPERATIVE TREATMENT OF PRENATAL CONSTRICTION OF THE LIMB.

Reinbach[15] reports a case of a child five years of age operated upon by Mikulicz. The whole circular constriction was dissected out, and a few months later a plastic operation was performed with an excellent result.

BACKWARD CURVATURE OF THE KNEE.

Gerard Marchant[16] mentions a case of this rare deformity in an adolescent seventeen years of age. A contracting band on the front of the femur, consisting of a cicatricial alteration of the quadriceps following an earlier ostitis of the femur, developed this unusual deformity. The contracted tissue was divided and the deformity corrected and fixed in a corrected position, giving an excellent result.

A. Marmaduke Sheild[17] mentions a case of this deformity in a six-weeks-old child who died ten days after forcible correction. The patella was found behind and below in the posterior intercondyloid fossa.

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[7] New York Medical Journal, May 14, 1898.

[8] Revue d' Orthopédie, September 1, 1898, p. 399.

[9] Loc. cit., January 1, 1898, p. 61.

[10] Medical News, July 16, 1898, p. 93.

[11] Lyon Méd., 1898, No. 34, p. 579.

[12] Deutsche med. Wochenschrift, 1898, No. 12.

[13] Wiener klinische Rundschau, 1897, p. 21

[14] Münchener medicinische Woch., 1898.

[15] Beiträge zur klinische Chirurgie, Bd. xxi, 1898.

[16] Revue d'Orthopédie. 1898, No. 1.

[17] Lancet, May 28, p. 1456.

DISLOCATION OF SEMILUNAR CARTILAGE.

Shaffer[18] discusses this subject, with particular reference to mechanical treatment. He considers that, in addition to the ordinary and well-recognized causes of the occurrence of this accident, the following conditions play an important part: (1) a very considerable lateral mobility of the joint; (2) an elongated ligamentum patellæ, and (3) sometimes an inability to completely extend the knee. The mechanical treatment is designed to prevent any motion other than the forward-and-back hinge motion, and to prevent stretching of the elongated ligaments, thus allowing them to become shortened until the normal motion of the joint can be controlled by them. A number of cases are given in detail, and skiagraphs showing the position of the patella in this condition.

ARTHRECTOMY OF THE KNEE.

Menard[19] has treated at considerable length this question in the more serious cases of disease of this joint in children. He describes briefly the conservative and operative methods, but his article has to do with the latter only, giving in detail the methods and results in 25 cases. He uses the curved incision, and when the posterior region is to be explored cuts the lateral ligaments, but avoids the crucial when possible. The operative method of treating a bone varies with the case. He found in a series of twelve, primary disease of the bone, four with the focus in the tibia, three in the femur, one in both at the same time, and three in the patella. The other cases are considered under the head of compression ulceration of the cartilaginous surfaces, and were treated by arthrectomy, curetting and draining. Ten of the arthrectomies resulted in a cure, and one was unsuccessful. In one other arthrectomy could not be done, but dissection was required, and one case failed to heal. In the other cases seven were cured without sinuses. He looks with favor on arthrectomy, and does not think that it increases the chance of shortening in these cases.

He adds that he has found in his study of such cases that when the muscle fossæ are formed it is always towards the larger rather than the smaller joint.

(*To be continued.*)

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Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR OBSTETRICS AND DISEASES OF WOMEN.

C. H. HARE, M.D. SECRETARY.

Regular Meeting, Wednesday, December 28, 1898, Dr. F. W. Johnson in the chair.

Dr. E. W. Cushing presented two

PATHOLOGICAL SPECIMENS.

There is nothing uncommon about the operation in case of the first — a large, soft myoma of the uterus— but it is interesting always to notice these tumors, owing to the peculiar softness, closely resembling fluctuation of the uterus, which in some cases makes it simulate very closely a pregnancy. Before that was cut open, even after it was out of the body, it was difficult to say whether there was a pregnancy or not, that is, as far as the appearance of the uterus on opening the abdomen went. As far as the feel of it went, there is a feel there almost like that of a fetus. There is a very pretty example of hydrosalpinx with it.

The second case, from a woman fifty-eight years old, with a globular tumor perhaps ten inches in diameter in the abdomen, which did not appear to have any connection with the uterus or ovaries so far as could be made out; it seemed to be rather high up, and yet occupied the lower central part of the abdomen. On opening the abdomen and drawing back the omentum it was found the tumor was covered by peritoneum containing fat. It seemed as if it might be a kidney cyst or something of that kind. On incising the peritoneum it could not be stripped back; the tumor was evidently cystic. A trocar was put in, a good deal of fluid came out, and then this soft adeno-carcinomatous material. The tumor was connected evidently by the omentum with the stomach above, entirely movable, evidently malignant, but after once opened the chances were that the woman would die of sepsis. It seemed as if a desperate operation was suitable for a desperate disease. With the very efficient assistance of Dr. Crowell I proceeded to turn the tumor out. It was found the transverse colon ran right across it. I tied off the omentum on each side and then proceeded to separate the tumor carefully from the stomach, cutting first through the upper layer of the double fold of the great omentum. I found the stomach itself was diseased. I rapidly tied off the omentum, putting forceps on the lower layer, and with a Murphy button brought the two ends of the colon together, sewing up the omentum from behind so that I united it; happily the transverse colon is a very convenient place for a Murphy button, because you can take this free omentum and cover your Murphy button in very conveniently. Then I took a piece out of the stomach, about as big as the palm of the hand, sewed the edges of the incision together with catgut, rolling the peritoneum in, and the patient was put to bed. She was in some shock, pulse pretty high; had a couple of subcutaneous injections of salt solution. To-day she is doing beautifully, pulse 98, and temperature 98° F. Whether it started in the stomach, and then this mass was formed running under the intestine, or whether it began in the intestine and then involved the stomach, cannot be decided.

Dr. R. A. Kingman read a paper entitled

REPORT OF A SECOND CASE OF DOUBLE OVARIOTOMY DURING PREGNANCY.[1]

Dr. Storer: In preparing a paper on "Torsion of Ovarian Tumors," published in the *Boston Medical and Surgical Journal* in November, 1896, in looking up the literature of the subject I was very much struck by the great tendency of ovarian tumors to become twisted either during pregnancy or immediately after labor, and in that paper I very strongly urged that as soon as the diagnosis of ovarian tumor in a pregnant woman was made the tumor should be removed, thinking that the dangers of abortion were much less than the danger from the tumor if left alone. In this connection I will outline a recent case of my own. The woman was referred to me by Dr. J. P. Lombard June 28th of this year. I had seen her a year previously and discovered a small tumor of the right ovary, which I advised to have removed, but she declined operation. She was unwell in February, and again on the second of March; no menstruation since then. On March 10th she had a severe attack of pain in the tumor, radiating downward to the right leg. Morphia was required. In May she had a similar attack, the 7th of June a similar attack, and the 27th of June another attack. In each attack the tumor grew distinctly larger, and subsequently slowly decreased in size. I saw her June 28th. She was in great pain. The uterus was apparently four months pregnant. To the right and anteriorly was a tumor the size of a fist, which was very tender, very mobile, to be displaced at least three inches in each direction, and could be shoved out of reach behind the ribs. I could not get the systolic thrill which Reboul and Mouls insist is pathognomonic of twisted ovarian cysts. I operated two days later and removed a tumor of the right ovary the size of the fist, with a very long pedicle. Now it was no longer anterior to the uterus, but was behind and in relation with the gall-bladder. There were three and one-half twists of the pedicle, but, contrary to Freund's law, the inner aspect of the tumor had swung backwards and to the right instead of outwards and to the right, but this aberrant torsion is explained by extreme length of the pedicle. When the tumor was removed there was no longer any acute strangulation, nor did the pedicle or the wall of the tumor show evidence of chronic torsion. The patient had a perfect convalescence, pregnancy was not disturbed, and her baby was born about three weeks ago.

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[18] Annals of Surgery, October, 1898.

[19] Revue d'Orthopédie, March and May, 1898.

[1] See page 185 of the Journal.

DR. KINGMAN: I will just say in connection with these remarks Dr. Storer has made concerning the importance of removal of tumors if discovered during pregnancy, that I emphasized the same point in my previous paper. The case I then reported had known of the presence of a tumor previous to her pregnancy, and had been advised at that time to let it alone — at least that was the statement she made. I called attention to the fact that if she had had the tumor removed at the time of that discovery she would have been saved very great danger. I have also had a case of torsion of the pedicle in an ovarian tumor following pregnancy, a tumor certainly as large as my head existing at the time of delivery. Torsion occurred in consequence of the diminution in the size of the uterus, and gangrene of the tumor was well advanced before I saw her. The operation was performed under trying conditions, and while the patient showed temporary gain, she died of septic peritonitis in about forty-eight hours.

This is the only case of twisted pedicle I have seen as a result of pregnancy, but its fatal issue emphasizes the importance of operating on ovarian tumors whenever discovered, and shows that pregnancy, instead of contraindicating operation, rather makes it imperative.

THE SUPPRESSION OF TUBERCULOSIS IN GERMANY. — A Congress to take measures to prevent the spread of tuberculosis will be held in Berlin from the 24th to the 27th of May. The object of the Congress is to bring before the public the dangers of tuberculosis, and to discuss the means for its prevention. It will be divided into five sections, which will concern themselves with the spread of the disease, etiology, prophylaxis, therapeutics and special hospitals.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

NINETY-THIRD ANNUAL MEETING, HELD IN THE CITY HALL, ALBANY, JANUARY 31, AND FEBRUARY 1 AND 2, 1899.

(Concluded from No. 7, p. 168.)

SECOND DAY. — WEDNESDAY.

SECTION IN GENERAL SURGERY.

THE TREATMENT OF UTERINE HEMORRHAGE WITH STYPTICIN.

DR. HERMAN J. BOLDT, of New York, gave the results of his experience with this remedy, which is a derivative of narcotin. It somewhat resembles digitalis in its action on the heart. It apparently has no oxytocic properties. It was found of service in uterine hemorrhage associated with perimetritis occurring after abortion and full-term deliveries, and in certain other hemorrhagic conditions of obscure origin. By the mouth it is given in doses not exceeding three decigrammes, and hypodermatically in doses of twenty minims of a 10 per-cent. watery solution.

THE RELATIONS OF MOVABLE KIDNEY AND APPENDICITIS TO EACH OTHER, AND TO THE PRACTICE OF MODERN GYNECOLOGY.

DR. GEORGE M. EDEBOHLS, of New York, presented this paper. He said that as a result of his method of palpating the vermiform appendix he had ascertained that four per cent. of all women have appendicitis, that 3.5 per cent. have both appendicitis and symptom-producing movable kidneys, and that 20 per cent. of all women have chronic appendicitis associated with a symptom-producing movable right kidney. Large abdominal tumors often, by their mechanical support, cause a temporary disappearance of the symptoms referable to movable kidney.

CONSERVATIVE TREATMENT IN DISEASES OF THE OVARY AND VERMIFORM APPENDIX.

DR. ROBERT T. MORRIS, of New York, read this paper. Regarding appendicitis, he said that early operation on cases of appendicitis in which the infection is confined to the appendix had yielded a mortality of a fraction of one per cent. and in cases in which the infection had spread farther a death-rate of about five per cent. This should be contrasted with a mortality of over 25 per cent. by all methods of medical treatment.

DR. A. PALMER DUDLEY, of New York, said that an experience in 114 cases of conservative surgery on the ovary had convinced him of the value of such work, and if further evidence were asked for, it was only necessary to add that in this series of cases there had been 18 subsequent pregnancies with 12 living children.

AN EXPERIMENT IN OVARIAN TRANSPLANTATION.

DR. J. H. GLASS, of Utica, in this paper described a case in which a woman having become run down in her general health following a double oöphorectomy, he transplanted into her a healthy ovary from another and younger woman. A few days thereafter the recipient of the ovary experienced erotic dreams, and then had a menstrual flow. Now, after a period of eight months, she has completely regained her mental and nutritive equilibrium.

In the discussion, DR. EDEBOHLS attributed the result to the influence of the imagination, and warned operators in this field that if this were not the case they would have to be very careful about the women from whom the ovaries were selected, as many with apparently healthy ovaries had little or no sexual instinct.

Dr. A. Palmer Dudley maintained, on the other hand, that the feasibility of such transplantation had been demonstrated experimentally.

THE ADVANTAGES OF THE SUPRAPUBIC OVER THE VAGINAL CELIOTOMY.

Dr. J. W. Whitbeck, of Rochester, discussed this subject by reporting nine cases in which the suprapubic route offered superior advantages.

THE ADVANTAGES OF VAGINAL OVER SUPRAPUBIC CELIOTOMY IN CERTAIN DISEASES OF THE UTERUS AND APPENDAGES.

Dr. H. T. Williams, of Rochester, favored the vaginal route in many operations because by this method the operation can be done more rapidly, with less shock, and with better results.

LATERAL CURVATURE AND POTT'S DISEASE OF THE SPINE; THE IMPROVED ALUMINIUM CORSET FOR THEIR TREATMENT.

Dr. A. M. Phelps spoke on this subject, illustrating his remarks with plates and specimens. He considers the aluminium corset the perfection in bracing.

Dr. L. A. Weigel objected to aluminium on the ground that it could not be protected even by varnish from the corrosive action of the perspiration.

FOUR UNIQUE CASES OF VESICO-VAGINAL FISTULA.

Dr. John O. Polak, of Brooklyn, reported these cases, with the special method of operating employed in each.

DIAGNOSIS AND SURGICAL TREATMENT OF GALL-STONES.

Dr. E. W. Mulligan, of Rochester, read a paper on this subject, in which he emphasized the importance of tenderness over the gall bladder on deep pressure as a diagnostic sign. Of the operative procedures he considered cholecystotomy the safest and best, but preferred the use of an S-shaped incision.

THE MANAGEMENT OF LATERAL CURVATURE OF THE SPINE.

Dr. Reginald H. Sayre, of New York, discussed this topic. He is of the opinion that rickets is responsible for many of these cases, and that many others are the indirect result of infantile paralysis. Having corrected the position, it must be maintained by apparatus and by development of the muscles.

THE TREATMENT OF UMBILICAL HERNIA.

Dr. William B. De Garmo, of New York, read this paper. He said that in operating on umbilical hernia the incision should ordinarily be made to one side of the median line, otherwise firm and troublesome adhesions between the sac and the skin or between the intestine and sac might be encountered. Personally, he considered an elliptical incision preferable. The wound should be carefully closed in layers, and an elastic belt should be worn by the patient for some time after the operation.

PANAS'S OPERATION FOR STRABISMUS.

Dr. D. B. St. John Roosa, of New York, presented a communication on this comparatively new operation. Of the 210 cases of convergent strabismus upon which Professor Panas had operated by his method 180 were a complete and immediate success, and in the remainder only a moderate degree of convergence remained. The method is as follows: The patient having been anesthetized, the conjunctiva is opened by a horizontal incision, and the tissues thoroughly divided about the sheath of the muscle in the usual manner. The muscle is then pulled well outward with the book, so that the inner margin of the cornea is on a line with the external canthus. The tendon is then thoroughly divided, the wound sutured, the operation repeated on the other eye, and both eyes bandaged for twenty-four or forty-eight hours.

GLIOMA OF THE RETINA.

Dr. Herman Knapp in this paper gave a detailed account of what is known regarding this affection, particularly regarding its pathological anatomy.

MEMBRANOUS CATARACT.

Dr. Henry D. Noyes in this paper reported certain types, and described the treatment appropriate for each.

THE SURGERY OF MAMMARY CANCER.

Dr. Daniel Lewis, of New York, read this paper. He said that although he had operated on 211 cases of mammary cancer, by opening the axilla, only two of the patients had died, and both of these had been septic at the time of the operation. He was skeptical about the danger of infecting the operation wound with cancerous elements as a result of division of the cancerous tumor. Since the drainage-tube had been discarded in these cases healing had been more satisfactory. It was desirable to use as few ligatures as possible.

FURTHER STUDY INTO THE NATURE AND FREQUENCY OF CANCER.

Dr. Roswell Park, of Buffalo, described in this paper some of the results achieved in the State Laboratory at Buffalo in the matter of investigation into the nature of cancer. He called attention to the undoubted and alarming increase of cancer, particularly in this State, and took issue with Dr. Lewis regarding the alleged lack of evidence as to the communicability of cancer. An item of extreme interest and importance was the constant finding at the Buffalo Laboratory of numerous peculiar bodies in specimens of cancer which were almost certainly parasites.

Dr. H. R. Gaylord, of Buffalo, supplemented the remarks of Dr. Park by a detailed description of these supposed parasites, and the work that had led up to their discovery.

Dr. Joseph D. Bryant gave a historical sketch of cancer and its treatment.

SOME PROBLEMS ASSOCIATED WITH TYPHOID FEVER.

Dr. William Osler took this as the theme for his address, which was delivered before a large and interested audience. He remarked that one fact stood out in bold relief, that is, that where there is a clean soil and pure water typhoid fever does not flourish. It is one of the best-understood of the acute infectious diseases. One cannot but read with chagrin the recent statement of Dr. Smart, an authority on hygiene, to the effect that in the matter of water-supply the cities of these United States are at least a century behind the cities of Europe. Unfortunately, the great mass of our people was more easily led by a Perkins or a Munyon than by a Lister or a Koch.

THE DISINFECTION OF THE INTESTINAL CANAL.

DR. ABRAHAM JACOBI, of New York, delivered an address on this subject. He brought forward much evidence to show the existence of auto-infection from the intestinal canal, and called special attention to the fact that putrefaction in the colon is characterized by the formation of such compounds as indol, phenol, skatol and hydrogen sulphide. Because bacteriologists had proved that certain so-called intestinal antiseptics, under the conditions in which they are used medicinally, are incapable of killing the bacteria, constitutes no valid argument against such medication, for it is well-known that very dilute solutions of such substances are often capable of inhibiting the activity of bacteria so as to prevent them from forming toxins. It is important for the physician to remember that where albuminoid putrefaction is going on in the colon the diet should consist principally of farinaceous food.

ANNIVERSARY ADDRESS BY THE PRESIDENT ON THE RELATION OF MEDICINE TO CIVILIZATION.

DR. JOHN O. ROE, of Rochester, delivered this address. He stated that the general advance in scientific knowledge had resulted from simultaneous discoveries in the various departments, yet no other department had contributed so much to civilization, the prolongation of life and the general happiness of mankind as had that of medicine. The beneficent influence of modern medical science was to be seen in the lowering of the death-rate. In the past fifty years the average duration of human life had increased from thirty-eight to forty-five or fifty years. The speaker predicted that a new day for medicine was about to dawn — a day when tradition, theory and authority would no longer be potent barriers to human perception, a day when the charms of empiricism, the perplexities of individualism, the enigmas of prognosis and the dark mystery of those protoplasmic laborers of the economy would vanish before the bright searchlight of the x-ray, bacteriology and physiological chemistry.

SECTION ON GENERAL MEDICINE.

CHLORINE IN THE TREATMENT OF ENTERIC FEVER.

DR. REYNOLD W. WILCOX, of New York, read a paper with this title. It had been demonstrated, he said, that chlorine does not irritate the gastro-intestinal tract, and that it was not wholly converted in the stomach into a chloride, and excreted as such. The severe cases recently observed in the soldiers at Porto Rico and Montauk Point were not pure cases of typhoid fever, but those in which another element was added, that is, starvation. Notwithstanding this fact, recovery had been very rapid under the administration of chlorine.

THE NERVOUS SYSTEM IN THE PATHOGENESIS OF ALBUMINURIA.

DR. J. H. BROWNLOW, of Ogdensburg, in this paper made the suggestion that both the parenchymatous and interstitial forms of nephritis arose from autotoxemia, the toxins acting primarily on the highly sensitive neurons and, by their control over the processes of metabolism, leading to the development of the well-known pathological states found in the kidneys, brain and arterial system.

DR. A. JACOBI said that he was of the opinion that not only the nervous system, but also exposure to cold, was a potent influence in the production of nephritis.

POLIOMYELITIS ANTERIOR ACUTA.

DR. CHARLES MASON, of Peekskill, read this paper, and in it called attention to the singular fact that within a period of four years and within a radius of five miles he had seen five cases of this affection. No age is exempt from it, though it is most commonly met with at the age of two years, and more often in males. Most commonly there is at first a paraplegia affecting chiefly the extensor muscles. In one-fourth of the cases both legs remain affected, and in one-half, one leg. Not much further improvement is to be expected after the lapse of one year. The chief features of the attack are: (1) the age; (2) the abrupt onset and rapid supervention of the paralysis; (3) the tendency to improve; (4) the absence of bladder and rectal symptoms, and of anesthesia; (5) rigidity and pain in the affected limbs; (6) the electrical reaction of the muscles; and (7) the arrest of growth in the limbs. The suggestion was made that the disease might be occasioned by the tardy development of the anterior horns of the spinal cord, and that the straightening of the feet without mechanical or other appliances during the first few months of life might be wholly due to this development.

Regarding the treatment, DR. BROWNLOW said that the local pains should be relieved by the application of ice and by absolute rest, and that the limbs should be kept warm.

SOME CLINICAL THOUGHTS OF CANCER, HODGKIN'S DISEASE AND CONSUMPTION.

DR. H. H. DEANE, of Watertown, read a paper with this title. He said that from the fact that in cancer and lymphadenosis the vitality steadily succumbs to some influence other than the direct effect of the new growths forced one to the conclusion that something must be circulating in the blood which is steadily poisoning the sufferer. Our efforts at treatment would remain vacillating and futile until the discovery of the specific bacterium. Cancer seems to be indigenous and extremely prevalent in northwestern New York. The paper concluded with an earnest plea for the State care of consumptives.

LITHEMIA.

DR. B. C. LOVELAND, of Clifton Springs, in this paper made the assertion that lithemia is responsible for nearly half the functional troubles afflicting humanity, as well as for a large proportion of more serious diseases. He divided lithemics into two classes, that is, (1) the plethoric or over-nourished; and (2) the asthenic or poorly nourished. The plethoric lithemic is usually of robust habit, with a stout and ruddy appearance. He usually excretes less than three pints of urine daily, having a rather high specific gravity and color. As the finger-nails are far from the centre of circulation, it is well to look here for earthy deposits, and note their smoothness and brittleness.

These individuals require more exercise and more water; they should take less albuminous food, and cereals, vegetables or fruit causing indigestion should be excluded. The asthenic lithemic is the reverse of the other in his physical make-up, and the most common manifestation of his disease is rheumatic gout, together with muscular rheumatism and neuralgia, and sometimes neurasthenia. The urine is much the same as in the other type, but the blood is poorer in hemoglobin. These persons must be made to drink water freely, and should also take small doses of salicylate or benzoate of soda in hot water. Bread, potatoes and starchy foods generally should be taken sparingly, and all sweets and all very sour fruits or vegetables avoided. Out-door exercise, cool bathing and freedom from nervous strain are important adjuvants.

WEAK HEART.

Dr. C. M. Rexford, of Watertown, in this paper emphasized the modern view that the cause of heart failure is not chiefly valvular impairment, but weakness of the myocardium. Malnutrition and anemia in both the young and in overworked adults produce heart weakness, and this, if neglected, terminates in cardiac dilatation. Iron and oxygen, and hygienic measures generally will accomplish wonders in weak heart.

NERVOUS DYSPEPSIA.

Dr. Grace Peckham Murray, of New York, read this paper. She said that undoubtedly there was much truth in the two principal theories regarding the causation, that is, that the dyspepsia is solely of nervous origin, and the theory that the stomach itself is the point of departure. It is well recognized that the nervous action of the stomach is threefold: (1) the vasomotor control of the blood supply; (2) the adjustment of the peristaltic motions; and (3) the action of the nerves on the glands. Among the prominent symptoms may be mentioned vertigo, eructations of gas, anorexia and nausea, but rarely vomiting. Bromide of sodium, especially when combined with a bitter liquid tonic containing nux vomica, is usually of benefit unless anemia is marked. For the flatulence and sinking sensations tincture of capsicum or cardamon, or ginger or peppermint is beneficial, and for the irritability due to hyperacidity bicarbonate of sodium and bismuth are excellent. The diet should be simple and easily digested.

PNEUMONIA IN INFANTS.

Dr. W. P. Northrup, of New York, read this paper. He gave the following as the three important diagnostic signs: (1) the change of the respiration-pulse ratio from 4 to 1 to about 3 to 1; (2) persistent fever, whether remittent, intermittent or uniform; and (3) the presence of crepitant and subcrepitant râles over a circumscribed area. The three important points in the treatment are: (1) a bountiful supply of fresh air; (2) the care of the digestion; and (3) the use of baths to stimulate the nerve centres.

MEDICAL EDUCATION; ITS RELATION TO CLASSICAL LITERATURE.

Dr. C. de la Montayne, of Port Ewen, read a paper on this topic, in which he referred to many authors, notably Holmes, Holland, Darwin and Huxley, whose work had been assisted by their knowledge of medicine.

TONSORIAL HYGIENE AND STATE CONTROL OF BARBER-SHOP SANITATION.

Dr. A. Walter Suiter, of Herkimer, in thi paper called renewed attention to the dangers lurking in the utensils of the barber-shop, and advocated the adoption in this country of regulations similar to those recently promulgated by the Board of Health of the province of Quebec.

HYDROTHERAPY IN CHRONIC DISEASES.

Dr. Simon Baruch, of New York, read this paper. He said that it was well known that cold water stimulates muscular fibre, and that when it is applied to the skin the cutaneous arterial capillaries are contracted, while the veins are unaffected. He had been able, by experiment, to demonstrate alterations in the corpuscular elements of the blood and in the hemoglobin as a result of the application of water. Strasser has shown that hydrotherapy causes a greatly increased elimination of urea and uric acid in healthy individuals. The skin is the heat-regulating organ of the body. The wide range of hydrotherapy was well illustrated by the fact that he had records embracing 100,000 treatments in neurasthenia, chloro-anemia, phthisis, gout, rheumatism, dyspepsia, certain cardiac diseases, asthma, sciatica and other neuralgias, and in neuritis.

THIRD DAY. — THURSDAY.

The following officers were elected: President, Dr. Willis G. MacDonald, of Albany; Vice-President, Dr. John Gerin, of Auburn; Secretary, Dr. Frederic C. Curtis, of Albany; Treasurer, Dr. Charles H. Porter, of Albany.

A FORM OF SUTURE FOR ABDOMINAL SURGERY.

Dr. J. P. Wilding, of Malone, in this paper described a form of silk suture, which is threaded with a needle at each end and is then inserted so as to produce a result somewhat resembling the lacing of a shoe. It gives good apposition and is removed with great facility.

THE LIMITATIONS OF SURGICAL WORK IN COUNTRY PRACTICE.

Dr. George M. McComb, of Frankfort, took up the cudgels in defence of the country practitioner, who is so commonly sneered at and frowned upon by his exalted brother, the hospital physician, on the alleged ground that he is not up to the times. The speaker showed the absurdity of the convenient doctrine now so assiduously inculcated into the lay mind that no good surgery can be done in private practice, and predicted that in the near future there would be a strong reaction against this heresy.

THE DIFFERENTIATION OF THE CHRONIC FORMS OF RHEUMATISM.

Dr. Louis Faugeres Bishop, of New York, read this paper. He said that the first differentiation should be between rheumatism and non-rheumatic inflammation of the peripheral nerves, and that the next important differentiation was between the various forms of arthritis in which the rheumatic poison is not active. Chronic rheumatism is rather a disease dependent upon the circulation in the blood of some toxic element of the nature of an infection.

THE SCIENTIFIC ASPECT OF THE MIND CURE.

Dr. S. A. Russell, of Poughkeepsie, in this paper gave instances of the influence of the mind on the human economy, and claimed that they constituted a sound basis, within certain reasonable limits, for curing disease through mental impressions.

Recent Literature.

System of Diseases of the Eye. By American, British, Dutch, French, German and Spanish Authors. Edited by William F. Norris, A.M., M.D., and Charles A. Oliver, A.M., M.D. Volume II. Examination of the Eye, School Hygiene, Statistics of Blindness, and Antisepsis. With thirteen full-page plates and two hundred and fourteen text illustrations. Pp. ix; 11 to 556. Philadelphia: Lippincott. 1897.

The fourteen chapters of which this second volume consists have been written by gentlemen whose activity in certain lines of investigation has justified their selection for such a purpose. The part which relates to the examination of the eye contains ten chapters. The first chapter, on The Methods of Determining the Acuity of Vision, is by Professor Snellen, while the second, on Mydriatics and Myotics, is by his son Herman. Professor Laqueur, of Strassburg, in the third chapter describes the method of examination by lateral illumination and by magnification. Chapters four and five, by Drs. Gould and Jackson, respectively, take up Ophthalmoscopy and Skiaskopy, and although both are satisfactory, the latter suffers somewhat when compared with a recent monograph by the author upon the same subject. Dr. Javal in the sixth has very well presented the subject of Ophthalmometry by description and by illustration; what he has written in regard to the posterior surface of the cornea may not admit of ready application, still it is none the less interesting for this reason. The personal interest felt by Dr. Dennett in the matter of prisms is too apparent to admit of contradiction.

Dr. Stevens has written briefly upon the Balance of the Extra-ocular Muscles and describes his tropometer. The ninth chapter, on Perimetry and its Clinical Value, by Dr. H. Wilbrand, of Hamburg, is a monograph of exceeding value. The method by which an examination should be made is explained, after which he describes what he considers a normal field of vision. There follows then a description of his "bed perimeter," the fields in binocular vision and in strabismus. In regard to the diagnosis of disturbances in the visual apparatus he classifies as follows: the orbital portion, the optic nerves, chiasm, tracts, primary optic centres, intracerebral tracts leading to cortical centres, and the visual centres of the cortex. This special part contains several tables, a full-page colored plate of Henschen's Scheme of Visual Paths, about sixty diagrams of fields of vision under varying conditions, and several very good diagrams illustrating the subject matter. The field of vision in functional nervous conditions and the simulation of defects in the field bring to its conclusion a treatise of such excellence as to cause the other chapters of the volume to suffer by comparison. It is not possible with the limited space at command to give a true conception of the thoroughness with which this subject has been treated.

Dr. William Thomson and Dr. Carl Weiland have written very well and to the point in their article entitled The Detection of Color-blindness. After tracing the experience of others working in similar channels from the first recorded case one hundred and twenty years ago to the present time, they conclude that, after "looking back over all the different tests mentioned, it seems that at present the best practical test for congenital color-blindness is the matching of properly colored worsteds," but where large bodies of men are to be examined with limited time at one's disposal Thomson's test is to be preferred.

Dr. Risley's article on School Hygiene will prove profitable reading for the layman as well as the practitioner, more especially as at this time some effort is being made to counteract the evil influences of many existing conditions. Much that is of great practical value regarding the arrangement and lighting of school buildings, adjustable desks and the comparative merits of vertical and slanting script is contained in this chapter.

Dr. I. Minis Hays, in discussing the Frequency and Cause of Blindness, deals largely in statistics and tables.

Dr. Andrews's paper on Antisepsis may be considered as being very well described by its title.

Drs. McFarland and Kneass are to be praised for the diligence with which they have pursued the elusive micro-organism even at the risk of committing an error of judgment. Their paper bears the stamp of the general investigator rather than the special worker, and we think that this subject of The Micro-organisms of the Conjunctiva and Lachrymal Sac would have been more satisfactorily handled by some one whose horizon is bounded by greater limitation in experience than that of the compilers of the article. They describe with great minuteness and care more than half a hundred micro-individuals, which in one form or another they have found haunting the various lurking places along the conjunctival tract, although some of them are manifestly only present by accident. Their work has been very carefully carried out, but still it seems rather too comprehensive to be included in a special publication. The satisfaction experienced by careful perusal of this second volume will cause the two remaining volumes which are to follow to be awaited with renewed interest.

Day Dreams of a Doctor. By C. Barlow, M.D. Buffalo: The Peter Paul Book Company. Pp. 251. 1898.

This book is a collection of sketches of many circumstances connected more or less closely with a doctor's life. In it are discussed surgery, neurology, insanity, woman, the woman doctor, the general practitioner, etc. None of the essays have the true ring of literary excellence. They are labored attempts, for the most part, which, we are free to confess, might better have been left unwritten. To do such work well requires a very special aptitude, which is conspicuously lacking in our author. To few of us is it permitted to wander with success into purely literary fields.

The volume is beautifully printed and most attractively bound, but we venture to suggest that its range of circulation will be small.

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283 WASHINGTON STREET, BOSTON, MASS.

THE BILL TO AUTHORIZE THE PRACTICE OF OSTEOPATHY.

As many of our readers know, there is at present pending before the legislature a bill seeking to legalize the practice of so-called "Osteopathy," and to demand for it recognition by the State Board of Registration. To this end a hearing has been held at the State House, and a second one is announced to be held on the twenty-eighth of this month. We would strongly urge that this event be not allowed to pass unnoticed, and that physicians who have the welfare of their profession at heart may appear as remonstrants in such number as to render impossible the future passage of the bill.

The practice of "Osteopathy" has grown insidiously and from small beginnings. Its founder was a Dr. A. T. Still, who many years ago, convinced of the inefficiency of drugs, began his search for a new plan of cure, with the result that in 1889 he announced that he had perfected his system, which he termed "Osteopathy." From this has grown a school of practice, which has gradually spread over the country, and is everywhere claiming adherents among that class in the community which is ever ready to grasp old ideas in new garb, and which is always a menace to progress in our freethinking communities.

The fundamental principles of this "new" science we quote from certain of the sect's own publications: "Health is natural; disease and death, between the time of birth and old age, are unnatural. All bodily disorders are the result of mechanical obstruction to the free circulation of vital fluids and forces." Later on in the same pamphlet we learn that "osteopathy has nothing in common with faith cure, Christian Science, spiritualism, hypnotism, magnetic healing, Swedish movement, mental science, or massage. There is nothing supernatural about it. Its apparently marvellous cures are accomplished through purely scientific methods, based upon a profound knowledge of the human mechanism." "In massage the operator rubs and pats the nude body at random, often without any knowledge whatever of anatomy, and expects results simply because such vigorous stirring up of the surface of the body has proven beneficial in some other case. The osteopath, however, treats the patient through loose clothing, his hand rarely coming in contact with the flesh, except about the head and neck. He does not rub or pat, but manipulates osteopathically, etc." Later on in the same paragraph we are informed that "The diagnosis is largely through the sense of touch, which is developed to its highest perfection. As the fingers of the blind are trained to read the letters of the alphabet through several thicknesses of cloth, so the fingers of the osteopath passed over the surface of the body seldom fail to detect the slightest dissarrangement of the human mechanism. He not only knows how the body looks when the anatomy is normal, but also how it feels."

These are a few of the claims; they need no special comment. It must not be supposed, however, that it is only chronic conditions which yield to the magic of the osteopath's touch; he is quite equal to the treatment of any acute process, as an example of which we will merely take diphtheria. We quote again from the pamphlet before us: "Osteopaths contend that diphtheria is caused by contraction of the muscles of the neck and thorax, as well as by those of respiration. These interfere with the circulation and produce inflammation of the larynx, bronchial tubes and throat. This disease, even in its most malignant forms, succumbs to osteopathy."

We certainly need quote no more. The sect which proclaims these doctrines as a new and potent influence for good in the community is demanding recognition and representation in the Board of Registration, which was organized to help in the suppression of just such movements. We cannot for a moment believe that a theory of practice which claims to diagnosticate all disease by touch and to cure acute infections by manipulation will be allowed the slightest recognition in the State through its representatives in the legislature. The petitioners, we understand, have expressed their willingness to take the State Board examinations, provided only they be exempt from surgery and the practice of medicine. It is not necessary to enlarge upon the real menace to the community which would come through the legitimation of such a school as this. It would be a retrograde step of the most disastrous sort both as regards the health of the people and the significance of the Board of Registration. We cannot, therefore, too strongly urge upon all those who look forward to the gradual advancement of medical ideals to take a firm stand against what threatens to be a most flagrant piece of legislation.

THE CAVENDISH LECTURE. — We learn from *Science* Prof. William Osler, F.R.S., has accepted an invitation to deliver the Cavendish lecture for 1899 before the West London Medico-Chirurgical Society.

AMATEUR PRESCRIBING.

It is said that during the last sickness of the late General Grant hundreds of letters weekly were received from non-professional prescribers — from all parts of the Union — suggesting infallible cures for his complaint. Every noted personage has had a similar experience, and it is said that much gratuitous advice from well-meaning strangers was offered to the Prince of Wales when recently confined to his room by a fractured knee-pan. In fact, the tendency to offer medical advice to everybody who is in any way sick is almost universal, — whether you have a cold, an inflamed eye or a sore throat, — on the cars, in the street, at the club, there is always at hand some amateur doctor to prescribe. We learn from Herodotus[1] that the ancient Babylonians habitually entrusted their sick to the care of amateur prescribers. "They bring their sick to the market place, for they do not employ physicians. The passer-by approaches the patient and questions him concerning the sickness with which he is afflicted, to know if he himself has suffered in the same way or has seen any one so suffer. All those who go and come confer with him and suggest the remedy which has cured them of the same disease, or which to their knowledge has cured others similarly affected. No one is permitted to pass by the patient without interrogating him concerning his sickness."

It would seem that the Babylonians have had many successors in all ages, some of whom, like Lord Bacon and John Wesley, were truly great in almost everything but medicine. Among the amateur doctors a prominent place must be given to retired clergymen, quondam nurses and wealthy *matres familiarum.*

At the present day, when science has made such advances, when the limitations of the healing art are so well recognized, and the necessity of careful diagnosis as a preliminary to intelligent therapeusis is everywhere acknowledged, it would be natural to expect that random, haphazard prescribing would be an exceptional occurrence. Unfortunately, it is not so exceptional as might be wished. In this connection we might make a strong indictment against some nurses and many apothecaries. The former should be a real help to the physician and co-operate with him in measures designed for the comfort and restoration of the sick; but where the nurse assumes the functions of the doctor as well as of the nurse, she may become a hindrance and a nuisance. We are speaking of rare instances — we believe that generally the nurse (and we particularize the trained nurse) is true to her profession and loyal to the physician.

A heavier indictment could be made against certain apothecaries. We believe that we allude to only a minority. We know what we are saying when we affirm that there are apothecaries who do a brisk counter trade, prescribing for all sorts of ailments and furnishing remedies, the advice being generally gratuitous, while a good price is charged for the medicines. The public think that a man who deals in drugs must know all about them. And the apothecary, believing that he has at hand specifics for every physical ill, applies this knowledge to his personal gain, often assuming severe responsibilities. In every town of any considerable size there are apothecaries who eke out their earnings from the soda fountain, from patent medicines, tooth-brushes and cosmetics — by counter practice. It is said that many "customers" prefer this way of being treated as being more economical — they save the physician's fee. Have you a headache? Try Mr. ———'s Migraine Tablets. Have you a sore throat? The same druggist will sell you a bottle of the famous "Pharyngeal Tablets"— twelve gargles for a quarter. Have you constipation or biliousness? He will sell you for fifty cents his "Hepatic Stimulant Compound," put up in half-pint bottles with the druggist's name blown on the bottle. We hardly need comment on the evils and abuses here mentioned — that they exist, every physician in active practice will attest. He knows that perhaps as many cases of venereal disease are treated by druggists annually as by physicians — the dangers of such treatment, where large doses of mercury are given for a long time by a dispenser of drugs who has had no clinical experience or medical education and suitable training, are sufficiently obvious. A fearful example of the evils of amateur practice is to be found in the case of a vicar of an English parish. Among his parishioners were a mother and daughter in rather poor circumstances. The former was paralytic, and the daughter, who was her sole nurse and attendant, wheeled her around in a chair. Finally the daughter's health broke down; the vicar prescribed for her, and admittedly caused her death.[2]

A writer in a recent number of the *Westminster Review* strongly sets forth the fallacies and mischief of amateur medicine. Failures to make the distinction between symptoms and diseases or between the different stages or degrees of a disease, or to note peculiarities of constitution, are sufficiently obvious pitfalls. The syllogism employed is something like this: "My friend had a headache and was cured by iron; I have a headache, therefore I shall be cured by iron." But headache is not a disease; it is a symptom, and occurs in a large number of diseases, of which congestion of the cerebrum and anemia may be taken as examples. When the name of the disease is substituted for that of the symptom the syllogism becomes nonsense, thus: "My friend had anemia and was cured by iron; I have hyperemia of the brain and, therefore, shall be cured by iron."[3]

The temerity of the amateur in attempting to make a working diagnosis is really astounding when we consider all that in this modern day is implied in the realization of an accurate diagnosis! Even assuming that the diagnosis is correct, another fallacy confronts the amateur — the fallacy of stage. The treatment proper to one stage of a disease may be useless or injurious in another. Each of the three stages of a burn requires special treatment, and applications suitable for the dry stage of an eczema are not suitable for the moist stage and the stage of thickening. This source of error eliminated, a further fallacy lies in the possible presence of some concurrent affection which may necessitate modification of treatment. To ignore this point may be dangerous to life. In short, the path of the amateur doctor is beset with pitfalls ready to receive both him and his patient.

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[1] Herodotus, Book I, cxcvii.

[2] Westminster Review, January, 1899, p. 70.

[3] Loc cit., page 71.

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MEDICAL NOTES.

Influenza in Scandinavia. — According to official returns, there are 2,342 cases of influenza in Christiania. During one week the deaths from the disease are said to have numbered 198. There were, at Stockholm, 3,194 cases, and 229 of these were fatal in one week.

Congress asked for a Psychopathological Laboratory. — The following amendment to the Sundry Civil Bill has been introduced in Congress:

> *Bureau of Education.* — For a Psychophysical Laboratory and for the collecting of sociological and abnormal or pathological data, and for necessary printing, including special reports on results of work, $10,000.

It is to be hoped that Congress will grant the appropriation for so desirable an object.

"Embalmed" Beef. — The *N. Y. Medical Journal* thus expresses itself on the beef controversy: "Another yellow-journal bubble seems to have collapsed. An investigating board, one thoroughly desirous of getting at the facts, has come to the conclusion that there was nothing about the canned beef furnished to the army during the late war to justifying its being called 'embalmed.' Soldiers will have their jokes, however, and probably some of the beef was not inviting. We believe that this was due to some imperfection in canning that may yet be discovered and in the future avoided. The purveyors were in no way to blame."

BOSTON.

Acute Infectious Diseases in Boston. — For the week ending at noon, February 21, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 41, scarlet fever 33, measles 164, typhoid fever 3.

The New Amphitheatre at the Boston City Hospital. — The first public operations in the new Amphitheatre of the Boston City Hospital will take place on Friday, February 24th, at 11 a. m. Operations will be performed by Drs. D. W. Cheever, Geo. W. Gay, W. P. Bolles and Abner Post. A reception given by the trustees in the new surgical building on Monday, February 20th, was largely attended, many availing themselves of the opportunity to inspect the new buildings and their admirable equipment.

Dr. Richardson's Case of Gastrectomy. — The patient upon whom Dr. M. H. Richardson performed gastrectomy last June (case reported in the *Boston Medical and Surgical Journal* of October 20, 1898), died February 19, 1899, with a complete stenosis of the colon at the splenic flexure. The obstruction was caused by an infiltrating carcinoma, which involved also the small intestine. The first symptom of obstruction occurred about the middle of November. The case will soon be reported in full.

NEW YORK.

Females and Capital Punishment. — At the February meeting of the Medico-Legal Society, held on the 16th ult., a resolution was adopted to the effect that it was the sense of the Society that the question of sex of the criminal convicted of homicide should be eliminated from the consideration of the Executive in the exercise of the pardoning power. This action was taken in consequence of the Court of Appeals having refused to interfere in the case of Mrs. Martha Place, now under sentence of death for the murder of her step-daughter in Brooklyn. The only speaker who was opposed to the resolution was Dr. T. D. Cruthers, of Hartford, Conn., who expressed the opinion that capital punishment in the case of females would have no deterrent effect upon other women.

The Oldest Dispensary in New York. — The Demilt Dispensary, the oldest but one in the city, has issued its fifty-eighth annual report. In commenting on the statistics of the institution for the year 1898 the Board of Managers say: "It is a gratifying fact that the decrease in the amount of our work in the past year is again attributable only to the improved condition of the health of the city."

A Case of Triple Personality. — The Pathological Institute of the New York State Hospitals for the Insane has recently reported a case of great scientific interest, with admirable practical results, occurring in the department of the institute devoted to psychology and psychopathology. The case is a remarkable one of amnesia, the patient being a clergyman, about twenty-six years old, who fell out of a wagon, and, striking upon his head, became unconscious. When he recovered from the stupor it was found that he had completely lost his memory and that his personality was lost with it. His mental condition was that of an infant, and in the course of education to which he was subjected he developed a new personality, totally different from the old. He next manifested the phenomena of alternating personality, for instance, falling asleep in his secondary personality, and awaking in possession of his primitive personality, and *vice versa*. Neither personality was at all conscious of the other. The patient thus had two consciousnesses, which he possessed at different times, but between which there was absolutely no communication. The problem was how to unify this double consciousness. This was attempted by preventing him from lapsing into profound slumber, keeping him in a condition between sleeping and waking, and the result proved successful. As a consequence he developed a third personality, which was conscious of the other two personalities, and this finally filled every gap in his memory. Dr. Van Giesen, the director of the Pathological Institute, naturally regards the case with great satisfaction and expresses the opinion that it shows a decided advance in the domain of psychology.

Miscellany.

THE NEW RIFLE FOR USE IN THE NAVY.

In the last number of the *Journal of the Boston Society of Medical Sciences* Dr. Henry G. Beyer, U. S. N., records in detail the results of his experiments on the effects on various objects and tissues of the six millimetre rifle and projectile. In view of much recent discussion on the so-called humane bullet the following passages are of interest:

"From the accounts of the injuries on bones we find that the injuries produced by the highest velocities are simply terrible, and those produced by the lowest far from benign. Although the injuries which have been described in the preceding pages as occurring under different and varying conditions of experimentation on animal structures and organs cannot be directly applied to the living human subject, they have been selected from a very large number, and will be found of material value. It is not within the scope of this paper to draw any very detailed and far-reaching conclusions as regards the treatment of the injuries as they are likely to occur in the human subject, but, whatever else may be brought to light by future experimentation on the human cadaver or by accidents occurring either during peace or on the field of battle and produced by our projectile, one thing is certain, namely, that the explosive zone has been extended and its penetrative power lessened, owing to the softness of the jacket and the consequent ease with which the bullet is deformed when striking bones or other hard substances.

"It may be assumed with a fair show of reason that such injuries as will probably be produced in the human subject by our projectile will influence the methods of treatment both in the rear of the fighting-line and in the hospitals afterwards, in that they will require the treatment laid down for 'near-shots' (Nahschüsse), that is to say, they must from the very beginning be treated as infected injuries. Owing to the further fact that the projectile often goes to pieces, portions of its copper jacket and of its lead lining the track, we may reasonably expect that amputations will have to be done more frequently, and that the percentage of mortality will be higher, no matter how well equipped the hospital or how skilful and experienced the surgeon."

ANTIVIVISECTION IN THE DISTRICT OF COLUMBIA — A REPLY FROM SURGEON-GENERAL STERNBERG.

The following letter from General Sternberg in answer to an antivivisectionist document is worthy of publication:

Washington, February 13, 1899.

Hon. James McMillan,
Chairman Committee on District of
Columbia, U. S. Senate:

Sir, — I have the honor to request, as a matter of justice, that the following brief statement may be published as a "document" in connection with Senate Bill No. 1063, in reply to certain allegations reflecting upon me personally in Senate Document No. 78.[1]

The fact is recognized by well informed physicians throughout the world that the great progress made by scientific medicine during the past thirty years has been to a great extent due to experiments upon the lower animals, and that our exact knowledge with reference to the cause and prevention of infectious diseases of man and domestic animals is based largely upon inoculation experiments — made for the most part upon small animals, such as mice, guinea-pigs and rabbits.

Those who have engaged in such experiments insist that the pain attending the inoculation is trifling and does not call for the administration of an anesthetic. But no one, so far as I know, has ever denied that as a result of such inoculations there may at times be more or less pain. To give an anesthetic to an inoculated animal during the time it is under observation to determine the result of the experiment would entirely neutralize the value of the experiment, and a law requiring this would effectually arrest all investigations of this kind.

Dr. Leffingwell in Document 78 has referred to certain experiments upon rabbits made by me in the laboratory of the Johns Hopkins University nearly twenty years ago. Those experiments resulted in a very important scientific discovery — that of the germ of pneumonia. If Dr. Leffingwell had consulted a modern text-book of bacteriology he would have found that in the experiments referred to the fatal result in the rabbits experimented upon was due to the accidental presence in my salivary secretions of a pathogenic micrococcus which has since been proved to be the usual cause of inflammation of the lungs. Also that it has since been found temporarily present in the salivary secretions of many other healthy individuals as well as in the pulmonary secretions of persons suffering from pneumonia. Dr. Leffingwell's incomplete account of my experiments and his incorrect statement as to the cause of the death of the rabbits experimented upon have been published in the daily newspapers with a view to presenting me to the public as a man of cruel instincts, and also as one who carried in his mouth "a venom more deadly than that of the viper or the rattlesnake." Both allegations are false. If I had hunted rabbits with dogs there might have been some foundation for the charge of cruelty. But no one has proposed that the Congress of the United States shall legislate to prevent the wounding and killing of animals for sport, while my experiments made in the interest of science and of humanity are characterized by Dr. Leffingwell and his associates in this crusade against scientific investigation as cruel, and an effort is being made to convince the Senate of the United States that the Government laboratories in this city should be placed under surveillance other than that of the Bureau officers who under present laws and regulations are in charge of them.

Very respectfully,
(Signed) Geo. M. Sternberg,
Surgeon-General, U. S. Army.

Obituary.

ALFRED T. HUNTINGTON, M.D.

The following notice of the late Dr. Alfred T Huntington was written by one of his fellow house officers as an expression of the regard in which he was held by the other members of the staff of which he was a member:

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[1] Senate Document No. 78, presented by Mr. Gallinger, entitled, Statement of Dr. Albert Leffingwell, of New York, being a Critical Examination of Various Objections made to Senate Bill No. 1063, and other Papers and Facts Relating to the Subject of Vivisection.

With profoundest regret and sympathy we record the sudden and unexpected death, on February 13, 1899, of Dr. Alfred T. Huntington, Medical House Officer at the Boston City Hospital. Taken ill with symptoms of grippe only a little more than a fortnight ago, the sickness culminated in a rapidly fatal pneumonia. He was in the midst of active work, enthusiastic, and devoted to his chosen professional duties, when smitten by disease. Of most excellent habits and in apparently perfect physical condition, the news of his death is startling to all.

His degree of medicine, *cum laude*, had been received in June, 1898, from Harvard University, and the outlook was most promising for a useful and brilliant career. Recently, he had been admitted to membership of the Massachusetts Medical Society. Many friends will bemoan the loss of this faithful and earnest young man. Unobtrusive and unassuming to a marked degree, yet he leaves a wide circle who will miss the cheering influence of his personality.

Courteous, affable and amiable always, thoughtful and lenient, he was instinctively a refined gentleman. Integrity, sincerity of purpose, loyalty to friends and every honest cause, devotion to his work, kindness and generosity, are the characteristics which we hold in memory of our departed friend. W. E. C.

Correspondence.

MEDICAL REALISM IN FICTION.

Boston, February 19, 1899.

Mr. Editor: — Doctors are constantly deploring the inaccuracy with which medical topics are at present handled in fiction, and only recently somebody from the ranks of medical journalism has ventured to predict that *the* novel of the future, the one toward whose advent physicians look so longingly forward in the hope of finding it true to nature in every detail, will come from the pen of one of their own guild. In this prediction we could see a decided leaning toward realism on the part of the person who uttered it and it has led to much serious thought on our part as to what a preponderance of the realistic tendency in a medical writer might lead. The studies in sexual psychopathy and moral imbecility which have already come to us from the French school of what we may term "lay" realists, at whose head Zola stands pre eminent, are certainly realistic, but, we fear, a trifle overgamey, so to speak, for intellectual palates accustomed to the wholesome pabulum from the pens of most American or English authors of note. Some few of us are interested perhaps to know that the sexual hyperesthesia of the average French heroine can be directly traced to certain genital abnormalities in the person of her paternal great-grandfather and that in France generally the seat of the female soul is allocated by novelists to the pelvis. But this cannot awaken a widespread interest, and we shudder to think of the effect on the reading public at large of what the genuine "medical" realistic novelist might do in this line with an abundance of clinical and pathological data at his command.

What a wave of disillusion would go over the country! We have always admired, and some of us have envied, the full, swelling throat of fair Angelina so enticingly displayed to us through the medium of the décolleté gown, and have shared in the ineffable pleasure with which Ethelbert, as they sit together in the conservatory, watches the tumultuous heaving of her bosom while he pours into her listening ear the declaration of his undying love and devotion. Would we be any more satisfied, we ask, to have it forced upon our attention by the medical realist that the object of Ethelbert's affection presents, in the swelling throat and quick-throbbing heart, two of the cardinal symptoms of goitre? Because Rosamund is tall and fair as the lily and has a penchant for syncope, do we care to know that she has poikilocytes and granular masses coursing in her veins, and that her percentage of hemoglobin is far below the average? Are we any better off for discovering that the delicate rose-bloom on the cheek of sweet Evalina is accompanied by an evening rise of temperature and night-sweats? We trow not. We have often noticed that peculiar little turn of the head so habitual with Edwina when she is reading, in fact we thought it lent a sort of piquancy to her pose, but the poetry would all fade out of it in an instant were we to be told that it is due to eight degrees of esophoria and an astigmatism against the rule.

Imagine the pang of anguish that would pierce our heart were we to learn that sweet little Eddie, whose cunning baby ways have captured our affections and whose massive head and noble brow we fondly imagine to indicate a career of state-craft or of letters, has rickets and hydrocephalus!

We feel that we would be driven to the verge of tears if it were to be revealed to us that charming Mrs. Swanly's graceful, bird like habit of alighting upon her chair was the outcome of hemorrhoids, or that the poise of manner we so much admire in dear old Mr. Gracely was the result of hydrocele.

Would all these atrocious shocks to our sensibilities be made up for in the joy we should feel on learning that the wicked Count, whom Vaseline's hard-hearted father is determined she shall marry against her will, has arteriosclerosis and a badly hypertrophied heart, or in the satisfaction we should experience when we discovered at autopsy that poor little fair-haired Willie, who has pined away before our very eyes and died so mysteriously, had a generalized tuberculosis, and really could not have been saved? We doubt it most seriously. And yet we feel that in the pediatric department of novel writing the medical realist is really capable of accomplishing much good. We have elsewhere alluded to the poor fibre and precarious tenure of life which characterize the ordinary child of fiction, and have pointed with much concern to the actually threatening danger of extinction of this portion of the inhabitants of novel land. Here, then, let the medical realist go to work and make a name for himself. Let him warn Angelina that Ethelbert, to whom in her innocence she has promised her hand, has not escaped unscathed from certain amorous encounters of which he naturally keeps her in ignorance, and that the offspring of a luetic and goitrous union bids fair to be far from robust. Let him gently, but firmly, caution Evalina that marriage should not be for her, inasmuch as it would not add to the gayety of novel-reading nations to follow the clinical career of the beautiful, but strumous, children she would probably bring forth. Even the offspring of fancy demand a fair start, and it is for the medical novelist to see that they get it. With this and a diet of mother's milk, as little modified as possible by five-o'clock teas and similar orgies, we think there is hope for them. But they must be watched carefully up to the age of ten or twelve, which we may term the danger-period in fiction. During this time we should hear of them only incidentally; say, for instance, as the mother bends lovingly over their sleeping forms and listens to their quiet, regular respirations, or when they come trooping home from their play with healthy flushes on their happy faces.

It is to the demand for this sort of realism that the medical novelist should cater. Until it is supplied we shall have to content ourselves with the well-known flabby offspring of the author's imagination — the kind that we are forever encountering in the drawing-room of an evening, when they ought to be in bed, and in whose veins we instinctively feel that there is constantly lurking the seeds of one of those mysteriously fatal diseases so peculiar to the altogether weird nosology of fiction.

Yours very truly,
Cynicus.

METEOROLOGICAL RECORD

For the week ending February 11th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....5	30.16	20	25	15	58	86	72	N.W.	N.W.	7	5	O.	O.	.04
M...6	30 09	24	29	20	79	48	64	N.	E.	8	3	O.	O.	
T....7	29.96	24	27	20	92	90	91	N.	N.E.	15	8	N.	N.	.15
W...8	29.48	20	30	11	91	86	88	N.E.	W.	27	10	N.	C.	.22
T....9	29.79	8	17	0	58	71	64	W.	S.W.	20	24	C.	C.	
F...10	30.11	4	10	-2	60	51	56	W.	W.	21	24	C.	C.	
S...11	30.44	4	11	-4	55	45	50	W.	W.	20	15	C.	F.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, February 11, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping-cough.	Diphtheria and croup
New York . .	3,438,899	1259	401	7.84	22.80	1.20	.72	3.12
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	229	56	3.08	20.24	—	.88	1.32
Baltimore . .	506,389	209	71	4.80	17.58	.48	—	2.40
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	110	38	12.74	19.11	—	4.55	.91
Washington .	277,000	126	32	4.74	25.28	—	—	3.16
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	65	21	6.16	30.80	3.08	—	1.54
Nashville . .	87,754	41	11	—	3.08	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	108,240	39	10	5.12	20.48	—	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	25	7	4.00	16.00	4.00	—	—
Lowell . . .	88,641	36	10	5.51	5.54	2.77	—	—
Lynn	66,703	—	—	—	—	—	—	—
New Bedford .	66,340	27	13	3.70	7.40	—	—	3.70
Somerville . .	61,101	10	2	—	30.00	—	—	—
Lawrence . .	57,263	22	13	16.60	8.30	—	4.15	—
Springfield .	56,501	15	4	—	46.66	—	—	—
Holyoke . . .	43,424	11	3	36.36	—	9.09	—	9.09
Brockton . .	37,278	—	—	—	—	—	—	—
Salem	36,883	10	2	—	30.00	—	—	—
Malden . . .	34,613	12	—	—	16.66	—	—	—
Chelsea . . .	33,468	11	2	—	—	—	—	—
Haverhill . .	32,022	15	—	20.00	20.00	—	—	6.66
Gloucester . .	30,589	10	3	20.00	—	—	10.00	—
Newton . . .	29,716	9	—	—	—	—	—	—
Fitchburg . .	29,438	11	2	—	9.09	—	—	—
Taunton . . .	28,167	10	—	10.00	20.00	—	—	—
Everett . . .	25,338	5	—	—	—	—	—	—
Quincy . . .	23,549	9	3	22.22	22.22	—	22.22	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	4	2	—	25.00	—	—	—
North Adams .	20,971	4	2	—	50 00	—	—	—
Chicopee . .	17,842	4	1	—	25.00	—	—	—
Medford . . .	16,511	4	3	—	25.00	—	—	—
Newburyport .	14,915	—	—	—	—	—	—	—
Melrose . . .	14,032	6	2	—	50.00	—	—	—

Deaths reported 2,378; under five years of age 723; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 162, acute lung diseases 507, consumption 264, diphtheria and croup 59, diarrheal diseases 21, whooping-cough 21, typhoid fever 20, scarlet fever 16, cerebro-spinal meningitis 10.

From typhoid fever Pittsburg 8, New York 5, Baltimore and Haverhill 2 each, Washington, Lawrence and Taunton 1 each. From scarlet fever New York 13, Baltimore 2, Marlborough 1. From cerebro-spinal meningitis New York 3, Worcester and Holyoke 2 each, Boston, Washington and Gloucester 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending February 4th, the death-rate was 19.5. Deaths reported 4,275; acute diseases of the respiratory organs (London) 348, whooping-cough 98, diphtheria 87, measles 64, fever 34, scarlet fever 31, diarrhea 26.

The death-rates ranged from 11.0 in Croydon to 27.2 in Sunderland; Birmingham 22.2, Bradford 16.6, Brighton 13.1, Cardiff 15.7, Gateshead 24.5, Hull 14.5, Leeds 18.8, Liverpool 25.2, London 19.4, Manchester 23.2, Newcastle-on-Tyne 23.5, Nottingham 17.6, Sheffield 20.8, West Ham 15.5.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING FEBRUARY 16, 1899.

L. L. Young, passed assistant surgeon, sick leave extended three months.

J. H. Payne, assistant surgeon, detached from the "Marcellus" when put out of commission, and ordered home.

C. P. Kindleberger, passed assistant surgeon, relative rank of lieutenant, junior grade, from July 9, 1897.

J. H Payne, assistant surgeon, ordered to temporary duty on the "Franklin," when detached from the "Marcellus."

D. F. Sughrue, assistant surgeon, honorably discharged February 14th.

RESIGNATION.

F. H. Davenport, M.D., has resigned his position of assistant surgeon to the Free Hospital for Women in Brookline.

APPOINTMENT.

F. H. Davenport, M.D., has been appointed consulting surgeon to the Free Hospital for Women in Brookline.

RECENT DEATHS.

Alfred Thomas Huntington, M.D., M.M.S.S., died in Boston, February 13, 1899, aged thirty-one years.

Charles A. Tufts, M.D., died at Dover, N. H., recently, aged seventy-seven years. He represented his district in the State Senate in 1861-62, and was during a long period of his life prominent in the political life of Dover. He was a graduate of Dartmouth Medical College and of the Massachusetts College of Pharmacy. He received the honorary degree of A.M. from Dartmouth.

James Etheridge, M.D., professor of gynecology at Rush Medical College and one of Chicago's oldest practising physicians, has recently died, at the age of fifty-five. He was a member and former president of the Chicago Medical Society, the Chicago Medico-Legal Society and the Gynecological Society, and was president of the last-named society in 1890.

BOOKS AND PAMPHLETS RECEIVED.

First Annual Report, University Hospital, Kansas City, Mo.

Some Preventives. By A. Jacobi, M D., LL.D., New York. Reprint. 1898.

Twenty-first Annual Report of the Board of Health of the City of Lowell for the year 1898.

A Case of Malta Fever. By J. H. Musser, M.D., and Joseph Sailer, M.D., Philadelphia. Reprint. 1898.

The Milk Supply of Cities: Can it be Improved? By Henry O. Marcy, A.M., M.D., LL.D., Boston, Mass. Reprint. 1898.

The Manual of Massotherapy; The Use of Massage Rollers and Muscle Beaters. By W. E. Forest, B.S., M.D., New York.

Some Sources of Failure in Treating Lachrymal Obstructions. By Leartus Connor, A.M., M.D., Detroit, Mich. Reprint. 1898.

Practical Points in the Administration of Chloroform and Ether. By J. Bennett Morrison, M.D., Newark, N. J. Reprint. 1898.

Mechanical and Surgical Treatment of Fractures of the Neck of the Femur. By Arthur J. Gillette, M.D., St. Paul. Reprint. 1898.

Twentieth Annual Report of the State Board of Lunacy and Charity of Massachusetts, January, 1899 Boston: Printed by the State. 1899.

Transactions of the American Climatological Association for the year 1898. Volume XIV. Philadelphia: Printed for the Association. 1898.

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Volume LXXXI. Second Series, Volume LXIII. London: Longmans, Green & Co. 1898.

Original Articles.

ON THE ABSORPTION OF IRON.*

BY A. E. AUSTIN, A.M., M.D.,
Professor of Medical Chemistry, Tufts College Medical School.

If we turn our attention to the medicine of the last hundred years we shall find one drug at least which has always possessed the confidence of both patient and doctor — iron; every form has had its adherents — sulphate, citrate and chloride, iron springs and iron baths. Hence, had any one of scientific attainments declared twenty years ago that inorganic iron was unabsorbable, and passed through the intestinal canal like so much cellulose, absolutely incapable of being assimilated, that person would have been considered a heretic of the worst sort. Since the investigations of Bunge at about that time our faith in iron has been somewhat shaken, as evinced by the various preparations which have been placed upon the market not only by manufacturing druggists, presumably for their own profit, but also those devised by thoroughly scientific men, like Schmiederberg and Kobert. At the present time, however, there are numerous investigators who have succeeded in convincing themselves that inorganic iron is unabsorbable by the uninjured intestine and can only be taken up when, by its corrosive action, it has succeeded in so irritating the mucous membrane of the intestine that absorption becomes an easy matter. Since this substance, then, is found in all the cell nuclei of the body, and forms such an important part of hemoglobin, — the oxygen carrier of the body, — it does not seem either fitting or just that such an important matter should be left to mere empiricism in this age of scientific medicine. If we examine the food stuffs with which ordinary mortals are nourished we shall find that not one atom of inorganic iron is ever found there. Milk, yolk of egg, meat, all possess iron, but in an organic form, and this in health must supply all the needs of the body. In our efforts to imitate the iron of the body we have combined iron with various organic substances — with albumin to form albuminates, with peptone to form peptonates, with alkali-albumin to form the so-called "ferratin," and with meat extract to form that preparation known as "carniferrin."

But in all these preparations the cloven foot still appears, and with sulphuretted hydrogen a black heavy precipitate can be thrown down of sulphide of iron, a sure proof that the inorganic iron has not changed its true nature by reason of its new running mate, albumin. According to Bunge[1] this precipitation with sulphuretted hydrogen is absolutely impossible with organic iron, and it is only possible to procure a weak green coloring with his preparation from yolk of egg, called "hematogen," after a long period of waiting. He finds also that acidified alcohol can remove every vestige of iron from these artificially prepared so-called organic irons, while it has not the slightest effect upon the true organic iron. Hence we cannot regard these peptonates, albuminates and salts of organic acids other than inorganic irons, though there can be no question that they are far less irritating than the usual forms. Socin[2] has rendered it probable by his experiments that this form of organic iron procured from the yolk of egg is absorbable. He first fed a dog upon meat, examining his urine in the meantime for iron; under these circumstances, the amount of this metal found was only a trace. So soon, however, as he began to give the dog yolk of egg abundantly the amount of iron in the urine rose to twelve milligrammes in forty-eight hours — a fact only explainable by the probability that the body had temporarily absorbed more iron than it could utilize, and hence the excess was eliminated by the kidneys. What was still more startling was the fact that the iron in the urine was still in an organic form, showing that worn out and useless iron of the body fails in any way to change its nature. It appears, therefore, a very simple matter to determine whether an iron is being absorbed: merely determine the amount of iron taken in and the amount found in the feces; the difference must be the amount absorbed. But unfortunately it has been found that sometimes the amount eliminated exceeds the amount taken in[3]; this can be explained only by the possibility that the iron absorbed but not immediately needed for the requirements of the body is eliminated not only by the kidneys but by the mucous membrane of the intestines, carried thither by the blood. It is also well known that carnivora, which live largely upon other animals, must take large amounts of oxyhemoglobin in their food, which is easily split up by the gastric and pancreatic juices into albumin and hematin.

The vital point for us is, then, can this hematin be absorbed and utilized by a synthetic process for the renewed formation of hemoglobin? Have we not here the basis of iron medication? This seems an ideal field in which to work, but, as ever, when a field is newly worked there is a division of opinion. According to M. Cloetta,[4] there does not seem to be any special tendency upon the part of the economy to take possession of this hematin and store it up in case of need. Hematin is also found largely in the feces after taking food containing hemoglobin. Recently, however, Kobert[5] has claimed that after taking hematin and hemoglobin there is a large increase in the amount of iron in the urine to be observed. Neumeister is inclined to question whether this is not accidental on account of the very slight increase in proportion to the amount of the metal found. We have, of course, to meet the clinical experience of physicians who say, and say with all the convictions of their observations, that they have seen vast improvement follow the use of inorganic iron, but they never stop to consider how much of this improvement was due to hygienic agencies, such as improved diet, fresh air, exercise, etc.

Theoretically it is not such a wild supposition that the body may, by a synthetic process such as that by which albumin and phosphoric acid are combined to form nuclein, unite the iron salts with albumin to form hemoglobin; but iron is always present in our food, and it seems to be a lack in the hemoglobin-forming powers of the body and not in a want of iron which produces anemia. It is, on the contrary, very improbable that the body possesses this by no means simple power of synthesis, a power which under normal conditions lies wholly outside its functions and is only exercised under these changed conditions, producing anemia, nor can it be supposed for a moment that the body can acquire this power whenever called upon. Hence the employment of inorganic iron for the building of hemoglobin has from this standpoint very little of value for us;

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* From the Chemical Laboratory of Tufts College Medical School.

thus the matter finally comes to this point, that, outside of the claimed curative power of inorganic iron against chlorosis, we have absolutely no facts which lead us to believe that this form of iron has any fitness for a hemoglobin builder. Many authors have also doubted whether such iron is ever absorbed by an uninjured intestinal mucous membrane. The poisonous nature of iron, when injected subcutaneously, and hence actually in the circulation, can not have escaped our attention. If we inject these iron salts, even in a non-corrosive form, into the blood, we obtain all the symptoms of a metallic poison — sinking of the blood pressure and acute paralysis, often followed by parenchymatous nephritis[6]; on the contrary, not one of these symptoms is noticed when iron in large quantities is taken into the stomach. Again, if iron be taken by the mouth, we see no increase of iron in the urine, but if it be injected subcutaneously, it soon appears in the urine and in the same form in which it was given. Both these circumstances enhance the impossibility of its absorption.

Two considerations now present themselves to us: are there any other means for the elimination of iron beside the urine and feces? and is there any receptacle in the body in which the iron may be stored up in order to be eliminated later? It has been shown that the bile, of which one first thinks, contains altogether too small a quantity of iron, that it could ever become a means of elimination, so that in all experiments it may be practically neglected in our estimations. The liver may, however, store up iron in exactly the same way that it would mercury or copper, in order to remove it from the blood where it has been absorbed through a lacerated intestinal mucous membrane and eliminate it afterwards, but no proof has ever been brought forward to show that this iron has ever been an integral part of the hemoglobin of that blood.

In spite of the difficulties encountered by other investigators in settling this perplexing question it seemed worth while to make an effort which would, as far as possible, avoid the obstacles met with by others, and while, perhaps, not convincing, at least shed some light upon this problem. At first it was necessary to decide upon some form of organic iron which would serve as a means of comparison with inorganic salts, and a preparation of hematin procured from blood was selected which contained by analysis exactly .0049 per cent. iron; as a representative of inorganic iron ferrous sulphate was chosen, containing 20.1 per cent. iron (metallic), and as third form, which seemed, perhaps, on the dividing line between the two, albuminate of iron, which contained ostensibly 3.5 per cent. iron, but, upon analysis later, was found to contain only 1.3 per cent. Next, three dogs were selected, weighing respectively, beagle, 17 kilos, bull, 16 kilos, and setter, 10 kilos. These were placed in large boxes with trays below which could be removed, zinc lined, with a flooring above the trays of stout wire, so that all the urine and feces could pass through it. The dogs were allowed to fast for three days, after which the contents of the trays were collected, dried thoroughly, and the iron determined in each. Then followed seven days in which the dogs received a definite amount of raw meat in which the amount of iron was also known; the urine and feces were collected once more, the iron determined in the same way, and blood counts were made both before and after the meat diet. Then followed seven days in which the dogs received the same amount of raw meat, and in addition to that the beagle received 5.86 grammes albuminate of iron, the bull 11.42 grammes of the hematin preparation, and the setter .972 gramme ferrous sulphate. Blood counts were made at intervals of two days, and at the end, after the dogs were purged with calomel, the urine and feces were again collected and the iron determined. The different forms of iron were intimately mixed with the meat and the dogs showed no disinclination to eat them.

Whether the blood count bears any relation to the amount of iron absorbed has not yet been determined; it would seem that the amount of hemoglobin would bear more logical relation to absorbed iron, but in order to shed some light upon the former question, careful blood counts were made by Dr. Thorpe, Instructor in Medical Chemistry, who here presents his report with some observations of his own upon this subject.

THE BLOOD COUNTS.

In the experiments referred to in this paper I made the blood counts. Three dogs were used, a beagle, a bull and a setter; and the first count, made after three days' fasting, was as follows:

Beagle.	Bull.	Setter.
5,750,000	4,950,000	4,810,000

After this the dogs were kept on a meat diet for seven days, each receiving 300 grammes of chopped meat a day. Then the following was the blood count:

Beagle.	Bull.	Setter.
5,250,000	6,850,000	7,250,000

Following this, each dog was given iron in addition to 300 grammes of meat a day. To the beagle was given iron albuminate, to the bull hematin, and to the setter ferrous sulphate. The same amount of metallic iron was given to each dog. The subsequent blood counts were as follows:

	Beagle.	Bull.	Setter.
Third day	7,900,000	6,250,000	6.250,000
Fifth day	5,250,000	8,150,000	5,300,000
Seventh day	Not taken	7,425,000	4,800,000

One must, of course, wish for more evidence than this, but as far as it goes it seems clearly to favor hematin. In this connection it is interesting to note a discussion which took place at the Munich Congress of German Physicians, in 1895,* where it appeared to be shown that the effect of meat in raising the blood count lasted only eight days. The iron of hematin is the iron of meat, and it is perhaps unfortunate that our experiments were not continued longer. But I have done blood counting in several dispensary cases of anemia in which hematin was used as a chalybeate, and the increase in red blood cells steadily continued for ten or twelve days, after which time the cases passed from my observation. If continued investigation shows like results, it would seem to be true that in hematin we have a valuable form of iron for medicinal use.

E. E. THORPE.

The question of the determination of iron in urine and feces must receive especial consideration, for the ordinary methods of qualitative estimation of iron cannot be employed with iron in its organic compound, and as Mr. I. H. Coriat, laboratory assistant, made the greater number of the determinations, he here presents some views of his own, together with the method employed.

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* Sajous' Annual, 1896.

THE QUANTITATIVE ESTIMATION OF IRON IN ORGANIC MATTER.

The technique of the quantitative estimation of iron in organic matter is beset by three difficulties:

(1) The complete destruction of all organic material.

(2) The complete reduction of ferric to ferrous compounds.

(3) The accurate determination of the point at which the pink color persists when titrating with permanganate solution.

These difficulties overcome, we have in the following method a long, but an accurate, means of estimating the amount of iron, when combined with organic material.

A definite weight of the substance whose amount of iron is to be determined is accurately weighed out (in the case of the feces five grammes and of the meat ten grammes) in a porcelain or platinum crucible. This is heated to redness and the heat continued until no more fumes are given off. After cooling the resulting ash is cooked for fifteen minutes over the water bath with pure, dilute HCl (one part HCl and two parts H_2O), filtered, and the residue on the filter paper washed with distilled water until the washings are no longer acid. The combined filtrate and wash water is to be preserved. The filter paper with the attached precipitate is heated until nothing remains except a white ash. After cooling the combined HCl and wash water is added to the residue in the crucible and evaporated to dryness. The dried residue is now brought to a white heat, or until the contents of the crucible becomes of a brick-red color. After fully cooled, we are now ready for the process of reduction of the resulting ferric to a ferrous compound.

Dissolve the brick-red residue with warming in pure dilute sulphuric acid (two parts H_2SO_4 plus three parts H_2O), filter into a Kjeldahl ignition flask, add a few small pieces of iron-free zinc and a little more of the dilute sulphuric acid. There is an immediate evolution of hydrogen gas, and while this gas is being evolved conduct a slow current of carbon dioxide through the solution, and at the same time apply a moderate heat to promote the action. Continue the process for at least half an hour, and as the solution changes from a ferric to a ferrous sulphate its color becomes pale. It is of the utmost importance that a complete reduction to a ferrous salt take place, as in the process under consideration the iron can only be estimated in this form. As soon as completely decolorized allow to cool completely in the stream of CO_2. Dilute the contents with water, and decant into an Erlenmeyer flask, leaving behind any particles of undissolved zinc. Add a little more H_2SO_4 to the clear solution, and heat almost to boiling. If the process was properly carried out we now have the iron in the form of a ferrous compound, and ready for titration and estimation as such. If we add potassium permanganate to a solution of a ferrous salt containing an excess of sulphuric acid, the latter is converted into a ferric salt by the oxidizing action of the permanganate according to the equation: $10FeSO_4 + 8H_2SO_4 + K_2Mn_2O_8 = SFe_2(SO_4)_3 + K_2SO_4 + 2MnSO_4 + 8H_2O$.

If we possess a solution of potassium permanganate whose strength is known, that is, how much iron one cubic centimetre of this solution can convert from a ferrous to a ferric salt, we can easily determine an unknown quantity of iron. This permanganate solution is prepared by dissolving .340 grammes of pure crystallized $KMnO_4$ in distilled water, and diluting to one litre. This forms a 1–100 normal solution, and one cubic centimetre of this solution should equal .00056 grammes Fe. As the solution is easily spoiled, it must be freshly prepared, but if placed in a well-stoppered dark bottle it will keep for a long time.

The permanganate solution must now be standardized, and for this purpose we can use either metallic iron, ammonium ferrous sulphate, or oxalic acid. The latter was used by the writer. A 1–100 normal solution of oxalic acid was prepared by dissolving .630 gramme of the pure salt in one litre of water; one cubic centimetre of this solution should be completely oxidized by one cubic centimetre of the N–100 $KMnO_4$. The standardizing of the solution was done by carefully measuring out thirty cubic centimetres of the N–100 oxalic acid. To this was added five cubic centimetres concentrated H_2SO_4, and the whole was placed in an Erlenmeyer flask. A Mohr's burrette was filled with the permanganate solution, the flask was warmed, placed on a sheet of white paper, and to its contents, with constant stirring, the permanganate solution was slowly added. As soon as the pink color persists the reading is taken; but it must be remembered that the color produced by the last drop disappears after a time, and we must not allow this fact to lead us into error. If the $KMnO_4$ solution was of the proper strength, then it has taken exactly thirty cubic centimetres to bring about the end reaction (the persistence of the pink color) in thirty cubic centimetres oxalic acid. If it takes less, of course the solution is too strong; if more, it is too weak. In either case do not dilute or concentrate, but from the data found calculate the reducing power of one cubic centimetre in terms of ferrous iron.

We are now ready to determine the amount of iron in our reduced compound. The flask containing the solution is placed on a piece of white paper as above, and titrated with the N–100 $KMnO_4$ solution until a permanent color is reached. The number of cubic centimetres used in the titration multiplied by the strength of the solution will give the amount of iron in the weight of the substance originally used. The above, in detail, is the complete method of quantitative determination, used in the experimental work set forth in this paper. After trying many methods, this was the one found to give the best and most satisfactory results. The process, it is true, is long and tedious, and although the details may appear superfluous, yet any one who is familiar with this method will see at once that its success and corresponding accuracy can only be accomplished by close attention to all details.

I. H. Coriat.

RESULTS.

During the period of fasting it was found that the dogs were still eliminating iron, both in feces and urine. The beagle during the three days' fast eliminated in both feces and urine .0316 gramme iron; the setter in feces and urine .0317 gramme, while the bull in urine alone got rid of .00479 gramme iron. According to this, by far the larger part of the iron is removed by the intestinal mucous membrane, and apparently does not differ from the analagous elimination of nitrogenous material during fasting. Muller found that Cetti during his forty days' fast eliminated an average of .2 gramme nitrogen daily in the feces, which evidently was due to the cells of the intestine, a function which is exactly similar to that of the renal cells: of this we also have an excellent illustration in the discharge of urea into the alimentary tract in cases of uremia. These results do not differ to any marked extent from those found by Bidder and Schmidt[3] in a fasting cat which eliminated daily in the urine from .0014 to .0017 gramme iron and in the feces six to ten times as much more.

During the next period of seven days the beagle took 1,771.5 grammes of chopped meat, of which each 100 grammes contained on an average .005 gramme iron, and thus the total quantity of iron taken was .08857 gramme. Of this .0849 gramme appeared in the urine and feces, leaving .00367 gramme in the body, where, we cannot say; perhaps in the blood or liver, but certainly not in the intestines, for they must have been pretty thoroughly freed of their contents by the laxative. The bull in this time took 2,100 grammes of meat, containing .105 gramme iron, and of this .09798 gramme appeared in urine and feces, leaving .00702 gramme in the body. It was intended that the dogs should all receive an equal amount of meat, but at times they refused to eat all that was given them, and that not eaten was weighed and deducted from the total. The setter in this time took 1,770 grammes meat, containing .0885 gramme iron, and eliminated .08235 gramme iron, leaving .00615 gramme in the body. Let us see if these results justify us in establishing a relation between iron retained and the number of blood corpuscles. The beagle retained .00367 gramme iron, and showed a diminution from 5,750,000 to 5,250,000 corpuscles, while the bull, with .00702 gramme retained, showed an increase from 4,950,000 to 6,850,000, and the setter, with .00615 gramme retained, showed an increase from 4,810,000 to 7,250.000. Of course there are so many conditions governing the blood count that it might be presumptuous to say that the increase was due to the increased iron, and still there is at least a marked coincidence in these figures.

Now we come to the third period, when both meat and the three forms of iron were given. During these seven days the beagle took 1,637 grammes of meat, containing .0818 gramme of albuminate of iron, containing 1.3 per cent. (an average of four estimations) or .0774 gramme of iron, making a total of .1597 gramme iron; there were eliminated .1534 gramme, leaving .0059 gramme in the body. During the seven days the setter took 1,200 grammes meat, which contained .060 gramme of iron, and .972 gramme of ferrous sulphate, containing 20.1 per cent. iron (by calculation) or .195 gramme, a total of .255 gramme. There were eliminated .259 gramme, or 4 milligrammes more than were taken in. From this we may say, at least, that probably none of the ferrous sulphate was absorbed, and that the elimination was increased by the loss of flesh and the iron from broken-down cells, for the dog became very much emaciated during the experiment, refused food utterly toward the last and was killed after the experiment ended, on account of its inability to retain nourishment. At the same time the bull took 1,809 grammes of meat, which contained .0904 gramme iron, and 42 grammes hematin in preparation, or .2058 gramme, a total of .2962 gramme. There was eliminated in this time .275 gramme, leaving a balance in the body of .0212 gramme. Arranged in a table this would be expressed as follows:

THREE DAYS' FAST.

TOOK IN.		ELIMINATED.	BALANCE IN BODY.
Beagle		.0316 gramme	
Setter		.0301 "	
Bull		.0047 "*	

SEVEN DAYS' MEAT DIET.

Beagle,	.0885 gramme	.0849 gramme	.0036 gramme
Setter,	.0885 "	.0823 "	.0062 "
Bull,	.105 "	.0979 "	.007 "

SEVEN DAYS' MEAT AND IRON PREPARATION.

Beagle,	.1593 gramme	.1534 gramme	.0059 gramme
Setter,	.255 "	.259 "	.004 "
Bull,	.2962 "	.275 "	.0212 "

* Urine alone.

CONCLUSIONS.

If the difference between the amount of iron ingested and the amount eliminated represents the amount retained in the body and hence absorbed, then there can be no question from these experiments in regard to the absorption of the iron of the blood when taken either in the form of hemoglobin, as in the meat, or as hematin in the preparation used. This assumption also appears as fully justified as that the amount of nitrogen in albuminous food taken less the amount of nitrogen in the feces and urine represents the amount of the same element taken on by the body in the form of tissue, and this principle has been assumed as proven by all physiologists who have been engaged in experiments on metamorphosis. This also substantiates the views held by Kobert in regard to the absorption of the blood. Considering that the amount of iron retained in the third period from the meat was proportionally as great as in the second, then the amount of iron retained from the .2058 gramme contained in the hematin preparation must have been at least .0152 gramme, or 7.30 per cent. — a very small portion it is true, but it does not indicate necessarily the total amount absorbed. In applying the same calculation to the beagle we would find that out of .0774 gramme in the albuminate at least .0026 gramme, or 3.3 per cent., was retained; hence we cannot from this say absolutely that iron albuminate is not absorbed, but that the amount retained is only one-half of that in the hematin; of the ferrous sulphate it is quite evident in this experiment that none was retained, and hence probably none absorbed. A brief summary of this work will establish the following points:

(1) That iron is constantly being eliminated both in urine and feces even during fasting.

(2) That apparently raw meat furnishes an available form of iron for absorption under normal conditions.

(3) That inorganic iron as represented by ferrous sulphate is non-absorbable.

(4) That albuminates and peptonates of iron are absorbable but to a limited extent.

(5) That organic iron, of which hematin and hemoglobin are representatives, furnishes the most easily absorbable and most valuable of all iron preparations.

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DIABETES MELLITUS AND PREGNANCY.

BY FREDERIC W. TAYLOR, M.D., CAMBRIDGE, MASS.

Mrs. E., American, thirty-one years old. Family history negative. Always well, except that she has been annoyed by frequent micturition even from childhood, but does not know whether or not the amount of urine has been larger than normal. The frequency has increased somewhat the last year or two. Her weight has varied between 120 and 135 pounds, though at one time three years ago it reached 140 pounds. Before marriage she taught school. She was married July 8, 1896. Miscarried the following September. Last menstruation began December 2, 1896.

June 5, 1897, a sample of urine was examined as a matter of routine during pregnancy. Nothing abnormal had been suspected. Eight and one-half per cent. of sugar was found.

June 7th the patient came to my office, and reported that she had noticed an unusual thirst for several weeks, but had felt well till within a week, when she had been weak and constipated; that she had lost flesh within a month. Present weight 137 pounds. She was ordered to use saccharin instead of sugar, and to take an antidiabetic diet, except that she was allowed one slice of bread three times a day and a small amount of potato.

June 10th. Patient complains of general weakness, shortness of breath, slight thirst, gas in stomach. She was ordered peptonic pills p. c.

June 19th. Patient holds urine five or six hours, which is a longer time than she remembers ever to have held it before, and passes three and one-quarter to three and one-half pints in twenty-four hours. She complains of weakness, and of frequent severe pain just above the epigastrium, especially after swallowing anything acid. Weight 132½ pounds. Trace of albumin, and hyaline and finally granular casts found in urine for the first time. Sodium bicarbonate ordered.

June 26th. Edema of feet, legs and thighs. Patient feels stronger, has less gas in stomach, and less pain at epigastrium.

July 3d. Urine does not contain sugar; acid; specific gravity 1.010; trace of albumin.

July 30th. General pruritus.

Labor began on the 19th of August, shortly before midnight, fully two weeks earlier than it was expected. Position O. L. A. Dilatation of the os was complete in eighteen hours; the head came to the perineum an hour later, but as no further advance took place ether was given, and the child extracted with forceps at 9.30 P. M. As it was evident that the perineum would be torn double episiotomy was done. From the incisions tears extended up the vagina two or three inches. There was no posterior tear. Tears and incisions were sewed with catgut. The placenta was expressed, and ergot given. The mother was much exhausted, but had no serious symptom. The baby, a girl, weighed nine and one-half pounds. The puerperium was normal, except that strength returned slowly, and that the breasts were inactive. Considerable freedom was allowed in diet, though sugar was prohibited and starch restricted. The baby was not nursed. The breasts gave no trouble, secreting only half a cupful of milk. September 4th, two weeks after delivery, the urine again contained sugar. This was the first time it had been examined since delivery, as previously it was contaminated by lochia.

Since then sugar has persisted in the urine. In October, 1897, the patient's weight was 111 pounds, 26 pounds less than on the 7th of June, when she was six months pregnant. In December, 1897, her weight was 117 pounds; she was vigorous and in good spirits. During the summer she again lost flesh, weighing in September 111 pounds, though she felt well, attended to her household duties, and exercised out of doors as comfortably and freely as most women. Her diet was only moderately restricted.

October 21, 1898. Weight 115 pounds.

Codein has been the only drug given, and of it only a few doses, as its administration was immediately followed by constipation and loss of appetite.

The baby has been a very small feeder, and has grown slowly, weighing only 17 pounds when eleven months old. It has, however, been well. A sample of her urine passed October 21, 1898, was acid, had specific gravity 1.019, and contained no albumin and no sugar.

The accompanying table gives the results of all the examinations of the mother's urine. The presence of sugar was determined either by Trommer's or by Haines's test, the amount by means of the saccharometer, except in the last instance, when it was calculated from the difference in specific gravity of a fermented and an unfermented portion of the specimen.

In connection with the preceding report, the following one of a case of glycosuria which came to my notice a few months later is interesting:

Mrs. L., multipara, age thirty-nine years, menstruated last in the middle of April, 1897. Urine passed October 7th: color normal; specific gravity, 1.019; no albumin; was not tested for sugar; the specific gravity would indicate that it contained none.

November 26, 1897. Urine: color normal; specific gravity 1.030; albumin trace; sugar present, saccharometer showed ¾ per cent.; sediment much; containing hyaline casts with epithelial cells attached, and crystals of calcic oxalate.

December 1, 1897. Urine: acid; color normal; amount in twenty-four hours 1.250 cubic centimetres; specific gravity 1.022; albumin trace; sugar present, saccharometer showed ¾ per cent.; sediment moderate; one hyaline cast and one granular cast found in four slides.

The patient then omitted sugar from her diet, but made no other change, and took no medicine.

December 6, 1897. Urine: acid; color normal; amount 1,500 cubic centimetres; specific gravity 1.017; albumin trace; sugar present according to Trommer's test, though the saccharometer did not show production of gas.

January 4, 1898. Urine: acid; color normal; specific gravity 1.019; albumin trace; sugar absent; one doubtful granular cast found in sediment.

Normal labor occurred January 26, 1898, and was followed by a normal puerperium. The child was a healthy girl weighing ten pounds. It was not nursed, as attempts to nurse previous children had been futile.

October 18, 1898. Patient has been well since confinement. Diet has been unrestricted. Urine passed to-day about three hours after a hearty meal: alkaline; color normal; specific gravity 1.025; albumin and sugar absent.

Date.	Color.	Specific gravity.	Reaction.	Albumin.	Sugar.	Amount in 24°.	Remarks.
1897.							
June 5.	Normal.	1.045	Acid.	Absent.	8½ %		
" 6.		1.041	"	Absent.	7 %	9 pints.	
" 11.	Normal.	1.026			2½ %	3½ pints.	
" 19.	"	1.025	"	Trace.	3-3½ %	3¼ pints.	Sediment contained numerous hyaline and finely granular casts.
" 26.	"	1.029	Alkaline.	Large trace.	4 %	3 pints.	Few small coarsely granular casts.
July 3.	Slightly pale.	1.010	Acid.	Trace.	Absent.	6 pints.	
July 30.	Slightly high.	1.008		Large trace.	"	3 + pints.	Many coarsely granular casts. One large hyaline cast. Leucocytes, epithelial cells, pavement and small mononuclear.
Aug. 14.	Slightly pale.	1.007		Trace.		3 pints.	Nothing unusual in sediment.
" 16.		1.008		"			
" 17.		1.009					
" 18.		1.012		"			
" 20.				Large trace.	"		Labor. Sample small.
Sept. 4.	Slightly pale.	1.033	Alkaline.	Trace.	Present.		
" 11.	Normal.	1.027			"	3 pints.	
" 19.	Normal.	1.025	Acid.	Absent.	"	3 to 4 pints.	
" 26.	Slightly high.	1.037		"	"	3 to 4 pints.	
Oct. 3.		1.028		"	"		
Oct. 24.		1.034			"	2½ pints.	
Nov. 27.	Pale.	1.038		Trace.	7½ %	4 + pints.	Patient has not kept to prescribed diet, but has gained weight and feels well and strong.
Dec. 11.	Normal.	1.037	Acid.	Trace.	Present.	4 — pints.	
Dec. 23.		1.035			"	4 pints.	
1898.							
Jan. 12.	"	1.040	Alkaline.		"		
Mar. 22.	Pale.	1.037	Acid.	Absent.	"	4½ pints.	Patient not strict in diet.
June 8.	Slightly pale.	1.015	Acid.	Trace.	"	In 12°, 1½ pints.	Sediment normal.
Sept. 21.	Slightly pale.	1.039	Neutral.	Very faint trace.	6 %	4¼ pints.	No acetone.

Diabetes mellitus is one of the rarer diseases. It has been estimated (U. S. Census) that the proportion of diabetics to the entire population is as 2.8 to 100,000. At the Johns Hopkins Hospital 10 cases were recorded out of 35,000 patients in the Hospital and Out-Patient Department.[1] At the Massachusetts General Hospital, of 47,899 medical cases received in the seventy-four years from 1824 to 1898, 172 were diabetic.[2] Naturally the combination of pregnancy and diabetes is still rarer, especially as it is probable that diabetes mellitus weakens the sexual functions. The Boston Lying-in Hospital has cared for 10,000 obstetric cases during the past twenty-five years, which have been carefully recorded, without finding any case of diabetes. But few have been reported. J. Matthews Duncan[3] in 1882 reported 22 cases in 15 women, only a small number of which occurred in his own practice. After detailing them he said:

"These histories comprise 22 pregnancies in 15 women, varying in age from twenty-one to thirty-eight years. So far as known, all, with one exception, were multiparæ, the pregnancy of the highest number being the tenth. They cannot be read without giving a strong impression of the great gravity of the complication. Of the 22 pregnancies, including those going to term and those ending in miscarriages, in 15 mothers, 4 ended fatally after delivery, premature labor having been induced by me in one to avert death before delivery. These 4 were puerperal deaths in point of time. In 7 of 19 pregnancies, in 14 mothers the child died during pregnancy, having in all these reached a viable age. In 2 more the child was feeble and died a few hours after birth, making an unsuccessful result of pregnancy to the child in 9 out of 19 pregnancies. In one other case the child had diabetes."

He draws the following conclusions:

(1) Diabetes may come on during pregnancy.

(2) Diabetes may occur only during pregnancy, being absent at other times.

(3) Diabetes may cease with the termination of pregnancy, recurring some time afterward.

(4) Diabetes may come on soon after parturition.

(5) Diabetes may not return in a pregnancy occurring after its cure.

(6) Pregnancy may occur during diabetes.

(7) Pregnancy and parturition may be apparently unaffected in their healthy progress by the diabetes.

(8) Pregnancy is very liable to be interrupted in its course; and probably always by the death of the fetus.

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[1] Osler: Practice of Medicine, 2d Edition, p. 321.

[2] Reginald H. Fitz and Elliott P. Joslin: Journal of the American Medical Association, July 23, 1898.

[3] Obstetrical Transactions, vol. xxiv, 1882.

Grandin and Jarman[4] (September, 1895,) say that they have found 24 cases reported, and that in these there were six maternal deaths. The authority for the cases is not given. They call the complication a malignant one, and strongly advise a diabetic woman not to marry.

The treatment of diabetes mellitus is not essentially different because of the occurrence of pregnancy. A severe case of diabetes will excrete sugar even when on an exclusively flesh diet, and lose strength and weight, and as such diet may induce or increase albuminuria, it is better to allow a certain amount of carbohydrates, regulating the amount according to the weight and general condition of the patient more than according to the amount of sugar lost.

Dr. Tyson,[5] of Philadelphia, advises putting a patient on a rigid proteid diet for a short time, then gradually enlarging the diet as the patient will bear it, keeping the sugar in the urine below two per cent. if possible.

Dr. Robert Saundby,[6] of Birmingham, England, says, "Look to clinical results. Test diet by body weight."

It is generally admitted, I believe, that it is better to allow a definite amount of carbohydrates, for example, a certain weight of bread and potatoes, than to trust to any so-called diabetic foods.

If the patient loses strength rapidly, it is advised to empty the uterus,[7] preferably rapidly.[8]

Clinical Department.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

Regular Meeting, Wednesday, December 7, 1898, Dr. J. W. Elliot in the chair.

The President: I want to thank you, gentlemen, for the honor of making me chairman of this Section, and I hope we shall have a successful year. It has been proposed to show more patients this year and have only one paper read at each meeting, making the meetings more or less informal. We all know that there is a good deal of interesting surgery in Boston which is not shown. Of course a society does not do original work, but it is a place for showing work and for stimulating each other, and I hope you will all bring in as many good cases as you can at any of the meetings. We want to see everything interesting that is being done in Boston, so that the reports of this Society will be a report of the surgery of Boston.

Dr. C. B. Porter read a paper entitled

ECHINOCOCCUS CYST OF THE LIVER.

The first case that I have to show is a patient who is an Icelander by birth. Seven years ago she felt pain in the right side. Five years ago she was operated upon for a tumor, of which the cicatrix was left when she presented herself in the medical wards at the hospital under the care of Dr. Fitz. She was examined, and the diagnosis made of echinococcus cyst of the liver. She was well until two years ago, when the same sharp pain in the region of the liver commenced. She came to me with a tumor, which is outlined as well as possible here, representing this shape. It was apparently fluctuant, although nothing definite could be made out about it. I felt that the adhesions at this point, where the previous operation had been done, were so dense, possibly, that I should not be able to operate through there, so I made the median incision large enough to admit my hand and explore the cavity and find out where it was easiest to attack the cyst, and I found it would be parallel to costal margin. The cyst was opened there and a very large quantity of fluid was removed. A great deal of it escaped. I then removed the internal lamellated cyst and the sac, which looks much like very thin white tripe — very friable. She went on uninterruptedly well. In the laparotomy wound of the middle line there was union at once. It was sealed with some absorbent cotton which had been sterilized, and fastened with collodion and covered with gauze, and sealed until it was time to take the dressing off. She commenced to run a temperature here, and finally at this point she had a very marked rise. A drainage-tube was inserted, and since that time the temperature has been coming down. She has been perfectly well, so to speak, all the time.

Dr. Porter also read a paper entitled

THE OPERATIVE TREATMENT OF FRACTURE OF THE PATELLA.

Mr. Chairman, I have a number of cases that I thought might interest the Society, and at your own instigation I have brought some cases of fractured patella. I am not by any means prepared to say that a recent fracture of the patella should be always wired, but I must say that my experience with wiring has been such as to lead me very strongly to lean in that direction, where the operation can be done by thoroughly modern methods, that is, where one can be very sure of his asepsis. I have now done ten, and they have all been very successful indeed, and have never given me any worry from the first day. In talking to the students about it I have said the next one will probably go wrong, because it must fall to the lot of every one to have ill luck; at the same time, I have felt more and more impressed from time to time that, under suitable precautions, the operation should be done.

Case I. This case I have to show to-night is one that came to the hospital, having had a fracture of the patella of five years' duration, and this tracing shows the separation of the fragments to be about three and a half inches. That is taken from a skiagraph. She came to the hospital practically with a useless limb, and I operated. I think you must take my word for it that we have a union. A curved incision was made, and having exposed the two ends of the patella I found it would be impossible to draw them together, the contraction of the quadriceps had existed so long a time. I divided most of the quadriceps about four inches above joint. That wound healed by first intention. The other healed by first intention except in the two corners, but there was so much oozing I felt it would be wise to leave in a small wick. After dividing the quadriceps I had to divide a tense band wherever I found it, and so I did not dare, on account of the oozing, to close that up absolutely, but put in drainage. The temperature chart unfortunately did not come, but she is running on the normal line. I ought to have said that I drilled holes through the patella and passed a strong silver wire; I cannot tell the exact size by number.

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[4] Practical Obstetrics, Part I, pp. 49, 50.
[5] An American Text-Book of Obstetrics, p. 219.
[6] Boston Medical and Surgical Journal, vol. cxxvi, p. 270.
[7] Edward M. Davis: An American Text-Book of Obstetrics, p. 220.
[8] Grandin and Jarman: Practical Obstetrics, loc. cit.

CASE II. In connection with this case I want to show the picture of a man I operated on a year ago. He had eight months previous to that fallen, and there was a transverse fracture of the patella with three inches of separation. I did the same operation as here, and found it was impossible to get the fragments together. I drilled two holes in it, and with strong silver wire Dr. Newell, my senior assistant, and I spent an hour getting the fragments together. I divided a band here and there. We would draw the wires together and take twists, and after a while it seemed as though the muscle or something would give a little, and finally at the end of an hour I got the fragments together, having divided the quadriceps as I did here. He came to the hospital not long ago and there is the present union. That man had a useless limb when he came to the hospital. He came to the hospital the other day and said he had returned to work, which was more arduous than that which he formerly did. He is now a teamster, and lifts boxes which weigh 200 to 300 pounds; jumps on and off the team.

CASE III. This case came on November 19th, having fractured his patella ten days before. Slight separation, considerable blood clot in the joint, and in this case I found what has been brought forward as a very strong argument in favor of wiring, that is, that the soft parts had been turned over the two separated edges of the two fragments, so that had they been brought together the bony substance would have been separated by two layers of tissue. Those were lifted up and cut off and then the patella wired. I remember the statement was made that the fragments were not very far separated, but that shows what the skiagraph gave us, and that means that the separation between those two fragments was mostly made up of the soft parts which I cut away. Here is a second skiagraph, showing the result after the fragments had been brought together.

CASE IV. This man was brought to the accident-room October 29th. He had a fall on a curb-stone. Examination showed a large effusion into the joint of the right knee and transverse fraction of the patella. Kept in posterior wire splint, with bandage and ice-bag to November 10th. The operation was done November 12th. There was a large hematoma between the skin and the patella. The lower fragment was comminuted, and pieces of the capsule and the clot were between the fragments. The wound from the very first has never shown the slightest irritation. If you will look at the two cases I think you will say that they have both made a first-rate recovery.

I want to say one word about another case that I wired two years ago. I only ask to show the picture to-night. This man had a fracture of the patella with large effusion into the joint, and he had a compound fracture of the leg as well, and he was simply put to bed, and it was thought that he would not live. He rallied and improved, and finally came to operation. It was with difficulty that the two fragments were got together. He came to see me a year or more afterwards. He had fallen and hit his knee and I supposed of course that the fragments had broken loose. Instead of that I found the fragments intact. He came to the hospital about ten days ago and a picture was taken. We found that the wire had broken, and you can see where the fragments have separated. He was examined at the time the picture was taken by Dr. Broughton, and he said there was no separation of fragments. Whether those fragments are so joined by firm adhesions that there seems to be no separation I do not know. I have sent for him to come and have another picture taken.

All these temperatures are good, but here is one that is extra fine.

DR. WATSON: I should like to recall a method of wiring the fragments of a fractured patella under certain conditions, which I prescribed when showing the patient on whom I had used it to this Society about two years ago, and which seems to me to be of value, and to have advantages as compared with the usual manner of applying patellar suture. It is only applicable, however, to cases in which there is no comminution and in which neither fragment is very small. The accompanying cut illustrates it. A stout silver wire is passed through the vastus tendon and above the upper margin of the upper fragment, carried downward and passed similarly across the lower margin of the lower fragment through the ligamentum patellæ, that is, from *H* to *G*, downward to *D* and out again at *H* opposite. The ends *C* and *D* are then crossed and the wire is drawn tight, while an assistant presses the fragments together. They are retained in this position by twisting the two ends of the wire tightly together and close to the bone. Each fragment is now bored through transversely and at some distance back from the fractured edge, and the second wire is passed through the holes thus made, but in the opposite direction to the first, so that the ends come out on the other sides of the fragments. The ends of this wire are now twisted after drawing it tight. The advantages of this method are that there are two supporting wires, the outer one of which cannot possibly tear out if it is rightly placed, while the danger of the inner one's doing so is lessened by its exercising its pressure upon the long distance of bone made by the transverse holes.

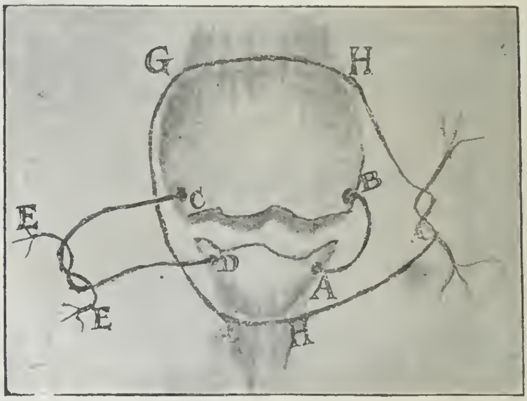

FIG. 1.

The admirable results in the interesting cases that Dr. Porter has shown us to-night speak strongly of the advantage of the operative method of treatment, which I am convinced is the best one in many, though not all, cases.

DR. PORTER: I only want to say that I have shown this series of cases, which happen to be in my wards now, to emphasize what it seems to me is a very important point, and that is that something like silver wire and not an absorbable material shall be used and left in; that just as strong as the silver wire is so much stronger is the union after you have got it. I am quite sure one case I have shown, which now proves to have fractured the knee-pan again, would have been in a much worse condition if the wire had not been there and I always feel that that can be put in and hammered down to the bone and no trouble result. It seems to me the use of the silver wire is better than anything else. Some are stitching with catgut or tendon. I strongly believe in silver wire.

Dr. Watson read a paper entitled

A CASE OF ANCHYLOSIS OF THE HIP-JOINT.

This case is of interest chiefly on account of the diagnosis, which up to the present time I have been unable to satisfy myself with regard to, and which has varied with each physician who has seen the patient. He is a negro boy of seventeen years of age and well developed. He is an epileptic, but otherwise has had no serious illnesses. About three months ago he fell while in an epileptic seizure, striking his back on the floor. (This history was obtained by Dr. Lovett under whose care the boy was when he first entered in Dr. Post's service.) Immediately after the fall he had severe pain in both hips and across the sacrum, and both thighs were fixed in a moderately flexed position; the knees were also slightly bent and there was marked limitation of motion in them as well. The pain continued for a few days and then ceased, and the contraction of the knees and the fixation of the hip-joints passed off, and he regained almost the normal motion of the legs and was able to walk and run about again. Then as suddenly as at first the attack was repeated — this time, so far as I can learn, coming on without any injury. The pain was severe, as on the first occasion, and lasted longer. It has gradually disappeared, however, but the contraction and limitation of motion of the limbs has remained practically unchanged. As you will see, there is, when he stands, a marked lordosis, and the knees are somewhat bent. The condition affects both sides equally. If the back is straightened with the patient lying down, the thighs are flexed at nearly a right angle. They are also adducted, but not sufficiently to have them crossed one over the other. They can be but little abducted; when strong pressure is used the knees can be separated about three inches. The thighs can be flexed slightly only. The knees cannot be wholly straightened, though nearly so. The right thigh can be rotated outward fairly well but very little inward. Rotation of the left thigh is almost nil. Adduction is also very much limited, and extension is absolutely so.

Under ether all these limitations of motion persisted, except that the knees could be somewhat straightened. Rectal examination was negative. There is no evidence of rickets elsewhere. Rest in bed has given no relief. Tenderness, which has now almost disappeared, was called forth by pressure on the trochanters. There has been no rise of temperature, or other constitutional disturbance throughout. The gait of the patient is striking and peculiar. It can be imitated by throwing the back into a position of marked lordosis, fixing the hip-joints by voluntary muscular effort, slightly bending the knees and holding them firmly against one another, and then lifting the feet and carrying them forward in a series of short steps by upward tilting of each side of the pelvis in alternation, and forward and backward movements of its sides in alternation, respectively, the feet being carried forward in turn by the latter movements.

The patient entered the third surgical service at the City Hospital while it was in Dr. Lovett's charge, and both Dr. Prince and Dr. Bullard have seen him with reference to the question of nervous disease. I hope therefore to hear these gentlemen speak with regard to the case, which they have had longer under observation than I.

Dr. Prince: The interest of this case centres in its history. As told to me by the boy himself, he went to bed one day perfectly well. The next day on waking he found his legs were weak, but had no particular pain until about the end of the week, when he had some. He gave no history of inflammatory trouble, but he himself insists that his condition in the early stages was similar to what it is to-day. I feel, however, that a history of this kind is always dubious and must be accepted qualifiedly until corroborated.

I think the first thought in explanation of such a case, accepting the history, would be of hysteria, which I believe has already been diagnosed in this case by one whose opinion requires consideration; but to me the fact that under ether it has been impossible to move the joints to any marked degree shows that the anchylosis cannot be due to hysterical spasm; nor would the length of time during which it has existed admit of an anchylosis due to secondary joint changes, such as sometimes occur in long-standing cases of hysteria.

Examination of the nervous system is negative excepting that there is a very excessive increase of the knee-jerks; this increase is much beyond normal limits. At one time I noticed very slight clonus of the left foot, which later disappeared. There are no other nervous phenomena except the pain on attempting to move the joint. The boy has, however, a history of epilepsy, although I have not observed the attacks personally. I believe myself that the disease is an arthropathy of some kind, possibly due to some obscure neurotic trouble or more vulgar pathology, the nature of which is obscured by faulty history.

Dr. Lovett: There was one thing Dr. Watson did not speak of in connection with the examination under ether. Not only was no movement possible, but I attempted to bring his legs down into proper position. One leg was flexed and held, and with all the force I dared to use I tried to bring the other down straight, but I did not think I gained much of anything. No soreness was caused by the manipulation. I was unable to make a diagnosis.

Dr. Prince showed a

CASE OF ARTHROPATHY (STIFF FINGERS) OF ACUTE ONSET AND PROBABLY OF NEUROTIC ORIGIN.

This case is of interest, especially if viewed in connection with the case just shown by Dr. Watson of anchylosis of the hip-joint. The last two joints of the middle, ring and little fingers of the right hand of this lady are, as you will see, stiff, and can only be slightly flexed. The skin is smooth and tense, the joints rather rounded, and the fingers have the same appearance as is sometimes seen in joint disease or following prolonged immobility from splints. There is some thickening of the tissues of the fingers, especially about the joints. The joints are painful if bent either voluntarily or passively.

The interest of the case lies in the history. This patient, who gives a very intelligent account of her case, insists that her hand was perfectly well until about ten weeks ago, when she had what was probably, from her description, a whitlow at the base of the nail of the ring finger. This was not particularly painful or apparently of much gravity, but it was lanced. She states that just as the knife penetrated the abscess her hand was seized with violent shaking of temporary duration. The hand was put in a sling without splint, and the next day she noticed that the fingers were in the same stiff condition that they are to-day.

There has been nothing inflammatory about the condition of the joints, but she has had a burning and numb feeling in the fingers, without redness or swelling. Dr. John G. Blake, who referred the case to me, states that this practically corresponds to his observations, although he did not see the original ulceration. The scar of the ulceration at the base of the nail is plainly visible and the condition of anchylosis is obtrusive. The sudden development of this condition, without any evidences of inflammation in joints previously perfectly well, is, I think, of interest. The reason I think it a neurotic trouble is the fact, besides the sudden onset, that further examination shows that there is a decided weakness of the power of flexion of the affected fingers at the otherwise normal metacarpophalangeal joints. The little finger is decidedly paretic.

On the other hand, there is no impairment of sensation, either of touch, temperature or pain, nor is there any atrophy of the muscles. I think, therefore, that we have to do with a distrophy, the result of a neuritis. This may possibly have been due to an infection from the wound, or, as is more probable, the original whitlow may have been due to the same process, the neuritis. This condition reminds one of that which is found in Morvan's disease, in which painless felons are the characteristic features due to neuritis; the painless wen is due to the analgesia which is said to be always present. It is evident, however, that a milder type of neuritis might produce trophic changes and paralysis without anesthesia.

Dr. Monks read a paper entitled

ANTERIOR POLIOMYELITIS FOLLOWING OPERATION FOR APPENDICITIS.

The first case I have to show is one of appendicitis, which presented peculiar features, and which after operation was followed by paralysis of the left leg. Dr. Morton Prince, at my request, made a very careful examination, and declared the paralysis to be due to anterior poliomyelitis, which disease he attributes indirectly to the appendicitis. At the time of operation a large amount of very fetid pus was removed, and also the appendix. About ten days after the operation another abscess formed, and this was opened without ether, by inserting the finger into the wound. A few days later the poliomyelitis appeared.

Dr. Prince: The nervous symptoms in this case are perfectly typical of poliomyelitis, that is, an inflammatory disease of the anterior horns of the spinal cord; very largely, but not absolutely, one-sided (left) in the lumbar region, causing paralysis of the left leg, and right-sided in the cervical region, causing paralysis of the extensors of the arm.

When I first saw this patient in the hospital there was absolute paralysis of the left leg without any impairment of sensation whatsoever; nor was there any vesical paralysis. The right leg so long as he was in bed did not seem to be affected, but now that he is up it is apparent that the right leg is also weak. Both knee-jerks were, and are, lost and the affected muscles are soft and flabby.

The history of the case shows the initial fever followed by the paralysis, as is characteristic of this disease. The distribution of the paralysis, without any sensory affections whatever, without pain or tenderness, and its sudden onset, exclude all other diseases as possibilities. I am not aware that poliomyelitis has been observed after operations, but as the disease occurs in epidemic form, it is unquestionably due to some infectious agent, and therefore it may well be that in this case it may be due to some sort of infection from the wound. The disease is common in children but in adults it is rather rare. The previous length of stay in the hospital excludes the possibility of the disease having been contracted from influences outside the hospital. It is a curious coincidence that there is another case of poliomyelitis in an adult in one of the medical services at the present time in the hospital.

Dr. Porter: Was the patient absolutely well except for his appendicitis before the operation?

Dr. Vietor: I should like to ask if a bacteriological examination was made, and if the pus pocket occurred about the time of the poliomyelitis?

Dr. Monks: The bacteriological examination showed colon bacilli and staphylococci.

Dr. Vietor: When did the second pus pocket occur, with reference to the poliomyelitis?

Dr. Courtney: Nonne examined the cords of nine cases dying of general sepsis, and in five found focal myelitis, but in every case in the lateral columns. Primarily the infection in each case started in the blood supply to the lateral columns.

EXCISION OF THE CECUM FOR CANCER.

Dr. Monks: This next case is rather an unusual one. A man of thirty-five came to the hospital with a history of pain in the right inguinal region for nine days. Family history negative. Some gastric disturbances for eight or nine months before he came to the hospital. About six months ago he first noticed a lump in the right iliac fossa. The lump was hard and somewhat tender, and had grown quite rapidly in the last two months. The patient had lost fifteen pounds in weight; constipated. Catharsis produced no effect on the tumor. Operation a week after entrance. The tumor was cut down upon and found to involve the cecum and appendix. The appendix was represented apparently by a slough, which was about the shape and size of an appendix, in the middle of the tumor. The actual size of the tumor was somewhat larger than two fists together. The small intestine was then united to the large one by the end-to-end method. The man got well in most satisfactory fashion, and has not had any trouble since the operation. The diagnosis of the pathologist was carcinoma. The patient left the hospital a few weeks ago and he certainly has gained flesh since he came out. Drainage was not used.

Dr. C. B. Porter: I met recently a case like that but on a smaller scale, where there was no question about the appendix. The case came from the medical wards as one of obstruction of the bowel, and I found nothing except some contracted bowel. I examined the bowel till I came to the duodenal end, then I worked back, and at the large intestine came across a constriction which would admit a small lead pencil. A V-shaped piece of intestine was taken out, and Dr. Whitney said it was adeno-carcinoma of the intestine. The man did perfectly well.

Dr. Munro reported

A CASE OF RUPTURE OF THE BLADDER.

This man, a ship-rigger, in April, 1897, was rigging a vessel, when a spar fell upon him and smashed in his pelvis. Unconscious for a short time and nauseated; he came into the hospital at once and was catheterized, urine mixed with blood being found in the bladder. He had a good pulse, but looked rather knocked out. He was let alone for an hour or two, when the catheter again drew urine and blood, but, as the pulse was worse, a laparotomy was performed at once. The hemorrhage was all in front of the peritoneum from the umbilicus to the pelvis, pushing the peritoneum back against the spine. There was no hemorrhage into the abdominal cavity; it was entirely pro-peritoneal and pretty severe for a time, apparently coming from the deep epigastric and the space of Retzius. Packing controlled the hemorrhage. There was leakage of urine through the wound in a few days. We tied in a catheter, but at the end of three weeks he was still passing urine out through the wound. An external urethrotomy was done, after which he healed up rapidly, and went out at the end of three months well, and he has been at his work ever since. It is interesting because of the exceptionally large amount of hemorrhage that took place in front of the peritoneum.

PENETRATING WOUND OF THE RECTUM AND PERITONEUM.

The other case came into the hospital in the middle of August. Forty-eight hours before admission he was at home, and in vaulting over a broom it caught in his coat tail and he sat down upon the end, which passed through his rectum into the peritoneal cavity. Vomiting, distention and all the symptoms of peritonitis rapidly set in. The finger in the rectum could reach a hole that opened anteriorly into the peritoneal cavity. We operated at once, and found in the pelvis a mass of feces, pus and lymph, and a hole at the junction of the bladder and rectum that would admit the thumb. He was so distended and in so poor condition that it was not possible to attempt to suture the perforation. The pelvis was packed carefully and a colostomy was done on the left to switch off the fecal current. At the end of two or three days feces came through the median opening as well as through the inguinal anus, and though he was pretty rocky for about a week, with careful feeding, etc., he began to improve, and both wounds gradually closed spontaneously. Examination of the rectum shows a scar anteriorly, but no attempt at constriction.

CHRONIC INTUSSUSCEPTION; RESECTION; RECOVERY.

The next case is a Chinaman twenty-one years old. I will pass this specimen around. He entered on the medical side ten days before he was transferred to the surgical side, with an indefinite history of distress in the abdomen for three weeks. After his entrance he had more or less obscure symptoms, but he improved so much that they were going to discharge him. Two or three days before I saw him, however, he got worse and passed fresh blood from the rectum. Examination showed a tumor filling the right iliac fossa and pelvis. He did not seem very sick, although he vomited occasionally and passed nothing but blood in the stools. We planned to wait a day or two before operating, but in twenty-four hours his pulse was worse and operation was not delayed. We found an intussusception of the ileum and jejunum. It was a reversed intussusception, I think — apparently the ileum intussuscepted into the jejunum. It measured thirty-two inches after removal. An end-to-end suture was made and he was sent back to bed in much shock, but he rallied well. We found that the outer layer of the intussusception had sloughed through and feces and pus escaped into the general cavity in taking out the mass. One end of the anastomosis was a little doubtful in my own mind, but apparently there was enough circulation to keep it alive. At any rate, to cut off another inch or two would have necessitated another opening in the abdominal wall, to give room enough to work in. I ran some risk and utilized some bowel that was doubtful. He went along all right and the wicks were all out, but at the end of the seventh day began to leak pancreatic fluid and bile. Again I operated, and found a small hole behind the median line where an opening was made. After trying for quite a while to close the opening in the bowel I gave it up, enlarged the median incision, turned out the intestines, and made another rough anastomosis. He pulled out well, but at the end of six days leaked pancreatic fluid again, and again I operated. Then I found a perfectly clean granulating base, with good, solid, healthy tissue, and a small hole which I closed tight, and sutured the parietal wound in front to get a solid support, but it leaked again on the third day. Now he is in the ward and leaks pancreatic fluid and bile, but he is growing fat, and there is every reason to believe that the fistula will close spontaneously.

(To be continued.)

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Medical Progress.

REPORT ON ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D., BOSTON.

(Concluded from No. 8, p. 189.)

OPERATING UPON COXA VARA.

Hoffmeister [20] prefers, in operating upon coxa vara, linear to wedge-shaped osteotomy, the latter being more dangerous and unsatisfactory. He employs linear osteotomy, not of the neck but between both trochanters. He, however, is in favor of conservative, that is, non-operative, treatment, in many cases advising operation, chiefly in double cases with marked stiffness and impairment of function. The conservative treatment is based upon chiefly an attempt to protect the distorted bone.

Hoffmeister relies upon skiagraphic record of coxa vara, but calls attention to the fact that the curves in coxa vara are not all represented in an x-ray projection. The curves in coxa vara are downwards, backwards and in the direction of torsion, while in the skiagraph picture only the finish is well depicted.

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[20] Beiträge zur klinische Chirurgie, Bd. xxi.

Charpentier [21] divides this affection into two classes: coxa vara from rickets and coxa vara of congenital origin, basing his opinions on a number of specimens in the Musée Dupuytren. The affection may be confounded with congenital dislocation and arthritis deformans. Four operative methods are described: (1) resection of the head; (2) linear osteotomy of the neck of the femur; (3) wedge-shaped osteotomy of the neck; and (4) subtrochanteric osteotomy. The operation should not be performed if rhachitic symptoms are present.

Maydl [22] is of the opinion that arthritis deformans is not as infrequent in young children as has been supposed.

Alsberg,[23] after measurements in seventy-nine femora, considers that the normal angle of the neck with the shaft is 41.5°, and the plane of the joint at 41.5°. The smallest angle was 25°, the largest 54°. The average angle formed by the shaft with the neck is 125°. Taking this as a standard, he has investigated the mechanics of coxa vara, which he considers to be both a non-congenital and a congenital deformity, and also as combined with congenital dislocation.

In the non-congenital variety the following causes may be mentioned: rhachitis or other anomaly in growth, osteomalacia, ostitis fibrosa, osteomyelitis, tuberculosis, arthritis deformans. He considers coxa vara an anatomical condition and therefore does not regard a differentiation between coxa vara rhachitica and coxa vara of arthritis deformans necessary in diagnosis. Coxa vara, in rhachitis adolescentium, he regards as particularly adapted to conservative treatment. He agrees with Hoffmeister that osteotomy away from a joint is to be perferred to osteotomy of the neck, and mentions Hoffa's oblique osteotomy from without inward below the great trochanter. He mentions Trendelenburg's diagnostic symptoms of true coxa vara from congenital dislocation, namely, that in the former, if the patient stands on the affected limb, the pelvis drops to the other side, giving obliquity to the line of the fold of the buttocks and the tilt of the pelvis not seen in congenital dislocation.

Frazer [24] gives a review of the subject of coxa vara, considering the questions of history, diagnosis, pathology, etc., in detail, and also a brief history of the cases which have been reported since Hoffmeister's article in 1894. He does not think the name coxa vara, which has become the one in general use, should be applied to these cases indiscriminately, as there are three distinct varieties recognized. The diagnosis of this condition should not be difficult, but errors are frequent, and he gives the following plan of investigations to follow in examinations, and which deserves mention: (1) atrophy; (2) the position of the trochanter in relation to Nelaton's line; (3) the relation of length of extremity, measured from the anterior superior spine to internal malleolus; (4) the actual length of extremity, measured from tip of trochanter to external or internal malleolus; (5) extent of outward rotation; (6) limitation of inward rotation; (7) restriction of abduction or adduction; (8) disturbances of flexion and extension.

AN UNUSUAL FORM OF DISEASE OF THE BONE AND JOINTS.

Bruch [25] describes a condition seen in an adult which presents characteristics of both rhachitis and of osteomalacia, being distinguished from the latter by the marked alteration in the shape of the bones, and from the former by a number of fractures which heal readily. This affection began at the age of fourteen years, and was seen in an adult of thirty-one. At first there was great weakness of the bony structure, so that locomotion without crutches was impossible. The legs became distorted to an unusual extent, and eighteen fractures of the legs and arms occurred in the course of seven years, after which fractures ceased. Some stiffness in the shoulder-joint developed after the twenty-seventh year. Practically the whole osseous system showed signs of alterations of shape and form, from bending, abnormal growth and badly united fractures.

EXCISION OF THE SACRO-ILIAC JOINT.

Buchannan [26] reports two cases where operations were performed. He claims that this rather unusual operation is not necessarily difficult, but that the joint is easy of access, and considers this procedure as extremely satisfactory. The steps in the technique of the operation he describes as (1) to locate the joint, for which he gives directions from the relations of the bony parts; (2) to make a free incision, which corresponds to the direction of the glutei muscle, and is separated without cutting; (3) the bone is then cleared of muscular fibres over a sufficient area to insert a drill hole, and the bone is then perforated with a trephine of an inch and a quarter in diameter; (4) after this the rongeur is used to remove enough of the ilium to fully expose the joint, and the diseased portions can then be cleared with a curette and gouge; (5) he lays open all tubercular abscess cavities as thoroughly as is possible, and they are curetted and packed with iodoform gauze. He also suggests that no dead spaces be left, that the soft parts should always be sutured accurately, at the points of exit of the gauze, and that strict asepsis should be observed.

Of the two cases reported, one died, but probably from pulmonary tuberculosis; the second, however, was entirely satisfactory.

THE ULTIMATE RESULTS OF MECHANICAL AND OPERATIVE TREATMENT IN HIP DISEASE.

Drs. Gibney, Waterman and Reynolds [27] report the results of the study of 150 cases of disease, on all of which personal examinations of the patients had been made. The article gives a series of tables, in which the shortening, its relation to abscess, the amount of deformity and the necessary correction of deformity is compared, and also the relation of mechanical and operative treatment. Of the 150 cases, 107 were cured, 25 under treatment, 7 advised readmission for correction of deformity, 11 deaths. The article is a valuable contribution to our information in regard to the later stages of hip disease. The following deductions are given by the authors:

(1) Hygienic and constitutional measures exert a powerful influence in the control of the disease.

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[21] Thèse de Paris, 1897.
[22] Wiener klinische Rundschau, 1897, Nos. 10-12.
[23] Zeitschrift f. orthopädische Chirurgie, 1898, Bd. vi, Heft 1, p. 112.
[24] Annals of Surgery, 1898, vol. 28, p. 21.
[25] Deutsche med. Woch., 1897, March 4th, p. 152.
[26] Memphis Lancet, December, 1898.
[27] Annals of Surgery, October, 1898.

(2) The early diagnosis of hip-joint disease represents a very important factor in attaining a successful ultimate result.

(3) During the acute stage rest in bed, associated with the usual mechanical appliances, is preferable to ambulatory treatment.

(4) In the first stage it is essential to procure absolute immobilization by fixation and traction (extension), and also to furnish protection to the joint.

(5) In the second stage the deformity must be corrected, and operative procedures resorted to if mechanical methods fail after a reasonable length of time — usually six months.

(6) Early correction of the deformity is advised, using as little force as is consistent with the individual case.

(7) Adduction with flexion is the deformity which most frequently calls for correction.

(8) Flexion without adduction rarely requires correction.

(9) Forcible correction, followed by fixation, should be tried before attempting reposition by femoral osteotomy.

(10) Where there is absolute anchylosis or only a few degrees of motion, and all manifestations incident to an acute condition have subsided, the operation of subtrochanteric osteotomy for the correction of the deformity is indicated, supplemented, if necessary, by tenotomy, myotomy and fasciotomy.

(11) The injection of various chemical substances into abscesses and sinuses has not proved beneficial.

(12) When an abscess does not disappear after repeated aspirations radical operative procedures are clearly indicated, to be followed, if necessary, by resection of the joint.

(13) When the disease is complicated by pus formation in young children, most especially in the first years of life, there is less need of fearing a poor result than in adults, as the former frequently recover with a movable joint, a condition which may be explained by the fact that the head of the bone at this time is cartilaginous.

(14) Long-standing and profuse suppuration retards the process of reparation and gives rise to a grave prognosis; furthermore, the absorption of pus is associated with great danger and frequently results in acute septicemia and amyloid degeneration.

(15) Treatment should be continued not only during the acute and subacute stages, but also during the convalescent period.

SUBTROCHANTERIC OSTEOTOMY IN FAULTY ATTITUDES FOLLOWING HIP DISEASE.

Phocas[28] formulates the following conclusions on this subject:

(1) Linear subtrochanteric osteotomy should be the operation of choice.

(2) Under a few conditions mechanical correction and arthrotomy can be employed.

(3) Other varieties of osteotomy are rarely indicated.

(4) Subtrochanteric osteotomy can in certain cases be used in active coxalgia.

(5) Double subtrochanteric osteotomy can be advantageously employed in scissors deformity — in double anchylosis of the hip.

PRIMARY RESECTION OF THE HIP, INCLUDING THE ACETABULUM.

Bardenheur[29] claims that radical procedures are needed in excision of a tubercular hip joint, especially in the region of the acetabulum, and as the pelvis has remarkable powers of regeneration there need be no hesitation to remove large pieces of bone. The chief lesion, according to Bardenheur, is not in the femur but in the pelvis. In eight cases he was obliged to remove the whole acetabulum; five of these recovered and three died. An incision is made along the whole iliac crest and down to the trochanter and all the muscles are stripped off subperiosteally. The acetabulum is then attacked, and in extensive disease the chain saw is recommended rather than the chisel. Salt infusion is recommended before and after the operation. Bardenheur has met with fat embolus after chiselling.

Sprengel, who has operated in 16 cases, has not found the operation bloody if performed subperiosteally, and he recommends the procedure only when tubercular disease has been discovered with certainty.

EXTENSIVE RESECTION OF THE PELVIS.

Wolff[30] has performed the operation in twelve patients, with five deaths. The operation is a bloody one, and is to be performed subperiosteally in extensive pelvic ostitis of the sacro-iliac articulation.

CONGENITAL DISLOCATION OF THE HIP.

Lorenz[31] does not recommend bloodless reposition after the tenth year at the highest in single dislocation, and in double cases after the seventh or eighth year, nor should the operation be performed in the youngest years. The age of election would be from the fifth to the seventh year. The essential of an operation to prevent relapse is that the head of the femur should come in contact with as much of the acetabulum as possible. This is more important than extreme abduction of the limb, which may produce muscular shortening, which favors a dislocation.

CONGENITAL DISLOCATION OF THE HIP TREATED BY FORCIBLE REDUCTION.

Kölliker,[32] since 1896, has employed the so-called bloodless method in the reduction of congenital dislocation in 50 cases (by operation); 14 were double — 11 female, 3, male; 36 were single — 30 girls and 6 boys. The left was dislocated 26 times — 23 girls and 3 boys. The right, 10 times — 7 girls and 3 boys. Thirty-nine children were under four, namely, 3, one year old; 18, two; 13, three; 5, four; 11 were over four, the oldest being eleven years of age. The after-treatment was the one recommended by Lorenz, and consisted of repeated plaster bandages applied every four or eight weeks — seven or eight bandages were required in the cases of single dislocation, and nine or ten in the double cases.

Schede's abduction apparatus was applied at first, and later a corset with a jointed appliance in an abducted position, either for the whole limb or the thigh.

The result was determined in 38 cases as follows: Out of 13 double cases, in 7 there was no improvement; in 6 transposition was effected to the region of the acetabulum. In 25 single dislocations there were 19 with reduction into the acetabulum region, and in 2 there were complete and permanent cures, with movable articulation.

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[28] Revue d' Orthopédie, September 1, 1898, p. 391.

[29] Deutsche med. Wochensch, September 29, 1898, p. 186.

[30] Loc. cit.

[31] Loc. cit., p. 187.

[32] Centralblatt f. Chir., October 22, 1898, p. 1042.

Transposition of the head into the region of the acetabulum lengthens the limb, giving an improvement in gait, and diminution of the danger of scoliosis. There is sometimes diminution of the motion of the joint after transposition.

TRAUMATIC SPONDYLITIS.

Hattemer,[33] after giving the literature of the subject, presents two cases which confirm the opinion of Kümmell and Henle, that severity of the trauma is not essential in the causation. The cases are, however, cases where gibbosity followed a year or a few months after an injury; the gibbosity in the latter case did not develop in the region supposed to be injured, and the condition of the back before injury is not given. The writer is of the opinion that in certain cases, under the influence of an injury, nutritive disturbances develop locally in a portion of the vertebral body, and furnish a lodgement for a destructive ostitis.

FORCIBLE CORRECTION OF THE SPINE.

Dr. Goldthwait[34] reports a series of cases and apparatus which he has used for the gradual rectification of deformities of the spine. The method consists in applying the jacket with the patient lying on the back, resting on steels, which support the knuckle, and may be used either with or without the traction upon the extremities and the head. Usually the force used is the position and weight of body, and in the later cases reported he states that ether was not necessary.

The cases reported show marked improvement, and the method is much to be preferred to the more radical and less safe method of Calot, and the cases reported show a most satisfactory degree of improvement. Also in several it had a decided and immediate beneficial effect on existing paralysis. The apparatus used is ingenious, and is fully described, and the article merits careful consideration.

FORCIBLE CORRECTION IN POTT'S DISEASE.

Schering[35] fixes his patients after correction in a plaster-of-Paris *gouttière*, modelled to the corrected trunk, head and thighs. He reports three cases with abscess where diminution of the abscess took place. The gibbosity was partially corrected, but reappeared after the patients resumed an upright position.

Vulpius[36] suspends his patients head down, following Bilhaut's method in renewing the bandage, using mechanical stretching by means of a screw for traction on the head and limbs during the correction. He has experienced one death during foot suspension, but attributes the death not to the suspension but to the extension.

Meyer[37] warns against too great expectation from Calot's method, although he regards the method of use in milder cases with lesser grade of deformity. In the cases of severer gibbosity, he considers the method offers an excellent method of fixation which will check further increase of the deformity. He recommends correction in early paralysis.

Telanos[38] has only employed narcosis in four cases, and uses mechanical extension. He has met with slight paralysis in one case. Plaster bandages were applied, including the chin and occiput.

Hoffa[39] considers the method of use under limitations. He considers it contraindicated in case of a deformity which is too extensive, involving more than three vertebræ, or when the affection has lasted longer than three years; paralysis is no contraindication; on the contrary, improvement follows; but abscess he regards as a contraindication on account of the danger of tubercular extension.

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Reports of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, October 4, 1898, Frederick Peterson, M.D., President.

DOUBLE ATHETOSIS FROM INFANTILE CEREBRAL PALSY.

Dr. L. Stieglitz read a paper with this title. He presented a boy, sixteen years of age, the youngest of several children. All the others had been well at birth, but he had been born asphyxiated, although the labor was normal. He did not walk until five years old. At the age of seven years he had scarlatina, and after that time the peculiar movements which he now exhibits became worse. Soon after birth it was noticed that he moved his arms, legs and head in a peculiar way. After a few years the movements remained at a standstill until the attack of scarlatina. On voluntary motion, the movements are aggravated. His face shows a constant succession of grimaces. The peculiar movements affect the trunk, as well as the upper and lower extremities. The tongue and the eyeballs are free from these movements. The deep reflexes of the arms are lively, as are also the knee-jerks, but not more than in many healthy children. His mental development is very good, but his physical development is rather deficient. Close study of the movements had led him to the opinion that the case was one of double athetosis, due to infantile cerebral palsy, the result of a lesion occurring at the time the child was born asphyxiated. These cases rarely show any defective mental development. In cases of athetosis the lesion is probably usually in the corpus striatum, and it is not surprising that there is no epilepsy or disturbance of the mental development.

Dr. B. Sachs said that as he recalled similar cases that he had seen he was forced to the conclusion that the one just presented was a most excellent illustration of the combination of the choreiform and the athetoid movements. The probability of their not being cortical was, of course, very great. That there was a direct relation between the typical spastic cases of infantile cerebral palsy and the choreic and choreiform athetoid cases he verily believed. In a number of cases he had found that peripheral restraint on these unruly members, kept up for months, had had a remarkably good effect.

Dr. Edward D. Fisher said that he now had under observation a boy of the same age, who presented almost exactly the same symptoms, except that they were not quite so severe. It seemed to him that the lesion was very apt to be subcortical. The absence of epileptic conditions did not mean necessarily that the lesion was not a cortical one. The lesion was certainly not an extensive one in the motor tract.

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[33] Beiträge zur klinische Chirurgie, Bd. 20, Heft 1.
[34] Boston Medical and Surgical Journal, July 28, 1898.
[35] Deutsche med. Wochensch., No. 24, 381.
[36] Loc. cit., 1898, No. 27.
[37] Correspondenzblatt f. Schweizer Ærtzte, 1898, 8.
[38] Weekblad ranhet Nederlandsch Tijdschrift voor. Geneeskunde, 1898, No. 11.
[39] Deutsche med. Wochensch., 1898, No. 1.

Dr. Joseph Collins said that he agreed entirely in the diagnosis made by Dr. Stieglitz, and he was glad to see such a typical illustration of this group of cases. He did not favor the name "athetosis," nor would he apply it to this case. Taking the case in its entirety, he would look upon it as an example of the choreic form of infantile cerebral palsy. He was inclined to think that the involvement was primarily of the corpus striatum and quite as much so of the optic thalamus, and he based this opinion on the study of the patient's motions, coupled with his spastic gait. The question of the existence of epilepsy in such a case did not seem to him of much importance, for the opinion was growing yearly that idiopathic epilepsy is a cortical disease. He had tried peripheral restraint for months at a time in his case without observing the slightest benefit, even temporarily.

Dr. Peterson thought the case was undoubtedly one of post-paralytic morbid motion, and he agreed with Dr. Collins that athetosis was not a proper name. The position was athetoid, but the movement was rather a polymyoclonus. The term "athetosis" should be applied to a slow, vermicular movement.

Dr. C. A. Herter remarked that he thought the term was applied to much more rapid movements, and it did not seem to him that there was a proper pathological basis for such a destinction as that made by the last speaker.

Dr. Collins thought the term "athetosis" should be limited to rhythmical movements, and "choreic" to non-purposive, dancing movements.

Dr. Stieglitz, in closing the discussion, said that in cases of infantile cerebral palsy all the different varieties of movements mentioned were often combined, so that perhaps it would be better to select a name which would cover all of them. When the boy is less excited the movements are usually less rapid, and more vermicular in character. Under ordinary conditions, he does not present a spastic facies. The restraint treatment had been advocated by Dr. Hammond when he had first described these cases.

Dr. Joseph Collins reported a case of

DISSEMINATED INSULAR SCLEROSIS.

The patient who is before you has the symptoms of two rather obscure diseases of the nervous system, and I bring him here that you may assist me in determining the one from which he suffers. He is forty-one years old, married, and by occupation a silk-weaver. His personal history is that he has been a user of stimulants and tobacco, the latter rather intemperately. Physically, he has led a very active life, and in many directions, particularly fencing and boxing. He has been an amateur athlete. The only point of interest in his family history is, according to his own statement, that a brother younger than he by two years complains of the same trouble in walking that he does. When our patient was thirty-three years old he had a sore on the penis for which he was treated by Dr. Geo. H. Fox. The latter assured him that this sore was of the nature of a chancroid, and gave him only local treatment. Aside from bubo, which complicated it, this terminated uneventfully in a few weeks, during which time he was treated in private practice by Dr. Fox. Aside from the attack of grippe, which he had in 1892, he has been quite well. His present illness dates back nearly three years, the initial symptom having been, he thinks, dizziness, which was sufficiently great to interfere with his locomotion. Apparently this vertigo was not continuous, because he says that when it would come he would have to hold on to something to prevent him from falling. About this time he must have had some trouble with his sight, for it appears that he went to the New York Eye and Ear Infirmary, where he was told that he had locomotor ataxia. The symptoms that next appeared after the dizziness seems to have been what he describes as piercing pains in the calves and the sensation of heavy weights in the thighs. So far as I am able to infer, this constitutes the major part of the patient's complaint until the beginning of the present summer, although it should be said that he has been sexually impotent for two years. The fact that he has been unable to work has, according to his own statement, preyed very much upon his mind and made his symptoms worse. About six months ago his bowels and bladder became functionally derelict, and sometimes the one or the other would discharge its contents without his being aware of it. At this time, likewise his speech and handwriting became affected, both in very much the same way as they are now; that is, the enunciation is measured and scanning, the intonation rather high and uniform, while the handwriting is very irregular and ataxic. About at the same time the patient avers that he became uncommonly emotional. He would burst into tears at one time, and at another would grin or smile senselessly. Accompanying these physical symptoms, the patient underwent a psychical alteration. He says that he became very forgetful, that he was unable to read understandingly, even the newspapers. This state persists, in a very much slighter degree, to-day. For instance, it is quite impossible to elicit the symptoms of his disease except by asking him leading questions, and he forgets easily. At present he is able to concentrate the attention sufficiently to read a newspaper or magazine understandingly.

His complaint at the present time is of difficulty in locomotion and impaired dextrality. The abnormalities of articulation and the slight psychical aberrations do not concern him sufficiently to complain of them. The functions of the bladder and bowels are now moderately normal, although occasionally there is some incontinence, especially of urine. He does not complain of pain, nor of tight band sensation about the waist, and the feeling as if there were heavy weights in the thighs has disappeared. Examination shows a man of medium height and good muscular development, whose body is the seat of a marked deformity due to a cervico-dorsal scoliosis, which he believes to have been caused by carrying heavy loads in the right hand or on the right shoulder during boyhood. As to the plausibility of such an explanation each one must determine individually. Both feet show the deformity which is known as *pes cavus*, *pied bot* of the French writers. The plantar surface of each foot is very much hollowed beneath the arch, while all the toes are forcibly extended save the first phalanx, which tends to claw the floor. When the patient stands, titubation of the whole body is the most striking phenomenon, and this persists, though to a lesser degree, when he sits. The gait is ataxic and reeling; unlike the ordinary taboid patient, he does not watch his feet while walking. He is rather more inclined to fix some point at or near his objective, and keep his vision on it until he reaches it. Station is extremely uncertain when the feet are approximated, and when he closes the eyes under such circumstances he is pretty sure to fall. The superficial, or cutaneous, reflexes are present. The tendon jerks of the lower extremity are all absent, while of the upper extremity they are all present. The right palpebral fissure is somewhat larger than the left, and to explain this the patient says that it followed an attack of sore eyes. The pupils are of medium size, slightly asymmetrical, and do not respond to light. When the backgrounds of the eyes are viewed with the ophthalmoscope the left optic discs appear rather pale — a state of pink atrophy. The right optic nerve is normal. Tactile and thermal sensibilities seem to be normal. There is well-marked analgesia over both legs. The patient has been examined four times only with great care, but the analgesia seemed to be present on each occasion, although varying somewhat in intensity. There is no perversion of sensibility in any other part of the body. Color sense is normal, and the visual fields are unchanged. Senses of smell, taste and hearing are intact. The trouble with speech and writing have been already sufficiently referred to above.

Now, the question arises, Has this patient Friedreich's disease, or has he multiple sclerosis? Perhaps, indeed, this question is not sufficiently comprehensive. Some may be inclined to ask, and legitimately, I think, "Can disease of the cerebellum be eliminated on the one hand, and genuine tabes on the other?" Personally, I am inclined to the opinion that the case is one of disseminated insular sclerosis, although perhaps the evidence pointing to such a diagnosis is not so direct or convincing as some might wish. If a brief analysis of the symptoms be made, it will at once be seen that there exists a certain number of conditions which are usually considered inimical to the diagnosis of Friedreich's disease. These are: (1) the patient's age; (2) the sensory disturbances; (3) the perversion of function of the uro-genital sphere; and (4) loss of the pupillary light reflex, and paleness of the temporal side of the optic nerves. On the other hand, all of these, and the other symptoms and physical accompaniments which the patient presents, including the deformities of the trunk and feet, can be explained by the existence of islets of sclerosis in the posterior columns, in the oblongata, and possibly in the cerebellum. If my diagnosis be the correct one you will agree with me, I think, that it is one of the most atypical thus far reported.

Dr. Sachs said he was of the opinion that the case was probably a somewhat atypical example of multiple sclerosis. There was, after all, not so much difference between this case of multiple sclerosis and the cases of combined sclerosis that one sees, for he had observed cases of combined sclerosis which at one stage had presented all the symptoms of a spastic paralysis, and subsequently the appearance of typical tabes.

Dr. Fisher said he would agree with the diagnosis of disseminated sclerosis, basing it largely on the mental condition and the character of the speech, particularly the former.

REMARKS ON THE KIDNEYS IN CASES OF CEREBRAL HEMORRHAGE AND CEREBRAL SOFTENING.

Dr. Christian A. Herter read a paper with this title, in which he gave some of the results of his observations in 464 autopsies on adults at the Presbyterian Hospital. There were 23 cases of cerebral hemorrhage, 11 of cerebral softening, and one of softening and hemorrhage. The three cases of hemorrhage in patients with large kidneys showed the lesions of chronic diffuse nephritis. Six of the patients with small kidneys were males, while all the patients with large kidneys were females. Of the patients with large kidneys four had cerebral softening, two thrombosis, and two embolism. The great majority of the medium kidneys were granular. In the cases of cerebral softening the kidneys presented a granular surface and freely stripping capsules. According to this series of observations, cerebral hemorrhage was most frequent among persons with small granular kidneys, and least frequent in those having large kidneys. None of the cases of hemorrhage had smooth kidneys; on the other hand, the majority of the cases of cerebral softening were associated with smooth kidneys and freely stripping capsules. Where there is a high arterial tension, and the urine is of low specific gravity and contains very little albumin, and few, if any, casts, it may be inferred that the kidneys are small and granular, and this condition in cerebral cases points strongly to hemorrhage.

Dr. Mary Putnam Jacobi said that she had recently seen a case which bore on the relation of uremia and hemorrhage. The patient was a woman of about forty-five, who had been previously in excellent health. She awoke one morning to find that her vision was extremely dim. The next day she complained of double vision, and a paresis of the abducens appeared, and increased until the muscle became completely paralyzed. The urine on several examinations was found entirely free from albumin, and granular casts were found without the use of the centrifuge. The urine contained a large quantity of urea. The dimness of vision was probably uremic, and the paresis of the abducens due to a very minute hemorrhage in the sixth nerve.

Dr. Herter said that it seemed to him probable that in Dr. Jacobi's case the symptoms were due to hemorrhage rather than edema, although the latter should always be borne in mind. It was a common thing to find considerable urea during the uremic state. This was probably to be explained by a gradual accumulation of the urea in the blood, owing to the defective action of the kidneys, and this accounted for the fact that these patients often pass a normal quantity of urea in the urine at the time that the symptoms of acute uremia are present.

TRAUMATIC HEMATOMYELIA, WITH REPORTS OF CASES, WITH AND WITHOUT AUTOPSY.

Drs. Pearce Bailey and **P. R. Bolton** presented a paper on this subject from which extracts were read by **Dr. Bailey**. Speaking of that class of cases in which the hematomyelia is consequent upon injury to the spinal column, the authors said that in a large proportion the general destruction of nerve tissue is so severe that hemorrhage can have had but little influence. The blood is poured out first and most profusely into the gray matter, and this central limitation is often very sharply defined. The columnar extension of the blood is usually in the gray matter of the anterior or posterior horns, and the column extends farther upward than downward. Occasionally it may extend into the white matter just behind the middle commissure. These hemorrhages are most commonly found at autopsy between the fifth cervical and the third dorsal segments. The lower dorsal or lumbar cases either do not come to autopsy or only after so long a time that it is difficult to draw definite conclusions regarding the pathological findings. The evolution of the lesion in spinal hemorrhage is somewhat obscure. The natural tendency is to absorption of the blood, so that cavity formation is an early consequence of hematomyelia. A symptom of some importance is a band of thermo-anesthesia, extending a little distance above the general anesthesia. In primary hematomyelia, bleeding into the substance of the cord constitutes the primary lesion. There are two forms, namely, (1) the localized, and (2) the disseminated. A force sufficient to rupture the blood-vessels of the spinal cord must affect the nerve elements ; hence when bleeding is prominent it is reasonable to expect lesions of the nerve cells. In the majority of cases, however, the hemorrhage is the most important factor. The focal form of primary hematomyelia is always found in the lower cervical or upper dorsal region. Most of the cases result from falls. One form of injury which is especially fertile in producing this injury is a sudden bending of the neck, such as occurs in falling of heavy weights on the neck, diving in shallow water, etc. The symptoms differ from those of crushes of the cord, in which the white and gray matter are both implicated. The paralysis is at first flaccid everywhere, and the reflexes generally are either diminished or lost. An injury to any part of the spinal cord above the upper lumbar region severe enough to cause paraplegia will usually inhibit or abolish the knee-jerk for a time. This is eventually followed by an exaggeration. In the muscles of the lower extremities the paralysis usually changes within three weeks from the flaccid to the spastic type. Immediately after the accident, the paralysis of motion is usually widespread and severe. Sensibility to touch is little, or not at all, modified in primary focal hematomyelia ; there is, however, analgesia or thermo-anesthesia, or both. In the cases reported the power to distinguish between heat and cold was lost, while sensibility to pain was unaffected. Compared to the prognosis of secondary cases of injury, the outlook in primary focal hematomyelia is favorable. Primary disseminated hematomyelia occurs after severe general traumatism. In these cases capillary hemorrhages were found throughout the cerebrospinal axis. Microscopic examination shows small masses of red blood cells lying, for the most part, in the gray matter, but also in the white matter. They are not accompanied by other evidence of destruction, and are not artefacts.

Dr. **Sachs** said that there seemed to be every reason to suppose that in many cases which were classified as of secondary origin there must have been effusion not only into the cord but around the cord. On this account, the question arose as to whether many of the symptoms might not be due to compression of the root fibres. He had seen dissociation of sensation as one of the earliest symptoms of Pott's disease and Pott's paralysis. It need not, therefore, be a symptom of destruction of the gray matter. He recalled a series of cases that were not traumatic in origin, were rather slow of onset, and occurred in adults, and yet presented all the typical symptoms described under the head of hematomyelia. The question arose as to whether in the non-traumatic cases the peculiar arrangement of the blood-vessels in the spinal cord might not account for some of the cases in his series. A case now under observation was instructive for the reason that the lower extremities alone were affected, and there was an association of the spastic symptoms with a dissociation of sensation.

Dr. **Onuf** said that he had seen the case just referred to by the last speaker. The patient stated that soon after a tiresome bicycle ride he noticed that he could not urinate easily. The next morning there was a tingling sensation in the legs, but it was not for five days that a partial paraplegia appeared. At this time incontinence of feces was also noticed. There was atrophy of the leg, affecting chiefly the adductors of the right thigh. The sensation of pain was exaggerated, so that there was a marked drawing up of the limb when it was pricked. The difficulty of urination was followed by incontinence. The atrophy in the thigh would seem to indicate a higher lesion, while, on the other hand, the initial bladder and rectal symptoms would point to a lower lesion.

Dr. **Fraenkel** said that he thought the abolition of the reflexes in such cases as those described in the paper was of much diagnostic importance. Enough cases had been reported to show that even in the face of the absence of the reflexes it was possible for a communication to exist between the upper and lower portions of the cord. He regretted that the condition of the deep sensibility had not been recorded in the cases quoted.

Dr. **Bailey** remarked that in one case in which the reflexes were absent the muscular sensation had returned.

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Recent Literature.

Diet and Food Considered in Relation to Strength and Power of Endurance, Training and Athletics. By Alexander Haig, M.A., M.D., F.R.C.P., Physician to the Metropolitan Hospital. London: J. & A. Churchill. Philadelphia: P. Blakiston, Son & Co. 1898.

The treatment of this important subject in this work of Dr. Haig is full of interest. The theories in regard to the conditions which influence nutrition and force production in the animal body, upon which the author bases his conclusions, are not, however, those which are accepted by most physiologists. This fact makes us hesitate in accepting these conclusions and detracts from the value of the book from a scientific point of view.

The review of the whole subject is made too dependent upon Dr. Haig's peculiar views in regard to the action of uric acid as a cause of the disorders of the organism. Doubtless the observations of the author are correct, and there is in his theories therefrom deduced a part of the truth. If we could but get his facts away from his theories we could make more use of them.

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TEMPERANCE INSTRUCTION IN THE PUBLIC SCHOOLS.

IN 1885 a law was enacted in Massachusetts (Chap. 332) providing for the teaching of physiology and hygiene with special reference to the effects of alcoholic drinks, stimulants and narcotics upon the human system, as a regular branch of study for all pupils in all common schools, supported wholly or in part by public money. The penalties for non-compliance were the same as those provided for other studies. This law has been in force to the present day.

Meanwhile temperance extremists have been successfully occupied in passing far more stringent laws in most of the States of the Union. They have now turned their attention once again to Massachusetts and, on the plea that the present law permits too much latitude to the personal opinions of the teacher as to methods of teaching and even, by the absence of a special penalty, makes it possible that no instruction should be given, they have introduced a bill into the Senate (No. 41) with more definite provisions for temperance instruction. This bill calls for "instruction in the nature of alcoholic drinks and other narcotics and their effects on the human system in connection with the several divisions of physiology and hygiene," in all the grades of all the public schools below the second year of the High School, to the extent of three hours per week for from ten to fourteen weeks of each school year. Text-books are to be used in all grades above the third year of the primary school and must have in connection with every main topic of physiology and hygiene a discussion of the effects of alcohol and narcotics which must occupy one-fifth of the contents. Information on this subject, which is collected into a separate chapter or appendix, cannot be taken as forming any part of this one-fifth.

To insure against any evasion of the law, school officers who fail to comply with any of the provisions of the law shall pay a fine of from five to twenty-five dollars. Failure to comply with all the provisions of this act on any school day shall be considered an offence. The Secretary of the State Board of Education is constituted a detective to discover the violations of the law, and it is his duty to see that violators are prosecuted. He is also required to report annually to the Legislature any failure to comply with the law. Trial justices, district, municipal and police courts are to have jurisdiction under this act.

An examination of the text-books which have been approved by the promoters of this bill shows that the emphasis is placed very largely on the physiological and pathological effects of alcohol, to the more or less complete exclusion of general hygienic topics of equal importance. Pupils in the primary and grammar grades are too young to understand these details and consequently are unable to get an intelligent grasp of the subject as taught. That the use of alcohol gives rise to hyperplasia of the connective tissue in the liver is for children difficult of comprehension, since the teacher cannot show the pupil the microscopic structure of the liver and demonstrate the significance of the liver cells and the connective tissue. That the use of alcohol frequently leads to poverty and crime, to cruelty and suffering, however, is easy for children to grasp. To give instruction in temperance by emphasizing its social and moral aspects is to act in accordance with the acknowledged principle of modern education that children must have a concrete basis for that which they are called upon to study; to give instruction in pathological anatomy and physiology is to subvert it.

Furthermore, the amount of space devoted to the nature and effects of alcohol and to an anatomical and physiological basis for the presentation of these effects precludes the possibility of an adequate treatment of such topics of personal and general hygiene as food, exercise, diet, sleep, precautions against cold and wet, the spread of contagious diseases, etc. While a knowledge of the nature and effects of tuberculosis or typhoid leads to the taking of intelligent precautions against them, it has only too often been proved that a similar knowledge of alcohol is no safeguard.

Another bill is at present before the House (No. 817) which is planned to obviate many of the disadvantages of Bill No. 41. It calls for instruction in physiology and hygiene with special reference to the effects of stimulants and narcotics upon the human system, to all pupils in the highest grade of all public grammar schools and in one year at least of all the public high and Latin schools. It does not call for special text-books but provides that no text-book shall be used which has not received the approval of the Chairman and Secretary of the State Board of Health and the Secretary of the State Board of Education. The latter clause will protect teachers and school officers against the present well-recognized pressure brought in favor of text-books representing extreme temperance propaganda by well-meaning but often ignorant local temperance organizations and by the publishers of text-books.

The history of the passage of bills similar to No. 41

in other States, in spite of the consistent and vigorous opposition of all the school superintendents, teachers and committees, as well as ministers and philanthropists, makes one question the methods of its accomplishment. In New York, for example, there was wholesale signing of the petitions on the ground of a general interest in temperance, without a clear conception of the significance of the bill. Its unanimous passage may very possibly be explained by the remark of a senator when asked how he came to vote for it: "Because it was impossible of enforcement, it could do no harm, and it pleased the ladies." In Massachusetts we hope for such an intelligent consideration of this measure as will not be unduly influenced by importunate and emotional appeals.

REPORT OF THE WAR INVESTIGATING COMMITTEE.

Details regarding the management of the War with Spain, and its medical aspects, which particularly concern us, have been so thoroughly discussed and from so many points of view that the final appearance of the Commission's official report offers comparatively little with which we are not already familiar. It must, however, be of value in fixing our ultimate judgments as to so-called abuses and incompetency in the period during, and immediately following, the war.

In the first place, the Commission has decided that "there was lacking in the general administration of the War Department during the continuance of the War with Spain that complete grasp of the situation which was essential to the highest efficiency and discipline of the army." Apart from any inherent weaknesses it may itself have had, it is not surprising that the Medical Department should have come in for its share of censure. The general mismanagement of transportation was in itself sufficient to handicap seriously the work of the surgeons. As the report puts it: "The loading, shipping and unloading of medical stores are not done under the orders of the Medical but of the Quartermaster's Department, and the Medical Department is not responsible therefor." Farther on in the report we read: "The responsibility for the conditions at Chickamauga rests upon those who assembled over 60,000 raw levies and kept the great mass of them together for weeks, and upon those whose duty it was to inspect, advise, and order — officers, medical and military, regimental, brigade, division, corps, and of the camp, and the higher the authority the greater the responsibility." . . . "Praise should be given to the well-trained, faithful, hard-working and over-worked surgeons, who, on the fighting lines and in the hospitals, thoroughly discharged their duty, and who, as General Young has said, 'deserve the thanks of the American people for their splendid work.'"

It is pointed out that mistakes were made in sending so large a number of men to Montauk, when the hospital there established was not properly prepared for their accommodation and medical care. As Camp Wikoff was to be a place of rest and recuperation for the sick army expected from Cuba, and at the same time a quarantine station for the protection of the country. it would certainly, for every reason, have been better if these thousands of men and animals had not been ordered to Montauk. Their arrival and presence increased the confusion and added to the burdens of all officials, military and railroad. Hospitals established after the middle of August at various places were conducted in such a way as to give no good ground for criticism.

A cause of complaint to which the Commission refers, and certainly one to which much attention has been directed, was the inexperience of officers and surgeons as to proper methods of sanitation, a serious defect which measures should be taken to remedy.

The report discusses in detail essentially all the matters which have been occupying so much space within the lay and professional journals, and, on the whole, is judicial in the statement of its conclusions, which are as follows:

(1) That at the outbreak of the war the Medical Department was, in men and materials, altogether unprepared to meet the necessities of the army called out.

(2) That as a result of the action through a generation of contracted and contracting methods of administration, it was impossible for the Department to operate largely, freely, and without undue regard to cost.

(3) That in the absence of a special corps of inspectors, and the apparent infrequency of inspections by chief surgeons, and of official reports of the state of things in camps and hospitals, there was not such investigation of the sanitary conditions of the army as is the first duty imposed upon the Department by the regulations.

(4) That the nursing force during the months of May, June and July was neither ample nor efficient, reasons for which may be found in the lack of a proper volunteer hospital corps, due to the failure of Congress to authorize its establishment, and to the non-recognition, in the beginning, of the value of women nurses and the extent to which their services could be secured.

(5) That the demand made upon the resources of the Department in the care of sick and wounded was very much greater than had been anticipated, and consequently, in like proportion, these demands were imperfectly met.

(6) That powerless as the Department was to have supplies transferred from point to point, except through the intermediation of the Quartermaster's Department, it was seriously crippled in its efforts to fulfil the regulation duty of "furnishing all medical and hospital supplies."

(7) That the shortcomings in administration and operation may justly be attributed, in large measure,

to the hurry and confusion incident to the assembling of an army of untrained officers and men, ten times larger than before, for which no preparations in advance had been or could be made because of existing rules and regulations.

(8) That notwithstanding all the manifest errors, of omission rather than of commission, a vast deal of good work was done by medical officers, high and low, regular and volunteer, and there were unusually few deaths among the wounded and the sick.

The Commission makes definite recommendations for the future conduct of the Medical Department, urging the necessity of a larger force of commissioned medical officers; authority to establish in time of war a proper volunteer hospital corps; the establishment of a reserve corps of selected trained women nurses; extra supplies of all sorts to be held constantly on hand; improvement in transportation; less red tape; the authorization of surgeons to purchase such articles of diet as may be necessary for the proper treatment of soldiers too sick to use the army ration.

On the whole, we must regard the report as a fair statement of the conditions as derived from the evidence at the disposal of the Committee.

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MEDICAL NOTES.

Death of Dr. Wolffhügel. — The death of Dr. G. Wolffhügel, Professor of Hygiene in the University of Göttingen, is announced.

Professor Helferich, of Greifswald, has been appointed to the chair of surgery at the University of Kiel, in succession to Professor v. Esmarch, who retires on account of age.

Two Chairs of Pathology. — It is stated that the chairs recently made vacant by the deaths of Professor Kanthack, of Cambridge, and Professor Coats, of Glasgow, are to be filled during March.

A Memorial to Dr. Müller. — The Vienna Medical Club has voted the sum of three hundred gold crowns for the foundation of a prize in memory of Dr. Hermann Franz Müller, whose recent death from the plague will be remembered.

Massage and Blood. — At the recent meeting of the American Physiological Society, Dr. J. K. Mitchell, of Philadelphia, reported observations on the effect of massage on the blood. He found that in health massage increases the number of red corpuscles and to some extent their hemoglobin value; that in anemia there is a very constant and large increase in the number of red corpuscles after massage.

Removal of Remains of Deceased Soldiers. — The surgeon-general has decided that it would neither be advisable nor safe to remove to this country the remains of soldiers who died in Cuba during the spring and summer months before the following winter, and this opinion is concurred in by the Secretary of War. A special officer has been detailed in each department of Cuba to superintend the disinterment of bodies and see to their proper preparation and shipment.

Hospital Ship for the Philippines. — According to the *Medical News* the hospital ship *Relief* left Washington on the 15th inst., and will proceed to Manila *via* the Suez Canal; she has on board 150 additional hospital-corps men, 10 to 15 acting assistant-surgeons, a number of hospital stewards, and a large quantity of medical supplies for the sick and wounded. The *Relief* will, after reaching Manila, become a floating hospital, for which purpose she is provided with 300 beds.

Typhoid Fever Cases among the Troops at Huntsville, Ala. — In all 418 cases were admitted to the First District United States Army Hospital, of which the mortality was 8.1 per cent. This mortality is not high, considering the usually depressed condition of the patients on entering, many having undergone the vicissitudes of the campaign against Santiago. The treatment was entirely expectant. Tubbing, wet pack and sponging with cold water for high temperature, strychnine and alcohol for depression. The diet was exclusively milk during continuance of pyrexia.

Pemphigus in the Philippines. — Late reports show the existence of a considerable proportion of this disease among the troops at Manila, as well as among the natives. It appears to have been largely considered by the Spanish surgeons as being of a syphilitic nature, and its contagiousness and auto-contagiousness not sufficiently realized. It is one of the foulest of skin affections, and while only one case among the soldiers proved fatal, a small area in the groin or axilla may readily unfit a man for duty. It is said that several cases have had so large an area of skin involved as to show marked uremic symptoms.

An Anti-Vaccination Congress. — We learn from the *Medical Record* that the president of the English Anti-Vaccination League has given notice that an international anti-vaccination congress will be held in Berlin in June. In the meantime the German league has petitioned the Reichstag for the abolition of compulsory vaccination in Germany, but fortunately has not the slightest chance of succeeding. One of the apostles of the movement has just completed a two months' tour of the United States for the purpose of conferring with the leaders of the lunacy in America. It is intended to send some American delegates to the Berlin conference.

Water Transportation of Wounded at Siboney. — A belated report of the officer in charge calls attention to the fact that the four transports loaded with wounded, under supervision of army medical officers, the *Iroquois*, *Cherokee*, *City of Washington* and *Breakwater*, brought their wounded to the United States without great discomfort, a single death or, so far as known, a single criticism from any source. In spite of the fact that no facilities for their transportation had been provided by the Quartermaster's Department, over 1,200 wounded and helpless men were brought off from shore in small boats through a heavy surf, and landed on transports rolling half a mile or so at sea, without an accident of any kind. It should be remembered that in the disembarkation of troops a number of boats were destroyed and several soldiers drowned.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the eight days ending at noon, March 1, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 66, scarlet fever 38, measles 180, typhoid fever 4.

Another Hearing Relative to Osteopathy. — A second hearing of the remonstrants against the bill asking for the recognition by the State of the so-called osteopathic school of practice will be held at the State House, March 8th, at 11 A. M. It is to be hoped that members of the medical profession will be present in sufficient numbers to make an effective remonstrance against the passage of the bill.

Restriction of Athletics. — President Eliot's recently expressed view regarding the limitations to be put upon Freshman athletic contests has taken somewhat definite form in a recent meeting of the Harvard Athletic Committee, in which it was voted that the Freshman football team be not allowed to play games outside of New England. This is the beginning of an attempt to keep athletics at home and also to discourage violent contests by the entering class. Certain other restrictions are also likely to be made, provided the co-operation of other colleges can be obtained. In general the action of the committee is designed primarily to discourage Freshmen from overmuch attention to athletics when they first enter college. The expression of willingness to join with the other universities in adopting a rule cutting off Freshmen from university teams shows the readiness of Harvard to still further limit the athletic horizon of the Freshman.

Boston Society of Medical Sciences. — At a meeting of the Society held February 21st Dr. Franklin W. White read a paper on "Blood Cultures in Sepsis, Pneumonia, Meningitis and Chronic Disease." He had examined 92 cases, and found that a positive result in the blood went with a bad prognosis. He drew attention to the importance of agonal invasion, but was of the opinion that the bacteriological results of autopsies made shortly after death corresponded in general to the conditions during life. Dr. E. H. Bradford demonstrated a series of clay casts and lantern slides illustrative of the "Flexibility of the Human Foot." Dr. Allen Cleghorn gave the results of interesting experiments relative to "Sympathetic Ganglia and Blood Pressure." He found that a glycerine extract of sympathetic ganglia injected into rabbits gave a pronounced fall in blood pressure, whereas a similar extract from the suprarenals gave a rise. The observation was of great interest, inasmuch as histologically and developmentally the two structures are supposed to be identical. Dr. G. B. Magrath demonstrated an extensive subpial brain hemorrhage, chiefly confined to the base, and a large cyst of softening in the brain of a woman who had had right hemiplegia and aphasia.

The Antivivisection Embroglio. — *Science* comments as follows on the difficulties in the New England Antivivisection Society: "A suit is being brought by the treasurer of the New England Antivivisection Society to prevent the former president from disposing of the funds of the Society. A lawsuit is, perhaps, the most innocent disposition that could be made of these funds."

Meeting of Corporation of Massachusetts Infant Asylum. — The corporation of the Massachusetts Infant Asylum held its annual meeting last week. It was reported that of the 175 babies cared for during the year only four had died, the lowest mortality-rate in the history of this institution, or any other of its class. Dr. Charles P. Putnam was elected President of the Board of Directors.

Annual Meeting Instructive District Nursing Association. — The annual meeting of the Instructive District Nursing Association has been recently held. The treasurer reported a deficit for the past year and the necessity of dispensing with some of the district nurses unless the income of the organization can in some way be augmented. Addresses were made by Dr. William L. Richardson, Dr. Francis Denny and Dr. Elliot Joslin. The retiring president, Miss Hannah A. Adam, was the first to organize instructive district work in this country. An energetic attempt is to be made to create a permanent fund for the association. In view of the importance and value of the work of the association it is to be hoped that the effort will be successful.

NEW YORK.

The New York Post-Graduate Hospital. — The fourteenth annual report of the Directors of the New York Post-Graduate Hospital, just published, states that during the past year 523 practitioners of medicine, from fifty-two States, Territories and countries, attended the medical school. The institution was early among those to ask the medical authorities of the army and navy to send sick or wounded soldiers and sailors to its wards for treatment, and thirty-nine soldiers became inmates of the hospital.

A Plea of Insanity for Mrs. Place. — As a result of a hearing before him in behalf of the convicted murderess, Mrs. Martha Place, in which her counsel urged the plea of insanity, Governor Roosevelt has appointed a medical commission, consisting of Drs. William M. Polk and Charles L. Dana, of New York, to examine the mental condition of the condemned and determine, if possible, the question of her responsibility at the time the murder was committed.

A Bullet in the Heart for two Weeks. — An autopsy made by Dr. Riegelman, coroner's physician of the Borough of the Bronx, on the body of Mrs. Sarah Tefft, who shot herself on February 6th and died February 22d, has revealed the remarkable fact that the woman lived for over fourteen days with a bullet in her heart. The weapon used was a thirty-two-calibre pistol, and it was found that the bullet, having passed through the sternum, at the sixth rib, first punctured the left pleura and then the pericardium. It finally penetrated the muscular wall of the heart to the extent of an inch and a half, and remained in the pericardial sac.

Death from Diphtheria Contracted from a Patient. — Dr. Willard Avery Heacock died at his residence in New York on February 24th, of diphtheria, which he contracted from a patient. He was born in Gloversville, N. Y., and was thirty-two years of age. He was graduated from the Medical Department of Columbia University in 1892, and had since practised in New York.

Prisons should be Renovated. — The annual report of the State Superintendent of Prisons shows that there has been an increase over last year of sixty-three in the daily average of convicts in the three State prisons. The total population, however, still falls about 10 per cent. below the average for the five years, 1891 to 1895, inclusive. The mortality among the convicts amounted to 27 deaths, an increase of five over the previous year. This increase is stated to have been wholly in Auburn Prison. As in previous years, almost 60 per cent. of the total number of deaths was due to tuberculosis, from which disease fifteen patients died — ten in Auburn Prison, three in Clinton, and two in Sing Sing. An urgent plea is made for improved conditions in the antiquated prison buildings, and the report goes on to say: "The superintendent believes that where great bodies of men are confined it should be practicable to secure cleanliness and accompanying sanitary arrangements which will at least not tend to make the buildings unhealthy, and so impair the health both of the prisoners and the officers who are in constant charge of them. When the pursuit of employment for the convict population, or a portion of it, is active, the suggestion is often made that some labor be directed toward this work of reconstruction of badly-built, ill-contrived, and wholly unfit cell halls."

Rabies and Round Worms. — There can be no question that a vast number of "mad-dog scares" in the community are entirely groundless. With a view to allaying one of these recently on Staten Island, the agents of the Society for the Prevention of Cruelty to Animals, acting under orders from the president, Mr. John P. Haines, secured a dog reported to be rabid and to have bitten several persons, and took it to the Society's shelter at Stapleton. Three days later the animal died and its body was sent to the Loomis Laboratory, where an autopsy was made by Drs. H. P. Loomis, E. P. Shelby and Elmer Lee. The examination showed a curious pathological condition, as will be seen from the report of Dr. Lee, which is here given in part: "*First.* The dog's sickness and excitement were caused by from fifty to seventy-five round worms, seven to ten inches long and of the thickness of fine twine, nearly or quite filling the right side of the heart. *Second.* The immediate cause of death was a blood-clot in the heart. It was, therefore, a mistake to call the dog's disease rabies. Fortunately, those persons who were bitten by the dog are in no danger of hydrophobia, nor do they require the Pasteur treatment, for under such conditions the Pasteur inoculation might itself endanger the health of such as receive it."

Instruction in "First Aid." — The Society for Instruction in First Aid to the Injured held its annual meeting on February 15th. The report of the president, Charles H. Marshall, showed that during the year 1,110 persons had been instructed in the preliminary methods of treating injured persons pending the arrival of a physician, and that since the organization of the Society 11,102 persons had been so instructed. Lectures on the subject are now being given to firemen, policemen, pupils of the public schools and to private classes. In the public schools there are at present six classes, with 161 children receiving instruction. For this work the Society has lent the Board of Education its charts, skeletons and apparatus. In the Fire Department over 500 men have received instruction, and Chief Bonner has written a letter to the Society in which he speaks in the highest terms of the work accomplished. In the Police Department the Society has had 47 classes, and 1,868 men have received instruction. The Society has also made commendable progress in other cities, where new branch organizations have been formed.

Water-Supply of Greater New York. — William Dalton, the Commissioner of Water-Supply, has just presented to Mayor Van Wyck his report for the year 1898, the first annual report taking in the entire water-supply of the consolidated city. The report states that the watersheds of the Boroughs of Manhattan and the Bronx have an area of more than 300 square miles, and that there are 93 miles of conduits, with a maximum daily capacity of 400,000,000 gallons. The average daily consumption of water was 243,000,000 gallons, the minimum being 238,000,000 gallons, up to April, and the maximum 256,000,000 gallons, in the succeeding months up to September. In the Croton, Bronx and Byram watersheds the reserve supply, stored in ten reservoirs and five lakes, amounts to more than 42,000,000,000 gallons. Brooklyn's watershed has an area of 154 square miles, and the supply is from the Hempstead reservoir and fifteen ponds, with 1,283,480,000 gallons' capacity, and from streams and wells.

Miscellany.

SMALL-POX IN OUR NEW POSSESSIONS.

Reports recently received from army medical officers stationed in Porto Rico, Cuba and the Philippines call attention to the prevalence of small-pox among the native inhabitants, who are largely unprotected by vaccination. At Ciales, Porto Rico, upwards of one hundred cases have recently occurred, one case having appeared in the troop of the 5th Cavalry, stationed near that point. Thorough vaccination of the command and quarantine against Ciales prevented further outbreak among the troops. Under the direction of Chief-Surgeon Hoff a vaccine farm has been established in Porto Rico, under the charge of Contract Surgeon Ames, to supply the virus necessary for the general vaccination to be required among the natives. Virus shipped from this country to the tropics is understood to rapidly deteriorate. From Cuba, Major-General (Dr.) Wood reports that the small-pox epidemic in Holguin now appears to be under control. He states that while over 6,000 cases of a virulent type of small-pox lately existed in that town and vicinity, it has been reduced to 1,200 by the intelligent and energetic efforts of Capt. R. S. Woodson, Assistant Surgeon, U. S. Army, who now appears to have the situation well in hand. In the province of Pinar del Rio an epidemic of small-pox, with relatively high mortality, was found to exist among the Cuban population on the arrival of the troops after the Spanish evacuation. Under the supervision of the chief surgeon of the department free vaccination was at once begun among the natives by the Cuban physicians.

As has been noticed in the daily papers, a number of deaths from variola have occurred among our troops at Manila, a large proportion among the less carefully vaccinated volunteers. In a report which has just been received from that point it is stated that among the Filipinos the disease is essentially one of childhood, all the adults being immunes, and vaccination is not encouraged by their fatalistic tendencies.

Vague rumors of the existence of cases among the natives living at Cavité could not be definitely substantiated until a case occurred in the family of a laundress who had been doing washing for the American troops. Every precaution was at once taken. The family was scrubbed in bichloride and the entire contents of the house, including laundry, clothing and furniture, were burned and satisfactorily compromised for in the sum of $12.75 Mexican. A large part of the laundered clothing had already been distributed to the owners, however, and a smart outbreak of variola soon followed among the troops. An isolation hospital was at once provided, surrounded with barb wire and protected by sentries. Up to November 23d there were treated in this hospital sixty-three cases, of which eight were in natives or Spaniards. Considering that the original type is very virulent, many cases among the natives being confluent or hemorrhagic, the mortality of 29 per cent. is not to be considered high. It is interesting to note that a horse driven in the small-pox ambulance was taken sick and was shot, on the decision of a competent veterinarian that it was affected with small-pox. The report concludes that the infection is endemic and that it is spread through the medium of the markets, laundries, low drinking dens and houses of prostitution. It has also been necessary for the regiments furnishing the Provost Guard for Manila to closely associate with the natives and enter their houses frequently. Early in October vaccine virus ordered from Japan began to arrive, and vaccination and revaccination was begun.

General orders were promptly issued requiring that every enlisted man who had not been successfully vaccinated within six months should be revaccinated at intervals of two weeks for not less than three times after date of the order unless sooner successful. It is not anticipated that there will be any large mortality from this disease in the future.

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GENEALOGY AS A SCIENCE.

In his opening address before the last meeting of the German Anthropological Society, Prof. Johannes Ranke emphasized the value of genealogical investigation as an aid to anthropology. By it we learn the facts of heredity, the influence of kinship, the consequences of intermarriage of relations, the permanence or variation in family traits, psychical and physiological peculiarities and their transmission, the tendency to reversion of types, the effect on the children of marriages at different ages, and many more points of very great interest.

For genealogy, however, to be thus promoted to the dignity of a science it is necessary that those who cultivate it should be willing to tell the truth about the family trees in which they are interested; and in America, notably in Philadelphia, they are yet a long way off from taking this position. — D. G. Brinton, in *Science.*

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Obituary.

EDWARD P. HURD, M.D.

Edward P. Hurd, M.D., of Newburyport, Mass., died in that city on February 24th of pneumonia, resulting from exposure on a train which was stalled during the great snow storm on February 20th.

Dr. Hurd was born sixty years ago, in Newport, Can., and received his medical degree at the McGill Medical College at Montreal. After practising for some years in Danville, P. Q., he removed to Newburyport in 1870. Here he not only acquired a large private practice but was active in local, public and educational affairs. He served on the school committee, was a director of the public library, and for a long term of years was city physician. Since 1893 he had been medical examiner for the Third Middlesex District. He was for two years president of the Essex North District Medical Society.

Dr. Hurd was a man of great industry and erudition, and an indefatigable student of medical literature.

He was a frequent contributor to the Journal, and his work showed extensive familiarity with French and German medical thought.

He had been professor of pathology in the College of Physicians and Surgeons, Boston, and was, from its foundation, a member of the staff of the Anna Jacques Hospital in Newburyport.

Dr. Hurd was a man of many and varied activities, who will be greatly missed in the community in which he lived. He left a widow, a son, Dr. Randolph C. Hurd, who is in practice in Newburyport, and two daughters.

METEOROLOGICAL RECORD

For the week ending February 18th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer: Daily mean.	Thermometer: Daily mean.	Thermometer: Maximum.	Thermometer: Minimum.	Relative humidity: 8.00 A. M.	Relative humidity: 8.00 P. M.	Relative humidity: Daily mean.	Direction of wind: 8.00 A. M.	Direction of wind: 8.00 P. M.	Velocity of wind: 8.00 A. M.	Velocity of wind: 8.00 P. M.	We'th'r. *: 8.00 A. M.	We'th'r. *: 8.00 P. M.	Rainfall in inches.
S...12	30.39	6	10	2	89	91	90	N.W.	N.W.	10	10	N.	N.	.16
M..13	29.52	12	16	7	91	100	96	N.	N.	21	30	N.	N.	.81
T...14	29.86	20	27	13	65	49	57	N.W.	W.	24	12	F.	C.	.11
W..15	30.46	22	34	9	82	50	66	W.	S.W.	12	14	C.	O.	
T...16	30.21	34	42	25	57	62	60	W.	S.E.	7	5	O.	O.	
F...17	29 89	42	50	33	85	72	78	N.W.	S.W.	10	12	O.	R.	.22
S...18	29.82	43	51	35	88	92	90	S.W.	S.W.	7	13	C.	R.	.09
☞	30.02	26	33	18	80	74	77			13	14			.20

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, February 18, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1387	407	8.00	14.96	.64	.40	2.96
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	537	156	10.64	16.72	.19	7.22	3.04
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	213	65	9.40	24.91	.47	.94	5.17
Baltimore . .	506,389	222	69	7.65	18.45	—	.45	5.40
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	—	—	—	—	—	—	—
Washington .	277,000	157	58	5.76	24.32	.64	.64	2.56
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	80	24	5.00	25.00	—	—	2.50
Nashville . .	87,754	44	11	11.35	11.00	11.35	—	—
Charleston . .	65,165	35	11	—	8.55	—	—	—
Worcester . .	108,240	35	13	2.85	8.55	—	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	38	8	5.26	23.67	—	—	2.63
Lowell . . .	88,641	32	10	—	12.52	—	—	—
Lynn	66,703	21	4	4.76	14.28	—	—	—
New Bedford .	66,340	33	8	9.09	15.15	3.03	—	3.03
Somerville . .	61,101	20	3	5.00	25.00	—	—	5.00
Lawrence . .	57,263	24	10	33.28	12.48	16.66	4.16	8.32
Springfield . .	56,501	17	6	17 64	23.52	—	5.88	—
Holyoke . . .	43,424	16	9	12.50	18.75	—	—	12.50
Brockton . .	37,278	12	4	—	16.66	—	—	—
Salem	36,883	18	—	—	16.66	—	—	—
Malden . . .	34,613	—	—	—	—	—	—	—
Chelsea . . .	33,468	11	2	18.18	—	—	—	9.09
Haverhill . .	32,022	16	2	56.25	31.25	31.25	6.25	12.50
Gloucester . .	30,589	10	3	—	—	—	—	—
Newton . . .	29,716	9	—	—	22.22	—	—	—
Fitchburg . .	29,438	5	1	—	—	—	—	—
Taunton . . .	28,167	21	2	14.28	14.28	—	4.76	4.76
Everett . . .	25,338	4	3	25.00	25.00	—	—	25.00
Quincy . . .	23,549	6	2	—	33.33	—	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	11	3	—	—	—	—	—
North Adams .	20,971	10	2	—	10.00	—	—	—
Chicopee . .	17,842	9	2	—	33.33	—	—	—
Medford . . .	16,511	6	—	33.33	—	—	—	—
Newburyport .	14,915	5	—	—	—	—	—	—
Melrose . . .	14,032	2	—	—	—	—	—	—

Deaths reported 3,103; under five years of age 884; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 362, acute lung diseases 689, consumption 362, diphtheria and croup 103, typhoid fever 53, diarrheal diseases 26, scarlet fever 25, erysipelas 14, cerebro-spinal meningitis 9, whooping-cough 8.

From scarlet fever New York 16, Boston and Baltimore 2 each, Philadelphia, Washington, Providence, Cambridge and Chelsea 1 each. From cerebro-spinal meningitis Holyoke 2, Boston, Baltimore, Washington, Worcester, Lynn, New Bedford and Chelsea 1 each. From erysipelas New York 9, Boston, Baltimore, Springfield, Haverhill and Taunton 1 each. From whooping-cough New York 5, Boston, Providence and Haverhill 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending February 11th, the death-rate was 21.9. Deaths reported 4,797; acute diseases of the respiratory organs (London) 481, whooping-cough 114, diphtheria 111, measles 68, fever 49, diarrhea 33, scarlet fever 28.

The death-rates ranged from 11.1 in Burnley to 32.4 in Preston; Birmingham 22.2, Bradford 17.0, Derby 20.1, Gateshead 18 1, Hull 16.2, Leeds 20.9, Liverpool 30.5, London 22.8, Manchester 25.0, Newcastle-on-Tyne 19.4, Portsmouth 20.0, Salford 22.7, Sheffield 19.6, Sunderland 27.9, West Ham 16.3.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING FEBRUARY 23, 1899.

Kinyoun, J. J., passed assistant surgeon. To proceed to Albany, Ga., for special temporary duty. February 18, 1899.

Wertenbaker, C. P., passed assistant surgeon. To rejoin station at Wilmington, N. C. February 20, 1899.

Bready, J. E., acting assistant surgeon. Granted seven days' extension of leave of absence from February 9, 1899. February 18, 1899.

Gerrish, W. H., acting assistant surgeon. Granted leave of absence for thirty days on account of sickness. February 18, 1899.

O'Reilly, W. J., acting assistant surgeon. Granted leave of absence for two days from February 28, 1999. February 16, 1899.

Phillips, E. L., acting assistant surgeon. Granted leave of absence for fifteen days. February 18, 1899.

RESIGNATION.

Phillips, E. L., acting assistant surgeon. Resignation accepted as tendered, to take effect upon the appointment and qualification of his successor. February 9, 1899.

APPOINTMENTS AND RESIGNATION.

Edward N. Whittier, M.D., has been appointed one of the Board of Consultation of the Massachusetts General Hospital.

Franklin S. Newell, M.D., has been elected a physician to out-patients of the Boston Lying-in Hospital in place of **Charles W. Townsend, M.D.**, who has resigned.

CORRECTION.

In the review of "The Practitioner's Manual," by Charles Warrenne Allen, published on February 2, 1899, p. 122, the name of the publishers, Messrs. William Wood & Co., was unintentionally omitted.

SOCIETY NOTICE.

Suffolk District Medical Society, Surgical Section.— The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, March 8, 1899, at 8.15 o'clock.

"The Operation for Imperforate Anus, with Report of a Case," by Dr. Farrar Cobb. Dr. H. L. Burrell will show a patient and Drs. W. M. Conant and C. A. Porter have been invited to discuss the paper.

"Remarks on Actinomycosis," by Dr. J. H. Wright.

Dr. G. H. Monks will demonstrate a "Specimen of Strangulated Hernia," and one of "Intestinal Anastomosis," the latter being found at autopsy two and one-half years after operation.

The presentation of specimens, apparatus, etc., of surgical interest is invited.

Paul Thorndike, M.D., *Secretary*, 244 Marlborough St.

RECENT DEATH.

Edward Payson Hurd, M.D., M.M.S.S., died in Newburyport, February 24, 1899, aged sixty years.

BOOKS AND PAMPHLETS RECEIVED.

Report of the Kensington Hospital for Women (Non-sectarian) from October 11, 1897 to October 10, 1898. Philadelphia. Incorporated June 11, 1881.

Injuries of the Eyelids and Eyeballs. Cataract Operations; Mules's Operation Illustrated by Skiagraphs; Capsulotomy; Operation for Pterygium. Iritis: Its Treatment. Strabismus: Mules's Operation. By L. Webster Fox, A.M., M.D., Philadelphia. Reprints.

Original Articles.

REMARKS ON THE DESIRABILITY OF A MORE CAREFUL STUDY AND EXTENDED USE OF HYDROTHERAPEUTICS.[1]

BY JAMES J. PUTNAM, M.D., BOSTON.

The object of this communication is to introduce a discussion on the subject of the external uses of water, about which one hears, it seems to me, too little among us. I cannot claim to bring forward new observations. The monograph by Dr. Simon Baruch, of New York, which has recently appeared, states the case with great thoroughness, and if I could believe that the members of the Society were familiar with its contents I should feel that I had nothing to say beyond expressing a desire that the plea which he makes for accuracy and fidelity in the application of principles and attention to details should lead the rest of us to test the correctness of the reasoning on which the plea is based.

In fact, however, so far as I can judge from conversation with my friends, there are but few physicians who make anything like as systematic or scientific a use of this treatment as is practicable even in private dwellings, and there is no institution in Boston, under the guidance of a physician competent to study the subject as it deserves, or to whom one may send patients with the confidence that they will be judiciously treated, or treated in accordance with one's own ideas of what is needed, though there is reason to hope that this lack may soon be remedied. Most of the "water-cures" and Turkish-bath establishments of the present day, though well appointed, are on no higher plane, as regards the needs of scientific medicine, than those of Northampton and Brattleboro half a century ago. Excellent arrangements for giving these treatments in the best manner have, however, recently been introduced at the McLean Hospital, and have been in actual use at the State Asylum in Danvers for a number of years. The same may be said of several prominent hospitals and sanatoriums in various parts of the country, and I am sure that the time will come when no large general hospital will be without suitable devices for this purpose.

It is not too much to say that the growing interest in the subject is due largely to the intelligent and persistent advocacy of Dr. Baruch, though there are several other American physicians who have made valuable contributions to our knowledge of the subject. A few individual physicians doubtless advise baths extensively in their private practice, not to speak of those who employ them for typhoid cases or who are experimenting with the Schott treatment of cardiac disease.

Although some of the principles which underlie the external use of water in disease are fairly clear, others are still obscure, and it requires thought and practice to apply either sort in a given case.

The circulation of the blood, the motion of the muscular viscera, the processes of nutrition are largely reflex phenomena, and the combined stimuli induced by thermal and mechanical excitations acting upon the large areas of the skin, and carried by the countless nerves which terminate there, form an important source of this reflected activity in health and the source which is most available for the manipulations of the physician in disease.

The diseases which are susceptible of being favorably influenced by the proper use of water cover a large range. The application of this treatment to the acute fevers, not only typhoid, but the exanthemata, pneumonia and bronchitis, is of course particularly interesting. On this point there are many physicians here who are better able to speak than I am, but, if I am not mistaken, the opinion is gathering strength, if it is not, indeed, fully accepted, that the true aim of the measures employed is only in part to reduce temperature, and in still greater measure to raise the tone of the nervous system so that the disease can be withstood, and to increase the elimination of toxins.

The success claimed by Dr. Baruch and the many observers cited by him, in treating phthisis on these same principles, is surely enough to justify further trials in this line.

As regards the more chronic affections, characterized by debility, anemia and neurasthenic states, I can corroborate from my own experience the favorable statements made by others. My interest in the matter was roused many years ago, and was increased by a visit to the institution at Passy, patronized by Charcot, and by reading a brief but clear and sound treatise by Runge, of Bad Nassau, and, later, through becoming familiar with the excellent little monograph by Dr. Mary Putnam Jacobi on the use of the wet-pack followed by massage in the treatment of anemia. Since then I have had many patients — among them some who were very feeble — treated by means of wet-packs and drip-sheets and similar measures, and the impression first formed of the value of this treatment has been only strengthened by subsequent experience. I should now feel that I had not done justice to any but the lightest cases of these sorts without prescribing baths of the best kind available.

Where, as often happens, it is out of the question for the patient to have the aid of a skilled assistant, I try to bring it about that the noon hour, before the midday meal, shall be given up to the treatment and its accessories, this time being chosen because the power of reaction of a feeble patient is usually greater then than either earlier or later, especially if the night's sleep has not been refreshing, and also because, after the stimulus of the bath, and the light exercise which should follow it if the patient's strength allows, the appetite and power of digestion for the next meal are increased. In every case the bath is preceded by a rest in bed, partly to ensure against the failure of reaction because of fatigue, partly to make certain that the skin shall become warm, and even hot, before the bath is taken. For this purpose the patient ought to undress and be tightly wrapped, by an assistant if practicable, in a coarse blanket over which other blankets are to be thrown. It is not well that any considerable degree of perspiration should be induced unless it is desired to get the special effects of this process. There is, indeed, no objection to bathing in cold water during perspiration, but the warm moisture macerates the epidermis, and by its rapid evaporation on the removal of the blankets the patient is needlessly exposed to the danger of taking cold. As regards the bath itself, I have followed various methods, such as will be spoken of a moment later. After the bath the patient should dress partially, so as to prevent evaporation, and may then take a few light calisthenics involving breathing movements and exercises for the hands and feet, or may dress completely and walk a little about the house, or out of doors if desired, and then take lunch or dinner. Where the noon hour has not been available I have advised the bath in the morning on rising or towards the end of the afternoon, before the evening meal.

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[1] Read at a meeting of the Boston Society for Medical Improvement, December 19, 1898.

I should be glad, if time allowed, to rehearse the highly interesting evidence which has been collected, through experimentation and clinical observation, as to the immediate and remote effects of various sorts of water applications upon the circulation in the skin and the deeper parts of the body, the heart's action, the respiration, the muscular power, the digestion, the general metabolism, the excretion of urine, the efficiency of the nervous system, even though in so doing I could only cite the observations of others. But as I aim now at nothing more than to bear testimony to the importance of the subject, I shall limit myself to a brief discussion of a few practical points on which my own experience enables me to speak.

A variety of temporary effects follows the immersion of any considerable part of the body in water which is cold enough to act as a strong stimulant, but the effects which are of chief importance in the treatment of chronic diseases are those which concern the distribution of the blood in the different parts of the body, the increased production of heat, and the increase in metabolism and digestive power. It is not improbable that the strong sensory stimulus affects the nervous system in such a way as to directly influence nutrition, and that the increased heat production which follows the application of cold is due to an action of this sort exerted on the muscular system, not necessarily leading to actual muscular contraction, but the whole subject of the trophic functions of the nervous system is still obscure in all its details.

There are two well-recognized factors by which the redistribution of the circulating blood is brought about. One of these is compensatory hydrostatic pressure, the other involves the co-operation of the vasomotor nerves; and both influences powerfully affect the circulation in the viscera. The peripheral blood-vessels are capable of holding a large amount of fluid, and the ebb and flow produced in the skin, associated with the reflex contractions and dilatations in the visceral arteries, strongly affect the circulation in the digestive and blood-making organs and in the nervous system. It is certainly no matter for surprise that the urine and the urea should be found to be excreted in larger quantity, and other nutritive effects of analogous kinds produced.

If the clinical benefits were confined to the immediate results of these single reactions they would probably be relatively slight, but inasmuch as there is good reason to believe that the waves of vascular contractions and dilatations which are excited by strong cutaneous stimulations are only an accentuated form of the normal waves of which the healthy blood-vessels are constantly the seat, it is reasonable to conclude that the effect of a cold bath is not exhausted in the production of its immediate results, but tends to re-accentuate a function which may have fallen into abeyance. Modern physiological research justifies us in believing that the dilatation as well as the contraction of blood-vessels is an active phenomenon, and that periodical alternations of contraction and dilatation of the arteries throughout the body are more or less continuously in progress in states of health, and materially aid in promoting the circulation.

It is generally admitted that the occurrence of the so-called "reaction" is an essential indication that the effects of a cold bath are likely to be favorable, but it may be worth while to inquire what is meant by a "reaction," and what are the signs of its occurrence and those of its failure to occur? So far as the skin is concerned the reaction is of course the return, in increased volume, of the blood driven out by the impact of the cold application. It is a generally accepted fact that when this cutaneous reaction occurs and does not soon give place again to a secondary vascular cramp accompanied by a sense of chilliness the result of the cold application has been in so far satisfactory. As has already been stated, this return flow of blood to the skin is an important causative factor in the modification of the internal circulation, on hydrostatic principles, but the fact of its occurrence is also of value as a sign that the nervous system has been able to meet the demands made upon it in bringing about the deeper changes which are, in themselves, of still greater importance. No great harm might follow if the skin failed to react, provided this was all, but when the reaction does not occur in the skin we have reason to believe that compensatory hyperemias and other impairments of circulation are present elsewhere, and that as a consequence of this the resistance of distant tissues and organs may be lowered sufficiently to permit such results as bacterial invasion of the mucous membranes.

It is in this that "taking cold" consists, but it is noteworthy that this result, and also the persistent vascular cramp of the cutaneous vessels which often occurs at the same time and which friction only with difficulty overcomes, is more apt to follow a prolonged exposure to slight cold, like that afforded by exposure in rooms with cold, damp walls, or contact with wet clothes or the cold and damp ground, than it is a brief immersion in even extremely cold water. In other words, so far as "reaction" is concerned, it is more likely to be prompt and complete the more nearly the vasomotor system is called upon to respond up to the maximum of its capacity. It is for this reason that it is safer as well as more beneficial to train the patient to bear colder and colder baths and more and more complete immersion in them. But this training should, of course, take into account not only the patient's power of reaction for the moment, but also whether this reaction is maintained, and whether its maintenance costs more outlay of nervous strength than the patient can afford. As a rule, the internal temperature of the body is not actually lowered much by a brief though sharp cold bath; not nearly so much, for example, as it would be in a much warmer bath of longer duration. For the cold contracts the vessels of the skin and so prevents much radiation in the first instance, while, later, if reaction occurs, that means that compensatory combustion is taking place in the muscles, while if reaction does not occur that means the cutaneous vessels remain contracted. Nevertheless, the outer layers of the skin are of course cooled down, and this loss has to be made good. Also, if there is much exposure after the bath, or if sufficiently warm clothing is not worn, or if the patient's heat-producing power is defective, the internal temperature may fall to some extent and remain low for some hours. Some observations made upon himself several years ago by Dr. E. W. Emerson, who was at that time an interne at the Massachusetts General Hospital, where he was obliged, after the bath, to go about for several hours in cool shady rooms, give proof that this occurrence is an actual danger. Dr. H. P. Bowditch has also informed me that he has calculated that during a cold bath of four minutes his loss of heat was eleven times the normal amount, but it must be remembered that cold baths are usually taken at a time when the skin has been artificially warmed up and can afford to part with some of its heat, and also that the fact is, I think, true in general that the rectal temperatures do not change materially under the influence of a brief bath even in water of 40° F.

This leads at once to the question, what are the best means to secure the reaction from a single cold bath, and what the best means of preparing patients to endure cold baths in general and to get benefit from them?

The most important point is that the skin should be warm before the bath, both in order that the stimulus may be greater by contrast and the abstraction of heat from the blood less. It should here be noted that *being warm* and *feeling warm* are not synonymous terms. A person who has just come in from an exhilarating walk on a cold day may feel perfectly comfortable and yet his skin may be cold, while a person who has just got up from a warm bed may shiver when the cool air strikes him, and yet his skin may be warm, and the latter person may be in better shape for a cold bath than the former. This necessity of having the skin warm of course constitutes a reason, in addition to various others, why the morning hour is appropriate for a bath. I cannot help believing, however, that another element comes in here, namely, that of habit, which makes the nervous system prone to respond to that particular stimulus in that particular way, just as at a later hour it is prone to respond to the stimulus of pressure in the rectum.

Warmth of the skin can be secured both by blankets, as already indicated, or by the prolonged warmth of the bed, or by hot-air box-baths, which are now to be had in a convenient form for household use,[2] or by allowing a hot bath to precede the cold. The hot-bath method is convenient, but unless the cold affusion follows it quickly there is some danger of taking cold. Runge gives the rule that when the cold bath which follows the hot is of less than a minute's duration the aggregate effect is that of a hot bath, if more than a minute, that of a cold bath. Of course no such rule as this can be absolute. Besides the preparation of the skin the reaction may be assisted by friction, both during the bath and after it. It is perhaps unnecessary to dwell on this point further than to say that one immense advantage afforded by having trained assistants, and still more by the apparatus that is to be had only at good institutions, is that friction is secured in these ways on a much more effective scale. The rubbing with the hand of the assistant while the patient is partly or wholly submerged, the stimulus of vigorous stroking through a coarse linen sheet wet with cold water, and, above all, the stimulus of a powerful douche, often transform a cold bath from a chilling process to one in which the skin is sure to come out pink and vascular.

The graded system of baths recommended by Dr. Baruch for persons unaccustomed to such manipulations and in feeble health is something like the following:

In the first grade the patient is wrapped in coarse blankets and one part exposed at a time, so that water may be dashed on by the hand of an assistant, at perhaps 80° or 85° F., the temperature being then reduced every day by two or three degrees, down to 50° or 60°. The patient then graduates perhaps to the "half-bath," in which he sits in water which may be at first, again, at 80°, but should be made lower day by day. He may next sit or stand in an empty tub, or, if desirable, a tub containing hot water for the feet, while several basins or pitchers of water at 75°, gradually reduced, day by day, to 50°, are poured or even thrown with some force over the shoulders. The "sheet-bath" (sheet wrung out) or the "drip-sheet" (sheet dripping) may come next, or instead of them the "wet-pack," which consists in the rapid application to the naked skin of a coarse linen sheet well wrung out of water of a temperature of from 60° to 70°, blankets previously disposed for the purpose being next wrapped, in accordance with a definite technique, snugly over the body so that all air is excluded. The "wet-pack," although the first part of it is a complete cold bath in itself, soon becomes a warm application, and is therefore to be the precursor of an affusion or cool or cold douche, or drip-sheet, etc., according to the patient's conveniences and strength.

In conclusion I will speak of a few points on which I think physicians are apt to hold fallacious opinions:

(1) Is a "shock," as from sudden application of cold water, useful or objectionable? The latter view is often maintained, both by patients and physicians, but the former is correct, provided only that the shock is proportioned to the habits, and the capacity for reaction. Patients are apt to dislike the "shock" of cold water, and if they are feeble or nervous it may, if severe, frighten or fatigue them. For this reason, when an unfamiliar method is first used the application should be as warm as 85° to 90°. This will feel cold if the skin has previously been warmed to 100° or higher. On the other hand, the common practice of letting cold water run gradually into a previously hot bath, so that the temperature is slowly lowered and "shock" avoided, is an objectionable one, and much less likely to be followed by a good reaction than a more sudden change, especially if the latter is associated with smart friction, as in the case of the drip-sheet or forcible cold affusion given by another person. It is not easy for a patient to make a thoroughly satisfactory cold application unaided, except by an immersion-bath, since otherwise, at the best, only half the body can be bathed and rubbed at one time. The immersion-bath at low enough temperatures to be thoroughly stimulating is very refreshing to vigorous persons who are thoroughly habituated to it, but less safe for feeble persons. If the latter must take their bath unaided, rubbing with a large, dripping-wet towel is perhaps the best method.

(2) Hot baths, at temperatures considerably above that of the body, have primary effects similar to those exerted by cold baths, but secondary reactions are liable to occur, leaving the skin pale and cool and the arterial tone low, and, moreover, the skin is for a time after them abnormally sensitive to slight cold. It is risky, on these accounts, to take hot baths at bedtime, because the primary heat of the skin leads the patient to underestimate the amount of clothing which will be required later and he may wake to find himself chilled.

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[2] As by the Betz canvas hoods.

These dangers are diminished if sufficient time is taken to allow of complete cooling before going to bed, or if the hot bath is followed by a dashing or rubbing with cold water. Of course there are cases, however, where the sedative action of a prolonged warm bath is very useful. Massage given during warm baths is useful for elderly people with arterio-sclerosis — (Jacobi).

(3) It is a mistake to suppose that shivering is necessarily a sign that the body is becoming chilled to an objectionable degree. Shivering frequently occurs when one rises from bed on a cold morning, and yet wholly disappears, together with the *sense of coldness* that accompanies it, after a plunge into very cold water. Even blueness of the finger-tips is not necessarily a danger sign, since it is usually due to local changes in the cutaneous circulation, and not to weakness of the heart.

(4) Children do not require as low temperature as adults to develop such a degree of reaction as can be expected from them, and do not stand severe cold as well.

(5) Where the reaction on the part of the vasomotor system is to be limited to a small portion of the body, lower temperatures and more prolonged applications can be used than where the whole surface of the body is to be exposed.

(6) Where drip-sheets, or sheet-baths, or wet-packs are to be used, coarse linen sheets or damask tablecloths are better than cotton sheets, as being more absorbent and affording better surfaces for friction.

(7) The mechanical impact of a stream of water delivered under high pressure in the form of a douche adds greatly to the stimulant effect, and insures a better reaction. Nevertheless, a feeble patient has to be accustomed gradually to high pressures, as to low temperatures, and at first relatively short applications are necessary. In a well-appointed institution greater and readier variability, and thus better results, can be obtained than in a private house.

(8) Especial caution is necessary in applying baths, tending to produce much reaction, to elderly persons, or to any persons with brittle arteries or with disease of the heart.

ON RETRODISPLACEMENTS OF THE PREGNANT UTERUS.[1]

BY MALCOLM STORER, M.D., BOSTON.

These remarks are based upon the following case: Nelly H., age twenty years, single, of thin girlish figure, was referred to me as having an ovarian tumor. Menstruation, previously regular, had been absent for fourteen weeks. The subjective symptoms of pregnancy were denied, and also, as is customary in girls of her class, its possibility. There had been much abdominal pain of late, and her bowels had not moved for several days. Urination was regular and painless, occurring perhaps six times in twenty-four hours. Some weeks previously, however, she had noticed some difficulty in urinating, but as at that time she was under treatment for a supposed gonorrhea (in reality the increased secretion of early pregnancy), the dysuria had been regarded as incidental to her disease. The abdomen was found to contain a smooth tender tumor reaching to the umbilicus; the external genitals were deeply congested, with marked bulging of the perineum, and the uterus was found to be enlarged and completely retroverted. 1,920 cubic centimetres (65 ounces) of clear pale urine was withdrawn by catheter with much difficulty, but all attempts to replace the uterus were unsuccessful, and as the pelvis seemed already overfilled she was not packed but sent home to bed. The second day, after drawing off 2,110 cubic centimetres, taxis again failed, but on the third day I managed to replace the uterus. A pessary was worn for a month and she went to term in safety. On examining her two years later, I found the uterus in good position, and she told me that a doctor told her a few months after the child was born that the uterus was then in good position, but that upon her becoming pregnant a year later the displacement had returned and that she had had retention again.

While this case is commonplace and typical enough in most respects, it is to be noted that she was unconscious that there was retention, and that there was not the dribbling usually associated with retention, but a fairly regular evacuation of some 250 cubic centimetres at a time. This apparently was a retroversion of a pregnant uterus, and not a case of pregnancy in a retroverted uterus, a distinction which I think should be made when possible, for the latter offers a much better prognosis — if left to nature — than does the former, as in an accidental retroversion the force that drives the enlarged fundus past the promontory of the sacrum probably will be much greater than any force that nature can exert to replace it. A slight degree of backward displacement generally causes little trouble. Many of the more extreme displacements also correct themselves as pregnancy advances, generally during the fourth month, just as an ovarian tumor, normally prolapsed at first, swings up out of the pelvis as soon as with increase in size the force which impels it to expand in the line of least resistance becomes sufficient to overcome the force which holds it down. In a certain number of cases, however, spontaneous cure does not take place. In 24,000 gynecological cases Martin saw 121 incarcerations.

Spontaneous cure will be limited by four factors — adhesions, the sacral angle, the character of the displacement, and the degree of the displacement. Adhesions will not always soften up; it is evident that the more pronounced the sacral angle, the harder it will be for the uterus to get past the promontory; while as regards the character of the displacement it has been argued ingeniously by Chrobak that it makes a great difference whether we are dealing with a version or a flexion. In flexions the cervix lies in the pubes, against which it is pressed, a point of leverage when uterine contractions take place. Furthermore, in flexions the uterus is on the stretch at its upper convex surface, and accordingly the most vigorous contractions will take place there, the effect of which is that the fundus is being continually pulled up out of the sacral hollow, while at the same time contractions lessen the antero-posterior diameter of the flexed uterus, thereby giving it more room to swing up in, none of which things occur in a version. From this Chrobak reasons that unadherent flexions may be left to themselves, while all versions should be corrected at once. While the correctness of his theory must depend in doubtful cases on the angle of the cervix to the pubes, in versions of the third degree, at all events, in which the cervix may point almost directly upwards at the pelvic brim, it can obtain no point of leverage against the pubes, and incarceration must take place. Fortunately pregnancy is rare in such extreme displacements, as it also tends to be in densely adherent uteri, in which the inflammatory process which causes the adhesions often closes the tubes.

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[1] Read before the Boston Society for Medical Improvement, December 19, 1898.

Generally there are no symptoms of consequence until about the tenth week, and they may be still further delayed if the woman has a large pelvis. Here again the character of the displacement is of some moment, as Dührssen has pointed out. The long diameter of a retroflexed uterus is not as great as that of a retroverted one, and accordingly with a retroversion of the second degree pressure will be felt about half a month sooner than with a flexion. In a retroversion of the third degree, on the other hand, where the uterus stands on its head, as it were, there is nothing to prevent development upwards, and accordingly symptoms will be delayed two and one-half months longer than in retroversions of the second degree. Until pressure symptoms come on the patient is often unaware that any trouble exists. I have twice happened to come across a pregnant retroversion when consulted for sterility. While urinary disturbances are apt to be the first thing noticed, the more or less severe interference with micturition that generally precedes actual retention often is regarded as merely an exaggeration of the usual discomfort of pregnancy, and this error is by no means always confined to the laity. The result is that many cases — in out-patients at least — are not seen until retention has taken place. I have been struck by the number of cases in which there was no movement of the bowels for a week or more before retention took place, and the question arises whether the overloading of the sigmoid may not be a cause of the acute urinary disturbance. It certainly would tend to increase the normal dextro-torsion of the pregnant uterus, thereby displacing and compressing the urethra. This constipation, while sometimes reflex, is generally the direct result of pressure, but the greater the flexure of the uterus the less is the pressure upon the intestine; while as regards the bladder, it would seem that the greater the flexure of the uterus the greater would be the drag upon the urethra, but as a matter of fact I think the bladder is more disturbed by the upward pressure of the cervix in versions than by any drag in flexions.

Upon examining a case of incarceration, an exaggerated discoloration of the vulva is apt to be seen, and the bulging of the perineum in the case reported is often extreme. In Mayor's case a violent effort caused a central rupture of the perineum and protrusion of the fundus. In most flexions the cervix is accessible and generally there is little of the softening usually associated with pregnancy, probably from interference with the blood supply. Sometimes uterine growth being hampered in other directions, there is enormous hypertrophy of the cervix. In many versions, and in some flexions, the cervix disappears out of reach behind the pubes, a condition I have always found peculiarly bewildering to the student. In still other cases the cervix is so flattened that the careless finger does not recognize it.

If retention be present the abdomen will be found to contain a smooth fixed tumor, more pyriform than an ovarian tumor, and generally too large for an uterus of the corresponding month of pregnancy. Its tenderness may suggest a twisted ovarian cyst. There should be, of course, no uterine souffle, but Croom had a case in which one could be obtained, and in which the catheter produced no urine. At the autopsy the souffle was explained by the bladder being found full of clots. While a catheter will generally settle the question, sometimes one cannot be passed; sometimes when inserted its whole length the bladder cannot be reached; and sometimes, when all the urine that can be has been drawn off, the tumor persists, either from hypertrophy or rigidity of the bladder walls (Albers), or from sacculation of the bladder (Cullingworth, Lathuraz), or from blood clots in the bladder (Croom), and in such cases the diagnosis is naturally very difficult. Even with the bladder empty, the fundus has been confused with a variety of conditions, such as prolapsed ovarian tumors or fibroids of the posterior wall. I have seen this mistake twice. The most difficult thing to exclude is an extra-uterine pregnancy, in which, by the way, retention is not unknown (Barbour). Pozzi says that irregular hemorrhages point to extra-uterine pregnancy, while intermittent contractions in the pelvic mass indicate it to be uterine. I remember seeing, however, an incarceration at the third month, with a slight loss of blood every few days, which stopped as soon as I replaced the uterus, while, on the other hand, intermittent contractions in the walls of extra-uterine pregnancies are sometimes seen, though very rare. A lateroflexion of the pregnant uterus (retroflexion with torsion) may be especially difficult to tell from an hematocele. In this dilemma Dührssen advises the passage of a sound, maintaining that with care no harmful results should follow. Leaving out the great danger of abortion, no matter how much care is used — and it must not be forgotten that a miscarriage coming on even weeks later may be due to the sound — its use does not seem to me to give any certainty. If, as is often the case, there is hypertrophy of the cervix, if the point of the sound be arrested at the angle of flexion, there is no way that I know of recognizing that fact. At least five competent observers report cases in which they made the wrong diagnosis through trusting to the sound.

Given an incarcerated uterus, if the displacement be not corrected by nature or art, various results may follow. Sometimes pregnancy goes on to full term, the uterus becoming sacculated; much more frequently abortion takes place, probably from interference with the blood supply. In fact, nature is so apt to cut the Gordian knot in this way that many cases of habitual non-syphilitic abortion must be due to this cause. These retroflexed uteri have naturally much difficulty in expelling their contents. Challeix has reported three cases of extreme flexion in which the fetus was retained eight, five and one month respectively after its death. If abortion does not take place grave results are generally not long delayed. Gottschalk has collected 67 deaths from this cause, and I have found 10 more,[2] making a total of 77. Of these 13 were from rupture of the bladder, 18 from uremia, and most of the rest from sepsis, its origin being practically always in the bladder.

The first step in treatment is to empty the bladder. The patient should try to relieve herself in various positions, including the knee-chest, should there be any difficulty about passing a catheter. Should the meatus be drawn up out of reach pressure upon the abdomen or the fundus may expel enough urine to relieve the distention sufficiently to allow voluntary micturition, or at any rate to render the meatus accessible. Sometimes pressing the cervix backwards will have the same fortunate result. If these means are unsuccessful the meatus may perhaps be reached by putting the patient in the lithotomy position with the pelvis raised and the thighs strongly flexed, which position also straightens the urethra. If necessary we may adopt Cohnstein's suggestion, the "climbing process" (*Kletterverfahren*), as Sänger aptly calls it, which consists in bringing the cervix into reach by drawing down the anterior vaginal wall by one tenaculum after another, each gaining a little on the last, until finally the cervix can be grasped with bullet forceps and drawn down and back from the pubes, by which time the meatus is very likely already in sight. I prefer a four-toothed rake to a tenaculum for this purpose. If one form of catheter will not pass a variety of others should be tried. I have usually been able to pass a soft-rubber one, but twice I have been forced to use a stiff male instrument, against my will, for one cannot be certain of the direction of the canal, though generally in retention it is parallel to the symphysis. I remember, however, a woman whose bladder was carried backwards to such a degree that I could enter it only by giving an S-twist to a stiff male catheter, reversed, with a sharp downward curve. The value of repeated attempts is shown by a case of Croom whom two experts failed to catheterize, but from whose bladder a probationer nurse immediately afterwards drew 3,500 cubic centimetres. When the flow of urine stops it should be seen whether more cannot be obtained after a change in position. The cervix may divide the bladder so that part of it is quite inaccessible to a catheter. In Lathuraz-Viollet's case the posterior prolongation of the bladder presented at the vulva behind the fundus, making it out of the question to empty the bladder with the patient on her back. Sometimes the catheter cannot be passed; indeed one writer was so unfortunate as to have three such cases. We have Spiegelberg's authority to make, under such circumstances, cautious attempts to replace the uterus even though the bladder be full, but I should hesitate very much to use the slightest force, preferring to first empty the bladder by aspiration. Five fatal cases are on record as following attempted taxis with the bladder full. This is especially true in cases in which there is the slightest reason to suspect impairment of the vitality of the bladder wall. With more or less advanced gangrene of the bladder even puncture is not to be lightly undertaken. Dührssen goes so far as to say that given a case not easily catheterized, in which the dribbling urine shows gangrene of the bladder, an abortion should at once be induced by aspiration through the posterior wall of the fundus, if necessary, without attempting to empty the bladder even by puncture.

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[2] Albers, Burns, Braun, Elliot, Gooch, Henske, Oliver, Ross, Wilmer.

Since the famous case in which Marion Sims used the bent handle of an iron spoon many instruments have been devised with the idea of improving upon the leverage that the vaginal finger can exert, but they have little to recommend them. Most of the manipulative methods are based upon the principle of depressing the cervix, either by traction from below or by shoving it down from above with the fingers close behind the pubes (Cohnstein), while at the same time the fundus is elevated, causing the uterus to revolve upon itself rather than attempting to force it up bodily. A rhythmical rocking motion has been advised, which perhaps lessens the long diameter of the mass by stimulating uterine contractions, but, on the other hand, probably increases the risk of abortion. Other methods than taxis will sometimes succeed in rebellious cases. Elastic pressure in the form of water-bags in the rectum or vagina has sometimes been of service. Mueller, in a recent article, strongly recommends the elastic balloon. Some men still advise a soft bulb pessary as a means of exerting pressure. A much more promising use of the pessary is found in the ingenious treatment of Laroyenne (Levrat), which is based upon the theory that the chief factor in maintaining the displacement is suction. The extended fingers are insinuated, palm upwards, between the fundus and the sacrum, as high as the promontory, with as little pressure as possible upon the uterus. This enucleates the fundus, and it is claimed that it will now generally fly up of itself, but if it does not a malleable pessary with a large posterior arm is introduced, so moulded as not to press against the uterus but merely to fill the space made by the fingers. It is claimed that reduction will then almost always take place in a day or two.

In a recent communication Funke speaks of a case in which a three months' pregnant retroflexion was easily reduced by means of the shot-bag treatment as suggested by Freund. This means of exerting gradual pressure consists of introducing into the vagina, by means of a speculum, a strong condom, which is then filled with shot (about a kilogramme of No. 3), which adapts itself to the curves of the pelvis, and with the patient in the dorsal position exerts a very decided but not especially painful pressure, which can be continued indefinitely if necessary. The following method has served me in several cases: the patient's bladder and rectum having been emptied she is put in the knee-chest position upon a low table. The operator then stands at her left hip, and with one or two fingers of his right hand introduced into the rectum or vagina endeavors to press the fundus down and away from him so that it will swing past the promontory to the right of the median line, which is the direction of least resistance, the left pelvis being more or less occluded by the rectum, as is the median line by the promontory. At the same time the operator's left arm thrown over the patient's right hip holds her firmly in position against him, and allows him to gauge exactly how much force he is using with his other hand. With the patient in the knee-chest position the right hand is much better adapted to swinging the uterus through the right pelvis than is the left. An assistant meanwhile draws the cervix down or stretches it with a double hook. The advantages of an anesthetic must be weighed against the loss of the patient's sensations as a guard upon the amount of force used, and also the inconvenience of the knee-chest position when the patient is anesthetized.

Should taxis fail, the treatment to be pursued depends upon the patient's condition. If there be no urgent symptoms, an expectant policy is indicated, certainly up to the end of the fourth month. The patient should be put to bed, with its foot elevated to favor the abatement of any edema of the soft parts. Catheterization should be regular and anodynes given if necessary. Meanwhile the patient should use the knee-chest position several times daily, allowing the vagina to balloon out with air each time, and repeated attempts at taxis should be made. Should the uterus be held back by adhesions I am convinced that careful packing does no harm; that if abortion occurs it is in spite of the packing. I have thus corrected in safety at least three displacements that were resistant to taxis. If by packing the central point of the fundus can be brought past the angle of the sacrum the further care of the case generally can be left to nature. After replacement a pessary should be worn well into the fifth month. The patient should be kept thoroughly under opiates for a few days after a difficult replacement, for it is often the immediate cause of abortion. Carrying this cautious expectant treatment too far is, however, to be deprecated. I remember unpleasantly well the tortures I allowed a woman to suffer some years ago whom I packed and packed, whose uterus I tried to replace almost daily for a month or more, being then filled with the idea that with patience any uterus could be replaced. Fortunately for us both she aborted before any permanent harm was done. I feel confident that with radical treatment she could have been carried to term. There is little chance of being able to replace a uterus after four and one-half months, and the child is almost certain to be lost. In such cases, and in others in which taxis should be recognized as being hopeless or dangerous when first seen, I do not think that practically leaving the case to nature is by any means all that is indicated. When the patient is already in a critical condition prompt relief is of course demanded, and the usual induced abortion may be the safest thing that can be done, but I feel that it is indicated only when the patient is so far reduced by sepsis or exhaustion as to give little promise of standing a more serious operation, it being presumed, of course, that the child is still alive; but under these conditions it has not always been possible to induce an abortion even by such vigorous means as the aspiration of the liquor amnii, and of course under such circumstances any operation, no matter how grave, would be justifiable if it promised to save the woman's life. I question very much, however, whether we ought not to go much further and recognize that the rights of the child demand some consideration, supposing it to be still alive and the woman in good condition. We know the comparative ease with which even a large tumor can be dislodged from the pelvis when the abdomen is opened, when previously it was apparently immovably impacted; and the pregnant uterus lends itself especially well to this from the fact that the cervix affords a fulcrum by which to rotate the uterus upon itself from above, while an assistant's hand in the vagina raises the fundus. Should there be no impaction, but the uterus be held back by adhesions, dividing them under the aid of the eye is a far safer procedure than forcibly rupturing them. Operative interference adds practically nothing to the mother's danger, and if successful is not apt to interrupt pregnancy; in fact, is not nearly as apt to do so as a forcible replacement by taxis, while, even if it is not found possible to replace the uterus by the abdominal route, the fact that a laparotomy has been done does not render a subsequent abortion any more difficult or dangerous, nor, if it is necessary to resort to such heroic measures, would a preliminary celiotomy prevent a vaginal Cesarean section or Porro. Dührssen advises against laparotomy if there are any evidences of gangrene of the bladder, thinking that the bladder is almost certain to be ruptured in digging down through the intestines, which, he says, are almost surely adherent if the bladder is gangrenous. This does not seem to me quite as imminent a danger as he would have us believe. The intestines are not of necessity adherent, even with the bladder wall in a very bad condition, nor does careful separation of adherent intestines involve a rupture of the bladder by any means. Dührssen also holds that the presence of colon bacilli in urine that suggests gangrene is presumptive evidence of adherent intestines. Surely colon bacilli can gain entrance to the bladder in other ways than direct immigration from the intestine. Accordingly, even in advanced cases, notwithstanding evidences of positive disease of the bladder wall, I should urge a laparotomy even if it should turn out to be merely an exploration, while in less severe cases after four months should taxis fail, and earlier should there be warnings of undue pressure, I think an attempt should be made to correct the displacement by laparotomy, and naturally the earlier the operation the better the prognosis for both mother and child. The few men who have been bold enough to operate under these conditions have met with gratifying success for the most part. In 1894 Gottschalk operated upon a woman in extremis to relieve pressure upon the intestine caused by an adherent retroversion, the woman dying. In 1894, also, Schwartz corrected by celiotomy a three-months' gravid retroflexion, operating under the supposition that the mass was a tumor. In 1895, Mitchie, operating for pyosalpinx, found in addition a four-months' gravid retroversion. The tube was removed and the uterus replaced without interfering with pregnancy. In the same year Fry operated upon a case successfully, doing at the same time ventro-suspension. In 1895 Cameron at the end of the eighteenth week opened the abdomen, emptied the bladder by incision (having failed to do so with a catheter), and replaced the uterus manually with ease. Jacobs says that he has operated eleven times, with success in ten. M. D. Mann has reported two successful cases this year. Thus of 18 cases, in 16 pregnancy was not disturbed, in one abortion followed, and in one, death, the woman being moribund when operated upon. This is certainly a sufficiently favorable showing to warrant interference in proper cases, as sixteen children were saved that otherwise probably would have been sacrificed.

Symphyseotomy was the operation advised in desperate cases by the older accoucheurs, and Davis,[3] speaks of Cruikshank as having performed the operation for this indication, but I have not been able to find a case since its aseptic revival. It is interesting that Hunter, in the beginning of his career, in 1756, when he was the first in England to describe the condition, should have had his attention attracted to it by autopsies, in which he was able to disengage the impacted uterus only after separating the pubic bones.

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NOTES FROM THE SURGICAL HISTORY OF A FIELD HOSPITAL (CAMP ALGER, VA.).

BY WILLIAM H. DEVINE, SOUTH BOSTON,
Late Major and Acting Chief Surgeon Second Division, Second Army Corps.

MY object in reporting these cases is to show the class of operations that can be performed successfully on the field. Fortunately in this war there was but little surgery necessary in camps in this country. The experience of this hospital was confined to the following surgical cases: rupture of spleen, appendicitis, bayonet wound of abdomen, amputation of fingers, gunshot wound (three cases), ischio-rectal abscess, removal of gunpowder from face by use of peroxide of hydrogen, and a few minor cases. Since the Civil War great strides have been made in surgery, and the advance which promised the greatest success in the treatment of cases in the field was antisepsis. No opportunity for an extensive trial of field antisepsis in our army presented itself until the past year, in the Spanish-American War.

The report of a few cases may be interesting, as showing how succesfully antisepsis may be employed. No difficulty was encountered in its application in the most minute details. I can see no reason why the same could not be done in field hospital in active service. Sterilizing apparatus, dressings, bandages, antiseptic tablets, instruments, etc., occupy so little room that necessary stores may be carried to field with little inconvenience. Operations were performed in tent, generally under fly, that is, a tent without sides, and the results compared favorably with those of any first-class hospital. Recovery without any severe symptoms or complications occurred in all but one case, which was successful as far as operation was concerned, but was of such a desperate nature that but slight hope of saving life was entertained.

CASE I. O. B. H., private, Troop C., New York Cavalry, U. S. V., July 3, 1898, received kick of horse. A short while after accident happened was removed to First Division Hospital. His appearance indicated condition of great shock. He was extremely pale, pulse small and extremities cold. The following medical officers were present at examination: Majors Cooke, Devine, Crile and Parke, Lieutenants Montelius and Washburn. The left abdomen was enlarged, tense, and manipulation detected fluctuation in this region.

Diagnosis. — Rupture of the spleen with hemorrhage into the abdominal cavity. The case was apparently hopeless, and it was the unanimous opinion of the surgeons that operation would give the only chance.

Operation performed July 3d, at 6 P. M.

Preliminary preparations. — Orders were at once given to have water boiling in wash-boilers and to sprinkle the ground in and about the hospital so thoroughly as to prevent dust. Several basins and trays were sterilized by immersion (ten minutes) in the boiling water. The water used for the operation and intracellular infusion was passed through a Berkefeld filter and collected in sterilized buckets and basins; the instruments and dressings were placed in the sterilizer. A dozen towels were boiled during the process of sterilization. The operator and assistants prepared their hands, while the stewards arranged the operating-table and the table for instruments. An apparatus for infusion for sterile normal saline solution was arranged by utilizing a fountain syringe. To the end of the rubber tube a needle from the Allen's bag was attached. The whole apparatus was easily sterilized by boiling. In the meantime the patient, well wrapped in blankets, was placed upon the operating-table, and taking advantage of the slope upon which the hospital was pitched, a favorable incline of the patient was secured. During the reduction to surgical anesthesia the field of operation was surgically prepared. By the time reduction was completed everything was in readiness for operation. The table was placed near the entrance to the hospital, so that if necessary it might be placed in the open air to secure the necessary light, as the sun was going down. The zone of operation was well covered with sterile towels.

Operation. — Operator, Maj. Geo. W. Crile; assistants, Majors Wm. H. Devine and C. W. Parke, and Lieutenant Montelius. There was no external mark of the blow. A median incision three inches long, midway between the ensiform cartilage and umbilicus, was made. Free blood escaped. On entering the cavity the colon was found distended and pressing against the anterior wall, the liver was found to be normal; free blood was found everywhere in the cavity; on the right side it was fluid, on the left side it was clotted toward the region of the spleen, and following toward the area of densest clotting as a guide to the blood longest shed, three rents in the spleen were discovered. A large quantity of blood was turned out by manipulation of the parts, and oblique incision was carried down parallel with the costal border and three-quarters of an inch below, until sufficient space could be developed to suture the rents. On bringing the spleen to presentation to the wound it was seen to be extensively lacerated and contused in its anterolateral parts. There was one main rent involving the entire thickness of the organ and extending about three inches. There were three minor rents, two of which involved the upper surface and the free border, and one near the pedicle, over the under surface. All were sutured with silk, some continued, and some interrupted, depending upon the degree of brittleness and the depth of the wound. After the sutures were placed there was no further hemorrhage, and after clearing away the blood and cleansing the part with sterile salt solution the organ was returned and gauze drains placed, so as to drain the area of suture and injury. The abdominal wound was then quickly closed by sutures. Several times during the operation the patient's condition seemed bad, but he rallied well.

During the operation normal salt solution was administered by apparatus extemporized as already explained. The patient was given strychnine, one-sixtieth of a grain subcutaneously.

After-treatment. — Patient placed upon cot, wrapped up in a number of blankets, and abundance of artificial heat applied. The foot of cot was well elevated. He soon recovered consciousness. The only medication consisted in strychnine, one-sixtieth of a grain hypodermatically every two hours. Six hours after the operation the saline solution was allowed to flow into the loose tissue, below the axilla on each side. Patient was in cold perspiration continually for six hours after the operation; the skin then became warm.

He was rational until near the end. Sixteen hours after operation he suffered considerable retching, and iced champagne was administered, giving some relief. He died about twenty-four hours after the operation. Considerable space has been given to detailing the technique to show that major operations can be carried out in field hospitals with almost the same precision as in other institutions.

Case II. C. H., private, Eighth Pennsylvania Regiment of Infantry, U. S. V., admitted to Division Hospital August 7, 1898.

Diagnosis. — Appendicitis. Temperature 102°, pulse 100. Marked tenderness in region of appendix and extending through entire right iliac region. A large mass about the size of clenched fist could be felt. The patient was examined by Lieut-Col. A. C. Girard, Major Cooke and the consulting board — Majors Allers, Focht and Smith. The diagnosis was confirmed and an operation deemed inadvisable, and palliative treatment recommended. The patient was placed on liquid diet; morphine suppository and hot applications were employed to allay pain.

August 14th, on recommendation of the consulting board, the operation was performed. Operator, Maj. Wm. H. Devine, assisted by Majors Allers and Smith, and Acting Assistant Surgeon Eicher.

Operation. — An incision about three inches long, commencing about an inch above the middle of Poupart's ligament and extending upward towards the anterior superior spine of the ileum, revealed the centre of a circumscribed abscess. The appendix was found to be gangrenous, and contained several enteroliths resembling lemon seeds. The cavity was washed out with a gentle stream of hot water from fountain syringe, and then packed with iodoform gauze. At the end of a week discharge had slight odor, and the wound was cleansed daily with a solution of peroxide of hydrogen. Temperature and pulse remained nearly normal during convalescence. The patient was removed to his home three weeks after the operation. Antisepsis was conducted with same care as in previous operation.

Clinical Department.

VOLVULUS OF THE SIGMOID FLEXURE, THREE TIMES RELIEVED BY LAPAROTOMY.¹

BY EDWARD MILTON FOOTE, M.D., NEW YORK,
Surgeon to the Hospitals on Randall's Island.

The following case is probably unique in the history of medicine. Edward Smith, aged twenty-two years, is a deaf-mute, and mentally imperfect. Nothing is known of his early history. Since he has been an inmate of the ward for male idiots on Randall's Island he has had a good appetite, which has been satisfied by the authorities with a diet composed largely of cereals. Except for occasional periods of constipation, he has always been well.

January 28, 1898, the orderly noticed that his abdomen was unusually large. There was no vomiting nor pain, and no tenderness on palpation. The distention was due to gas. The following day it had increased, and peristaltic motion was visible through the thinned abdominal wall. A half ounce of castor-oil and an enema were given without effect.

January 30th the distention was still greater, but subjective symptoms were absent. Three drops of croton-oil failed to move the bowels. I first saw the patient that evening. It was not difficult to make out the correct diagnosis; indeed one fact alone was sufficient to establish it. The greater part of the distention of the abdomen, which then measured forty inches in circumference, was due to two great air spaces lying side by side in the central portion of the abdomen. They could be easily mapped out, as their percussion notes were slightly different, while from the deep tone and the area covered it was plain that each air sac was as large as a distended stomach. The distention was of course due to the large intestine and almost certainly to a volvulus of the sigmoid flexure. A median incision below the umbilicus showed such to be the case. The sigmoid was twisted from the right forward to the left; that is, the descending limb lay anterior to the ascending. The twist was low down in the abdomen, and immediately above it was a great quantity of soft feces, at least a quart. Above this point the sigmoid rose in a loop, filling the space inside of the normal large intestine (see Fig. 1). It must have measured over three feet along its outer border, and was about five and one-half inches in diameter. It was necessary to puncture it with a trocar to allow some of the air to escape, before it could be drawn out through the incision. After the loop had been untwisted the fecal contents and gas were squeezed down into the rectum, at the same time that irrigation was carried on from below, until the bowel was empty.

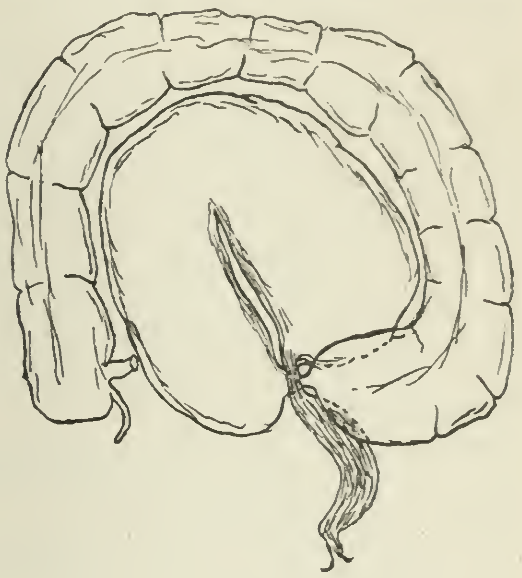

Fig. 1.

In spite of the long duration of the obstruction there was no peritonitis, but the wall of the sigmoid was infiltrated at the constriction, and for a short distance above it. There was also a partial rupture of the muscular fibres in an oblique direction, across the descending limb of the involved gut, close above the constriction. This rent and the puncture of the trocar were closed by fine silk stitches.

The patient made an uninterrupted recovery. Twice during his convalescence he developed slight fever, and once vomiting, due, apparently, to constipation. These symptoms were relieved by the prompt use of small doses of calomel. He continued in good health until June 6, 1898, when the former obstructive symptoms recurred. Through the courtesy of Dr. Ely the patient was placed in my charge. As the abdominal distention was much less than previously, an attempt was made to reduce the volvulus bimanually. The patient was chloroformed, and one of the house staff, a young woman with a very small hand, introduced her hand and forearm into the rectum, while an attempt was made to untwist the loop from the surface of the abdomen. As she could not get her finger past the constriction, nothing could be accomplished in this manner. No incontinence followed this anal dilatation. An incision to the left of the median line was made and the sigmoid was untwisted without difficulty. It was twisted in the same direction as before. It was my intention to stitch the bowel to the parietal peritoneum in such a way as to prevent the recurrence of the volvulus, but the great length of the loop, which, when spread out on the abdomen, followed the whole course of the large intestine, seemed to imply that any suture of the sigmoid in the wound already made would be without effect, on account of the long leverage of the whole loop of sigmoid. As the condition of the patient was not particularly good, no radical cure was attempted. His abdomen was therefore closed and stimulants were administered.

The patient made a good recovery, vomiting once or twice. He poked his fingers under the plaster-of-Paris dressing, and produced a mural abscess which was slow in healing. No hernia followed, however.

Nothing further was noted until the morning of January 1, 1899, when after a period of constipation the patient developed a temperature of 103°, with moderate abdominal distention. There was a spasm of the left rectus muscle, and a distinct tumor below the umbilicus to the left of the median line. There was no vomiting, and no pain nor tenderness on palpation. Active purgation and enemata produced several fluid stools on the day following, but the tumor remained, and I was asked by Dr. Ford, who was then in charge of the service, to see the patient, with a view to determining the advisability of operation. Though the signs of obstruction were less marked than on the previous occasions, they seemed to make the diagnosis of volvulus sufficiently certain, and in the light of the past history it was decided to reopen the abdomen. The sigmoid flexure had twisted as before, from right to left, but it contained only a moderate amount of gas, and little fecal matter. The ascending and descending limbs of the bowel were adherent by fresh fibrin, at the point of crossing. There were also old adhesions to the omentum from both of the previous scars. No gas could be squeezed past the twist, and as the bowel at its crossing was already showing inflammatory changes it was evident that relief by means other than operative could not have been obtained.

A second incision was made as for an appendicitis, and the descending portion of the sigmoid flexure was stretched smoothly across the lower part of the abdominal cavity and stitched to the parietal peritoneum close to the anterior superior spine of the right ilium. It was hoped in this way to prevent a recurrence of the volvulus.

The patient made an uninterrupted recovery, and thus far has had no recurrence of his trouble; but the elapsed time is, of course, too short to permit of an estimate of the success of the operation.

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SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

(Concluded from No. 9, p. 211.)

Regular Meeting, Wednesday, December 7, 1898, Dr. J. W. Elliot in the chair.

Dr. Beach read a paper entitled

RESECTION OF THE ELBOW-JOINT.

This young man about four years ago had an abscess which involved the elbow-joint; it was opened in three or four different places for the removal of dead bone, the whole process lasting about nine months. The elbow became firmly anchylosed at a point midway between flexion and extension. There was also paralysis of the little finger and ring finger and serious interference with the nutrition of the parts supplied by the ulnar nerve, as will be seen by the atrophy of the interossei muscles, which still persists. He has very little sensation in the two inner fingers now, but it is improving. The ulnar nerve was bound firmly to the bone by the cicatrix. I show him to-night because of his rapid recovery (three weeks) from complete excision, with good control of flexion, extension and rotation.

COMPOUND FRACTURE OF THE COCCYX.

The next case is a rather interesting one of compound-comminuted fracture of the coccyx. The patient, a man, fell sixty-five feet and struck upon the end of the spine, producing that injury and no other. The bone was comminuted, and there was a small wound opening to the bone which was enlarged and all fragments removed. He made a complete recovery in a month. In view of the neuralgia which is so apt to be associated with simple fractures, and is such a cause of invalidism in women and others who have had injuries of the kind, it is a question whether or not the complete excision of the bone soon after the injury is not a safer proceeding, though it may be more radical, than waiting for neuralgias to develop, and then to attempt cure by excision — an operation notably unsuccessful.

STONE IN THE BLADDER; NUCLEUS A FOREIGN BODY.

Another case is one of stone in the bladder. A young man while standing on a hay wagon was thrown down suddenly so that he sat upon one of the stakes that project upward into the hay. The stake entered the rectum through the anus, and passing forward perforated the bladder, carrying with it a piece of his trousers and a piece of his shirt. This occurred in June. The piece of trousers was removed by his physician at the time and the wound healed in the course of a week. From that time until October, when he entered the hospital, he had continual pain associated with micturition, the frequency increasing so that it occurred nearly every hour day and night. I found a stone, crushed it, and in washing out the fragments brought a piece of his shirt, which had been the nucleus of the stone. He made a complete recovery in ten days and went home well.

This case recalls one that entered my service at the hospital about fifteen years ago. The patient, a man, was pushed backward onto a window sash; part of the sash entered the bladder through the anus and rectum and made a wound through which I could pass two fingers. It was treated by passing a catheter into the bladder, another into the rectum, and washing out with an antiseptic solution once an hour. The wound healed. A good cicatrix formed in the rectum without the slightest fistulous opening.

Dr. C. A. **Porter** read a paper entitled

PISTOL-SHOT WOUND OF BRAIN, 32 CALIBRE; REMOVAL OF BULLET; RECOVERY.

The patient, Herbert S., age twenty-seven, whose case I am to report to-night, entered the Massachusetts General Hospital at noon on the 24th of March, 1895. After an attack of grippe he had shot himself the evening before, at 7 o'clock, in the left temple with a 32-calibre revolver. He indistinctly remembers the "kick" which the pistol gave to his hand; then nothing more till he recovered consciousness half an hour afterwards, and found himself lying on the floor of the room, free from pain but unable to speak.

His condition at entrance, nineteen hours after the injury, was as follows: Perfectly conscious and able to understand everything that was said to him; complete aphasia; said the two words "well" and "yes," spoken very slowly and with great difficulty.

The pupils and reflexes were normal. There was no paralysis of motion or sensation, though the right leg was distinctly weaker than the left. Temperature 101°; pulse 108, of good quality; respiration 38; color good. A friend who came with him informed me that two-thirds of the bullet had glanced from the skull and been recovered from the ceiling. Examination of the left temple showed two wounds; as seen in the diagram, the lower, that of entrance, situated two and one-half inches above a point one and one-fourth inches anterior to the auditory meatus, on a line connecting the top of the auricle with the external angular process. It was ragged and powder stained. Three-fourths of an inch upwards and backwards was a second smaller opening — the wound of exit; brain matter and blood oozed from both. The tissues about were infiltrated and tender.

Dr. C. B. Porter and Dr. Warren saw the case and most kindly asked me to operate.

A large flap was reflected downwards, revealing the subcutaneous tissues full of powder, and an irregular depressed fracture of the skull — grooved and "leaded" by the bullet, which split on the upper margin; two-thirds of it passed outward, the remainder entered the cranial cavity. The cracked bone was removed with rongeur forceps for an area the size of a silver dollar, exposing the dura much blackened with powder, and a small hole from which brain tissue escaped. The dura was carefully curetted clean, disinfected and incised; a dirty canal was seen passing inwards through the brain from which a few small pieces of bone were removed. Along this canal a Nelaton's probe was gently passed, the head having been placed in such a position that little force apart from gravity was required to guide. With surprising ease it passed inwards and backwards for three and one-half inches, and impinged against an elastic membrane which was evidently the falx cerebri; on pushing the probe a little farther backwards and glancing along the membrane a hard body was distinctly felt, and easily removed with dressing forceps; it was the remainder of the bullet, much battered and out of shape.

The tract was irrigated with boiled water, the dura partly closed after a gauze wick had been inserted the whole length of the canal, the wound drained with another wick, and the flap sutured in position. The respiration, which had been poor at the beginning, evidently improved after relief of pressure, and the patient went to the ward in good condition. The patient left the hospital in a month, the wound having healed without suppuration.

I wish briefly to speak of that which seems most interesting in the operation and subsequent convalescence:

(1) The aphasia and weakness in the right leg. It seems most likely that the bullet passed through the top or just over the speech centre, then through the centrum ovale, and located itself just inside of the left paracentral lobule, where is situated some of the centre for the lower extremity. The weakness of the right leg persisted for a number of weeks and then disappeared. The aphasia slowly but steadily improved, replaced by a peculiar circumlocution. Answers to questions were slow and indirect, the patient using long words unusual to him; of this he was himself conscious: as if certain before used association tracks had been injured and the ideas had to go by roundabout ways. When asked "What we keep time with?" he answered a "chronometer," unable to think of the word watch until one was shown him, when he immediately said "watch." Since the injury there has always been some stammering, particularly when he becomes excited. When asked to write, ten days after the accident, "God save the Commonwealth," he wrote in stammer language—"Commomowealth." There has been continuous improvement in speech with one exception: In February, 1897, he was accidentally struck dumb by a blow over the skull defect. He could neither speak nor write for two hours; speech suddenly returned to be again lost, and the former condition was not recovered for three months.

(2) On three separate occasions the delicate sensitiveness of the brain to abnormal pressure was well illustrated. In shortening the wicks there occurred an accumulation of serum in the canal, manifested each time by headache, dulness, and more aphasia, which symptoms disappeared on deeper drainage.

(3) In probing for the ball and in the subsequent dressings I was impressed with the importance of using a very light, aluminum probe, with the largest calibre possible, for the danger of a false passage with a director or a small probe seemed greater even than in the urethra. The ease with which the course of the bullet could be followed by the probe guided gently and allowed to travel by its own weight was really remarkable.

(4) Epileptic attacks developed, at first at intervals of a month or more, then, under the use of bromides, a respite for six months, and, except for an

attack ten days ago, there have been none for over twelve months. If any aura precedes them it is one of speech — a frantic impotent desire to cry out comes to him; many phrases run through his mind and he becomes unconscious in silence.

(5) The question of operative intervention naturally presents itself now. Undoubtedly there is adherence of the brain to the dura over a considerable area; freeing this surface, and placing "gold foil" or the lining membrane of an egg between the two surfaces might benefit the patient, but a year's freedom from epilepsy and the uncertainty of the result have argued in my mind against operative interference.

Dr. C. B. Porter: A number of years ago a young man shot himself in one of the depots, was brought to the hospital, and was aphasic with the exception of being able to say "four-fourteenth." He seemed to understand what was said to him. Dr. Putnam saw him in consultation with reference to operation and advised against it. He went on vacillating in his course some little time, and finally turned for the better, and after some weeks he returned to New York. Some months afterwards his father wrote to me that he was just like his former self, and no one would have known that anything had happened. That was a 22-calibre and the bullet was never removed.

Dr. Courtney read a paper on

SPASMODIC TORTICOLLIS.

The feature of chief interest in the case I have to show is the apparatus designed for it by Dr. Lund. This woman is forty-three years of age and single. Her trouble, spasmodic torticollis, developed after a severe mental shock about two years ago. It was the severest case of the kind I ever saw. In fact, she had done little since the onset except hold on to the left side of her jaw in order to prevent the spasmodic jerking of the head. These movements were rhythmical and not only the sterno-cleido-mastoid but all the rotators of the left side were involved. Although the main etiological factor was a powerful emotion, there were no manifest hysterical stigmata. It was found that with the occiput firmly pressed against the wall, not only the spasms but the tendency to spasms ceased, and with this in view Dr. Lund devised the apparatus which you are examining. It consists of a vertical band of metal which lies against the spine and is held in position by fastenings about the body, its weight being supported in part by straps over the shoulders. The upper end of this band projects above the collar of the patient's dress and carries a flat, padded horizontal arm which hugs the occiput on either side, keeping it rigid with a slight forward inclination. Improvement has been very marked, for you see that the patient, even with the apparatus removed, shows very little tendency to spasm.

ACUTE CHOLECYSTITIS SIMULATING APPENDICITIS.

Dr. Chute reported a case operated upon by Dr. Elliot a week before, in which an acute inflammation of the gall-bladder very closely simulated appendicitis. The patient had had two attacks, in both of which the pain and tenderness had been referred to the right iliac fossa. An interesting point was the marked disproportion between the temperature and pulse rate. With a temperature of 106.2°, the pulse was but 110. Such a disproportion in a case supposed to be appendicitis should make one consider the possibility of diseased gall-bladder.

Dr. A. Thorndike read a paper entitled

OPERATIONS ON SPINA BIFIDA UNDER THREE MONTHS.

I have a few photographs of cases operated on in early life. It so happens that all my operations for spina bifida were under three months of age. This photograph is of a child operated on four hours after birth. The sac, a lumbar one, was about as large as my hand, and was completely collapsed and the pedicle was small. This girl is now eighteen months old and quite well; on coughing there is no impulse in the scar and I cannot make out any gap in the line of spinous processes. A year ago I reported that case and three others of rupture of the sac, two of them during childbirth and one spontaneously.

One of the other cases reported at that time was a premature baby of seven months in an incubator. The rupture took place from ulceration, and the operation was a pretty hopeless one any way, but we managed to prevent septic infection by stitching it up. The child lived eight days and died from gradual loss of weight and marasmus, not from any septic infection of the spinal canal; there were no convulsions. The third case operated on at that time died with convulsions thirty-six hours after operation.

I operated the 17th of April, 1898, on a ruptured spina bifida of which I have this photograph. The sac was a very large one with broad base; it involved the third, fourth and fifth lumbar. The rupture occurred at birth three days before she was admitted to the West End Infants' Hospital; the rent was about one and a half inches long and exposed the lumbar enlargement of the cord to the air; it is shown in the photograph. There was hydrocephalus with a frontal meningocele and other deformities, and when the sac was opened the fluid was turbid. It was not easy to close up the sac with sutures, and it was also difficult to get skin enough to cover; so that a space as large as a ten-cent piece remained uncovered with skin, which closed in two months. This child lived three months and died without any septic infection of the cord; no convulsions.

The last case Dr. Palmer sent me was a girl two days old at the time of operation. She has done uniformly well. The operation was exactly what Dr. Lovett has described. A large nerve trunk ran from the spinal cord to the centre of the sac and had to be covered in carefully and prolonged the operation. She is now six months old, has no hydrocephalus, the head is of the right size and no impulse is felt with the finger on the scar when she cries.

These cases are all too early to report. It would be far better if we could report cases ten years old, but I don't think they are going to develop hydrocephalus. The method of stitching has been the same as that employed by Dr. Lovett, only I have used chromicized catgut on two of them. I have used three layers of sutures just as he did. I also have used a ligature whenever I could around the pedicle of the sac. I think the main thing is a tight joint.

We are not yet in a position to decide what cases require immediate operation, and in what cases it is better to wait until they are five years old. From my small experience I have come to adopt the following rules: (1) All cases that have ruptured should be operated on at once; (2) those that are covered with thin membrane which threatens rupture are safer operated; (3) cases where deep ulceration may lead to a rupture demand operation; (4) those in which you can be sure you have to deal with a simple meningocele with small pedicle.

Myeloceles of course are less favorable, and it is well to wait until the children are older before doing an operation, provided there is a firm covering of sound healthy skin over the tumor. In young infants there is more danger from shock and more likelihood of paralysis, due to imperfect isolation and protection of the nerves attached to the sac.

Dr. Marcy: I deem the essentials for the success of operative measures for the cure of spina bifida to be as follows: If the tumor is of considerable size, before opening the sac the head and shoulders should be placed lower than the portion of the spine to be operated upon, and maintained in this position until the final closure of the wound. The sac is to be freely opened and all nerve filaments are to be carefully preserved and replaced. The dissection is to be made sufficiently free to permit a careful utilization of the structures requisite for a re-formation of the canal. It is important to suture the sac so that the spinal fluid will not escape through the re-formed structures, and in my opinion this is best effected by the use of a fine tendon applied in a double, even, continuous suture, using a needle of moderate size — so-called shoemaker's stitch. This gives perfect coaptation without undue constriction, with a minimum of devitalization, and is water tight. The superfluous portion of the sac is cut away. The strong fascia on either side is freed sufficiently to permit its inversion without undue tension, and is inverted toward the median line and held in coaptation by suturing it in a similar manner. The skin is held in apposition by a light continuous running suture, and the wound is sealed with iodoform collodion without drainage. The patient should be kept in a horizontal position for some days, and if the wound is aseptic primary union will supervene and a permanent cure will be the probable result. I take pleasure in calling attention to the fact that the operative cure of spina bifida in all its essentials is an American operation.

Sir Charles Bell, in 1791, suggested the possibility of the cure by surgical interference, but Dr. A. Trowbridge,[1] of Watertown, N. Y., so far as I have been able to ascertain, was the first who attempted to put into practice the suggestion of the great Edinburgh surgeon. He reports three successful cases, followed by complete cure. Modern aseptic surgery gives a comparative certitude of result, which causes early operative interference to be earnestly recommended as the rule of practice.

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[1] Boston Medical and Surgical Journal, January 23, 1829.

Medical Progress.

PROGRESS IN PATHOLOGY.

BY JAMES H. WRIGHT, M.D., BOSTON,
Director of the Laboratory of the Massachusetts General Hospital.

EXPERIMENTAL FAT NECROSIS.

In a paper published in this Journal in 1897 H. U. Williams reported some experiments on the subject of the fat necrosis associated with acute pancreatitis. These consisted in obstructing the vessels and ducts of the pancreas in cats, and then lacerating the organ, for the purpose of determining whether the escape of the pancreatic juice into the peritoneal cavity would cause fat necrosis of the adjacent adipose tissue. These experiments were undertaken in view of the facts that fat necrosis seems to consist of a decomposition of the neutral oils of the adipose tissue cells, and that the pancreatic juice is known to contain a ferment capable of decomposing neutral oils. The experiments were tried on twenty cats, and in five instances well-marked fat necrosis was produced. In a recent paper[1] Dr. Williams submits the results of further experiments on this subject.

Since in three of the five positive results above mentioned an accidental infection with pyogenic cocci occurred, the question arose as to whether the bacterial infection might not have played a part in producing the necrosis. To answer this question, similar operations were performed on cats, and infection with the pyogenic cocci purposely induced. These experiments gave inconclusive results, so that another method of experimentation was adopted.

This consisted in inserting pieces of cat's pancreas in the subcutaneous and intermuscular adipose tissue of cats, under special precautions to avoid infection of the tissue by bacteria. Of thirteen experiments, in which the effect of bacterial infection was considered to have been ruled out, eight resulted in fat necrosis and five gave negative results. The histological character of this necrotic fat tissue seems to be identical with that of the necrotic peritoneal fat tissue, obtained in the author's earlier experiments. It may therefore be regarded as proven that fat necrosis may be produced by the ferments of the pancreas independent of the activity of bacteria.

PROTOZOA IN CANCER.

Jürgens[2] has observed in the gastric mucus of a series of cases of cancer of the stomach, and in the bronchial mucus in a case of cancer of the lung, a parasite, which he thinks belongs in the group of the gregarines. The parasite is fusiform in shape, is provided with an external envelope, and contains a large number of spores. The spores have ameboid movement and invade the epithelial cells of the mucous membrane. After one of these spores has entered an epithelial cell it continues its movement and increases in size until it entirely fills the cell. Later it escapes from the cell and appears as a small, rounded, granular body enveloped in a membrane with a double contour.

BLASTOMYCETES AND MALIGNANT TUMORS.

During the past two or three years Francesco Sanfelice has devoted a great deal of experimentation and publication to prove true his idea that malignant tumors are due to an infection or parasitic growth of some forms of blastomycetes or yeast-like organisms. This idea has not received general acceptance among pathologists, because the evidence offered in its support has been far from convincing. In some experiments recently reported[3] two dogs were inoculated with cultures of a blastomycete which had been previously shown to be pathogenic for various animals, although it had not produced growths like malignant tumors. One of the dogs was inoculated in the mammary glands, the other in the testis. In the case of the first dog death followed after ten months, with cachexia, and at the autopsy a tumor growth was found in both of the mammary glands inoculated, as well as an enlargement of the inguinal lymphatic glands. Microscopical examination is said to have shown that the tumors were typical adeno-carcinomata, with metastases in all the lymphatic glands. The other dog died after about four months, and the autopsy revealed extensive new growths in and about the testis, with tumor nodules in the penis. These new growths had the histological characters of adeno-carcinomata also, and contained blastomycetes.

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[1] Journal of Experimental Medicine, vol. iii, No. 6, 1898.

[2] Berliner medicinische Gesellschaft, October 6 u. November 2, 1898.

[3] Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten. Bd. xxiv, Nos. 4 und 5, 1898.

THE VITALITY OF THE PNEUMOCOCCUS IN DRIED SPUTA.

Ottolenghi[4] has examined the questions of the duration of life and the virulence of the pneumococcus in dried sputa. Cultures and inoculation experiments showed that the organism retains its virulence under such conditions for more than seventy days, after which time it may be still alive, but devoid of virulence for animals.

THE HISTOLOGY OF THE LESIONS OF TYPHOID FEVER.

The subject of the histological characters of the lesions of typhoid fever has received an important contribution in the recently published studies of Dr. F. B. Mallory (from the Sears Pathological Laboratory of the Harvard Medical School and from the Pathological Laboratory of the Boston City Hospital). The questions of the origin and character of the cells found in the enlarged follicles of the intestine, in the swollen mesenteric lymphatic glands, and in the spleen, as well as the nature of the so-called lymphoid nodules in the liver, first described by Friedreich in 1857, have received little or no serious attention from pathologists in recent years. Mallory studied a number of early cases of the disease with the modern improved histological methods, devoting special attention to the intestine, lymphatic glands, spleen and liver. His conclusions may be summarized as follows: The typhoid bacillus produces a mild, diffusible toxin, partly within the intestinal tract, and partly within the blood and organs of the body. This toxin causes proliferation of the so-called endothelial cells, which line the channels of the lymphatic apparatus and the blood-vessels. The proliferation is most marked and abundant along the lines of absorption from the intestinal canal. It is also produced by toxin absorbed into the general circulation, and is more marked in places where the circulation of the blood is slow. Moreover, this proliferation of endothelial cells occurs in the lymphatic channels throughout the body under the influence of toxin, which is distributed by the blood stream. These proliferated endothelial cells are larger than polynuclear leucocytes, have abundant protoplasm, irregular shaped nuclei, and are markedly phagocytic, taking into their interiors other cells and red blood corpuscles with apparent avidity. The enlargement of the solitary and agminated follicles of the intestine, of the mesenteric lymphatic glands and of the spleen is due almost entirely to the presence in them of enormous numbers of these phagocytic cells of endothelial origin.

The characteristic necrosis and ulceration of the swollen follicles of the intestine is the result of thrombosis of their veins and capillaries, and is not the direct effect of the toxin nor of bacteria. This thrombosis is produced by degenerative processes in proliferated endothelial cells situated beneath the lining endothelium of the vessels.

The lymphoid nodules in the liver arise from aggregations of the phagocytic endothelial cells in the liver capillaries at various points, with necrosis and disappearance of the liver cells of the part whose capillaries are thus occluded. Later, these aggregations of phagocytic cells undergo degenerative processes in turn. Some of these phagocytic cells come to the liver through the portal vein, others arise in the liver by proliferation from the endothelium of the capillaries of the liver. Similar cell aggregations are to be seen in the lymph spaces and in the vessels about the portal canals.

These proliferated endothelial cells may also pass from the liver in the blood stream and go through the lungs into the general circulation. Some few of them may also get into the general circulation by way of the thoracic duct.

Focal lesions in the kidneys similar to those in the liver may be produced by these cells occluding the veins of the pyramids, and in the heart and testicle by the occlusion of lymphatic vessels by them. Mallory thinks that "the thrombi, which occur in the heart and in the veins of the lower extremities in the course of typhoid fever, probably owe their origin to the same sort of lesions that cause occlusion of the vessels in the intestine," namely, degenerative processes in proliferated endothelial cells situated beneath the endothelial lining of the veins or cavities of the heart.[5]

GENERAL INFECTION WITH THE GONOCOCCUS.

Colombine[6] reports a case of gonorrhea which was complicated with bubo, and with suppurative epididymitis and parotitis. The gonococcus was found, unaccompanied by any other bacteria, in all three of these complications, and was also found in the circulating blood. The patient recovered.

In order to test the identity of the coccus cultivated from the circulating blood, it was inoculated into the urethra of a young man. The first symptom of urethral inflammation appeared the day after the inoculation, and on the second day a typical gonorrhea was present. From the pus of this experimental gonorrhea the same coccus was again isolated in pure culture. The experimental disease lasted many months and was typical in its course, so that the identification of the coccus cultivated from the blood may be said to have been as complete as possible.

BLOOD PARASITES IN BERI-BERI.

F. Fajardo[7] describes a small unicellular organism which he has observed in the blood of cases of beri-beri. The organism is found both inside and outside of the red corpuscles. It is smaller than the parasite of malaria, but like it seems to form pigment granules in its interior and to undergo a cycle of development.

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[4] Archivio per le scienze mediche, v. xxii, fasc. 1, 1898.

[5] Journal of Experimental Medicine, vol. iii, No. 6, November, 1898.

[6] Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten, Bd. xxiv, No. 25, 1898.

[7] Loc. cit., October 28, 1898.

It is demonstrable not only in the blood of the internal organs but also in the peripheral circulation.

ADENOMATA OF THE LIVER.

Englehardt[8] concludes from his observations that the true adenomata of the liver are to be divided into two classes, namely, the solitary and the multiple adenomata. The solitary adenomata are made up of a tissue very similar to liver tissue and are congenital, benign tumors. The multiple adenomata are made up of liver cells, arranged in a glandular manner, and they occur not only in normal but also in cirrhotic livers. These neoplasms may invade the vessels and may form metastases, so that they are closely allied to the carcinomata.

The author excludes from the true adenomata of the liver the gall-duct adenomata of Wagner and various forms of hyperplasia of liver tissue which have been described by others.

THE BACTERIOLOGY OF PERTUSSIS.

Otto Zusch[9] sums up our present knowledge of the bacteriology of whooping-cough, and reports the results of his study of twenty-five cases. In each of these cases peculiar small bacteria were found in the sputa, often in large numbers. They were sometimes seen in clumps or masses, or in leucocytes, and are probably identical with the bacteria described by others in this disease.

The bacteria seem to be more numerous in uncomplicated cases. When marked bronchitis or pulmonary complications supervened they diminished in numbers and were replaced by other organisms. This would seem to indicate that the organism does not infect the lungs.

It is a short, small-sized bacillus, which grows on ordinary culture media. Animal experiments gave no positive results.

THE VACCINIA BODIES.

In the lesion of vaccinia Guarneri-Monte and others have observed certain peculiar bodies which are regarded by some observers as protozoa and parasites.

Armand Hückel[10] has submitted the question of the nature of these bodies to a most careful and elaborate experimental investigation, working on the cornea of rabbits. Rabbits are susceptible to vaccinia, and their corneas, inoculated with the virus, form a favorable site for the study of the histology of the disease.

Hückel found a great variety of these bodies, the description and properties of which may be omitted here. It is sufficient to state that the author believes that they are all clearly degenerative products of the protoplasm of the epithelial cells. He was unable to throw any light on the nature of the vaccine virus.

EPIDERMOID CARCINOMA OF THE GALL-BLADDER.

Nehrkorn[11] reports a case of carcinoma of the gall-bladder with metastases, in which the histological character of the neoplasm was that of epidermoid cancer. This was most clearly seen in a metastasis in a lymphatic gland, in which the characteristic epithelial "pearls" were present.

This development of a squamous epithelial neoplasm from the columnar epithelium of the gall-bladder is a surprising occurrence and is of considerable histological interest. The author's interpretation of the case, which is buried in a mass of verbiage, seems to be as follows: It has been clearly shown that the mucous membrane of the gall-bladder may be transformed into a membrane similar in histological structure to the epidermis, that is, the cylindrical cells may become squamous cells. This may occur as the result in chronic inflammation or of the presence of gall-stones. In this case gall-stones were present, and it is not unlikely that, as a result of their presence, the epidermoid transformation of the mucous membrane took place. The transformed epidermis-like mucosa then produced a carcinomatous neoplasm, which assumed the histological characters of the common epidermoid carcinoma.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, SECRETARY.

Regular Meeting, Monday, December 19, 1898, **Dr. R. H. Fitz** in the chair.

Dr. J. J. Putnam read a paper entitled

REMARKS ON THE DESIRABILITY OF A MORE CAREFUL STUDY OF HYDROTHERAPEUTICS BY THE GENERAL PRACTITIONER.[1]

Dr. O. F. Rogers: I cannot attempt any general discussion of the subject of hydropathy, as it is too large. Three or four times in the past ten years it has happened that I have tried to do it and I never succeeded in interesting anybody in it. For perhaps twenty-five years I have used water in the treatment of disease, and as time passes I use it more and more and, I think, with more satisfactory results. I believe that water as a curative agent is entitled to rank with opium, mercury, cinchona, iron and alcohol. Believing this, and remembering that from the time of Hippocrates to the present some of the ablest and most philosophical clinicians have used and have strongly recommended hydropathy, I have been amazed that the general medical public has taken such infinitely little interest in the subject. There is therefore very little reason why I or any other man should attempt to give you to-night very much clinical evidence in regard to the matter. It would have exceedingly little weight. I am sure that by the aid of hydropathy I have seen cures or improvement result in cases not successfully treated by drugs and hygienic measures by others and by myself. A few years ago I became aware that the results of treatment by the means at my command were not so good in cases of chronic disease as by those who possessed the appliances of a thoroughly equipped hydriatric institute. Most cases of acute disease may be well treated in general practice by the appliances to be obtained in the average household, but this is not so in many of the chronic diseases. Modern hydropathy requires as much accuracy in prescription and application as is required in the treatment by drugs. Some of the greatest triumphs by hydropathy have been gained in the treatment of diseases of the nervous system. Dr. Page, the late superintendent of the Danvers Insane Hospital, and I investigated the matter very thoroughly, and we became convinced that no hospital for the care of nervous diseases can do the best that can be done for its inmates that has not the modern hydropathic appliances. Therefore these appliances were installed in the Danvers Hospital and the results have been very satisfactory. Less so-called chemical restraint has been used, excited patients have been calmed, depressed and melancholic ones cheered and stimulated, and in many ways the condition of the patient has been improved. The greatest difficulty we encountered was not in getting the appliance but in learning how to apply the apparatus to advantage and without harm to the patient. So far as I know no harm has been done, but generally very great good. In nothing in medicine does experience count for so much as in hydropathy. Some of the men in Europe have had enormous experience and can accomplish results I think very difficult, and perhaps impossible to duplicate in this country, although in several institutions the apparatus is better adapted to the end in view than almost anything to be found in Europe or in England. Many of the results in chronic diseases have been accomplished by very simple measures, but some of the more important ones cannot be accomplished except by machinery that is precisely adapted to the end in view.

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[8] Deutsches Archiv. f. klin. Medicine, Bd. 60, 1898.

[9] Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten, Bd. xxiv, No. 20, 1898.

[10] Die Vaccinekörperchen. Nach Untersuchungen an der geimpften Hornhaut des Kanlnchens. Zweites Supplementalheft der Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie, 1898.

[11] Virchow: Archiv f. path. Anat., Bd. 154, Heft 3, 1898.

[1] See page 225 of the Journal.

It is self-evident to me that there is great need in Boston of an establishment where hysteria, especially hysterical spine, hysterical paralysis, neurasthenia, neuralgias, especially sciatica, gout, rheumatism, phthisis, anemia, can receive the benefit of properly ordered hydriatric procedures. Precisely why Boston has no such place it is very difficult to see, unless it is that general indifference to the whole subject, which seems to be universal. The strongest statements made in favor of the use of water seem to fall dead. I am sure that every man here will in the course of every year of his life find a good many cases that can be very much better treated by him with medicines and general hygienic measures, plus the aid which would be derived from sending his patients to a hydropathic institute, or a place where an expert in hydrotherapy could administer various forms of douches and baths, etc. Any one who has studied the matter much has seen much of it, feels just as certain of this as that the sun rises and sets. It is also to me self-evident that it is almost time that the great body of the medical profession awoke to the fact that hydropathy has at last established itself on a sound scientific basis, and that there is more of value in its teachings and practice than it is given credit for, that every general hospital ought to be equipped with a complete hydropathic outfit, and that medical colleges ought to cease to graduate men who don't know the difference between a Scotch douche and a glass of hot Scotch whiskey.

DR. COGGESHALL: It has always struck me, in watching the advantages which prominent men of the class of men who are our consulting physicians have over the general practitioner, that it was quite as much in the wider range of their resources in therapeutics as in their superior ability in diagnosis, and it seems to me that one of the greatest difficulties that the general practitioner — I do not mean the class of men who are visiting physicians to the hospitals, but the mass of the profession — labors under is that he has very few medical resources beyond drugs, and that he is apparently unconscious — almost unconscious — of the wide applicability of other means of treatment. Drugs and surgical operations are the widest range of his therapeutic imagination, and if we are to get the best results with a great many forms of chronic diseases especially, and I think, also, with a great many acute diseases, it seems to me that we ought to pay more attention to other means of treatment, and among those in my short experience I have seen none I should attach more importance to than hydropathy. It is commonly thought of, I think — which accounts partly for the indifference to which Dr. Rogers alluded — as a process of giving people baths, and that there is a difference of temperature; you may give a hot bath or a cold bath, but any one who has studied the work of Baruch in New York or Winternitz in Vienna, and many other eminent men in Germany and other parts of Europe, must realize that hydropathy is a much more complicated subject than the mere question of giving a bath and giving a bath hot or cold. I am sure that if physicians did realize the amount of benefit that in the wide variety of cases to which Dr. Putnam and Dr. Rogers alluded they could derive from water treatment of various forms they would take more interest in them. The objections to them with the general practitioner are of course obvious and serious. It would take a great deal of time to study the details of treatment. It would be like having to learn a whole materia medica over again almost, and it requires more time to plan the treatment for an individual case than to write the most carefully considered prescription, and yet I cannot help believing, from what I saw abroad, and what little opportunities I have had for personal experience since I have been in practice, that the results would repay the additional time and trouble which the careful carrying out of such treatment would require. Then there is the expense, which is, for the finer details of such treatment, out of the question for the vast majority of private patients. I have been able in the case of one private patient to get him to put into the house some of the appliances required for that case, and I think the patient has always felt since that, although he expended some hundreds of dollars on them, he got better money's worth out of it than out of his physician's prescriptions. That, however, would be a very exceptional case.

The only way in which we can carry it out successfully, it seems to me, would be if we could get an institution in Boston which would undertake to provide all the apparatus required for the complete system of hydropathy and carry out the treatment of cases under the direction of physicians, perhaps with the assistance of consultation advice as to the treatment in the case from some one who had had a large experience in that kind of therapeutics.

Another reason, it seems to me, why an institution would be an important, in fact an absolutely necessary, prerequisite to any general use of it would be that it requires skilled assistants to apply the treatment. I have found some very disappointing results in attempting to carry it out in private families; even the simple forms of baths, giving the most minute directions I could to members of the family who were supposed to do the work, and I don't think I have seen many good results unless I had a nurse to superintend and apply the treatment throughout; and I don't think it is very easy for the patients to do it for themselves, even after they have been under the treatment some time, because one constantly wants to alter the details of the treatment in the same case.

I am afraid it is true that there is very little use in quoting clinical experience to gentlemen who have not felt much interest in it, but I suppose that the presence of those here to-night indicates that they have some interest in the subject, and I can only say, without attempting to go into details of cases, that I have tried the treatment in widely various forms in a pretty wide range of cases in the last few years, and it seemed to me that I usually, though I have not felt as enthusiastic about it as some of the devotees of hydropathy, have gotten highly satisfactory results, to say the least. The treatment in the great majority of cases was carried out in connection with other treatment. The diseases in which I have seen it effect most good were among nervous diseases — hysteria and neurasthenia, in both of which the results appear to be excellent. Among the commoner diseases that in general practice I should think it was most valuable, for one I might mention many cases of organic diseases of the heart. I began to use this treatment for diseases of the heart about three years ago; tried it in one case with a good deal of hesitation. Now, with the great majority of cases of valvular disease of the heart I see I use it with a great deal of confidence, and generally the results have justified that confidence. I am sure that every case of simple dilatation of the heart is benefited by it, and cases at least of mitral disease have seemed to me, in the comparatively few I have had an opportunity to try it in, to be excellently adapted to it. In the case of the Schott treatment of course it includes exercise. I have tried the exercise without the baths in a number of cases, and, although I got benefit, I got much less benefit than in the cases in private practice that could afford to have a nurse come to the house and give them the baths as well as the exercise, and in one case, in which I tried the baths alone, I got as good results I think as in the baths and exercise combined.

In acute diseases the use of baths in typhoid of course is familiar to all of us. I think there is a wide divergence of opinion among physicians who have tried them, as to the benefit, and it seems to me that a good deal of that divergence is due to the fact that the details of the treatment have not been carefully carried out. I remember visiting a large hospital some years ago in which the visiting physician told me they were using the Brandt treatment for typhoid fever, and he said it in a rather sceptical way, which implied that he did not get many results from it and did not expect to. I found he was giving the baths by sponging the patients in bed. That is not Brandt's treatment. It is an illustration, to my mind, of the laxness as to the details with which experiments in such treatment are often made. He did not get very good results, and I think the treatment was abandoned as the result of experiments which consisted entirely of sponging the patients with cold water. I have had very little personal experience in the treatment of typhoid fever with it, but I have had experience in the treatment of two conditions occurring in acute disease which gave me a great deal of confidence in the value of simple cold bathing in such cases, and that is in the matter of convulsions occurring in children in connection with any severe or light disease, and in the treatment of delirium. The effect in delirium in pneumonia or typhoid fever has been, as I have seen it, certainly more marked than any other treatment I have ever seen attempted for it, and in convulsions of children, even in hopeless diseases, like tubercular cerebro-spinal meningitis, certainly the relief to the symptoms and the greater quieting, the rest, the improved action of the heart which we got from suppressing the convulsions with the cold bath, was well worth the trouble of giving it. Of course in such cases as that, and in a case of delirium occurring in pneumonia, I found the greatest difficulty in persuading the family that the patient would not be killed by immersing him in water as cold as I wished to put him into. I have tried it in a number of cases, and as yet have not seen any bad results.

I suppose it is fair to class under water treatment the application of ice — ice-bags to the chest in pneumonia and bronchitis. That is another form of treatment I have used repeatedly, and always, it seemed to me, with some or a good deal of benefit; but if we are to get satisfactory results in such cases as these I have spoken of, whether in the chronic forms of diseases like hysteria and neurasthenia, or in the treatment of delirium and convulsions occurring in acute diseases, we must attend to the minutiæ of the treatment, and until we do so I do not think it is fair to draw inferences from the results. Dr. Putnam mentioned some examples of fallacies involved in reasoning about the treatment, and I should like to mention one or two others.

I believe Dr. Putnam mentioned the fact that the temperature was not much lowered by short cold baths, and Baruch I think was the first who called attention to the fact, that although the temperature as taken in the mouth was lower the temperature as taken in the rectum was not materially affected. Some physicians, in thinking of the application of cold bathing to typhoid fever, have apparently assumed that the principal value of it was as an antipyretic, and that it had the same use as acetanilid or phenacetin, except that it might be less depressing. I cannot believe that that is its value; in fact, as I have tried it, in cases of typhoid, I have found there was perhaps one-half degree fall in the rectum, although there might be a marked fall in the mouth; and I have always regarded the rectal temperature as the true indication of the fall, and the mouth temperature as a side issue, to which I did not attach particular importance. I never valued it because I thought it would lower the temperature, but because of its effect on the central nervous system and, through that, upon the circulation. I believe that is the true value of it in such cases, and if it does act as a nervous stimulant, if it is energetic and lasting in its effects, it is of much more significance than the mere effect on the temperature.

As illustrations of the importance of attention to detail I should give examples of the way in which it is often laid down in the books, that baths should be given at such and such temperature, etc., and if it is carried out by physicians who have not used it much exactly on those lines without reference to the marked difference we find among patients in their powers of reaction — I mean patients in about the same condition of health. Two cases will differ very much in the way they will react to treatment; and the details of the packs, the douches or whatever is being used in the case ought to be worked out by carefully feeling one's way with regard to that individual patient. Where the reaction is not good I have never hesitated in any form of acute disease to use alcoholic stimulants before the baths, and I would always do that rather than abandon the baths in such case, and I have found that hot whiskey and water or brandy and water before the bath obviated entirely the unpleasant effect in such cases.

One other illustration of the importance of detail I should like to mention is in the method of giving the baths when the patient is not in the tub — the so-called sponge baths. It has always seemed to me that the sponge is the poorest thing that could be used. You cannot get any friction from it, and it is cold in a disagreeable way. It is more apt, it seems to me, to chill the patient, whereas if rough bathing gloves were used and the cold water rubbed on the patient, instead of being sopped on with a sponge, the effect would be markedly different. One very important factor is the pressure under which the douche or spray is applied, which is independent of the matter of temperature, and that is another thing that makes it in private houses almost impossible to secure the results that can be secured in an institution suited for the purpose.

In one respect my experience has differed from that of Dr. Putnam, and that is with regard to exercise after the bath. In almost every case it seemed to me the patients got along better if they did not take any exercise at all after any form of cold-water application, but rested in bed; and that is one of the disadvantages of treatment in an institution which patients visit only for the treatment. The patient in many cases could not take much exercise, and would have to rest, so that the stay would have to be prolonged, and it complicates the question of dealing with such cases in institutions if one has to supply a resting-place for a large number of patients.

It seems to me almost disgraceful that our students from the medical schools should be allowed to graduate with practically no systematic teaching in regard to non-medicinal therapeutics—meaning massage, medical gymnastics and water treatment; even the use of electricity for therapeutic purposes is almost entirely neglected in our teaching of students in the medical schools of this country generally. I hope there will come a day when that defect will be remedied.

In reply to a question Dr. Coggeshall said that in carrying out the Schott treatment with dispensary patients he was only able to give the exercises because he had no facilities for giving the baths. In private practice he had had the salt prepared by an apothecary, simply combining the chloride of calcium and chloride of sodium with bicarbonate of sodium, and after that had been dissolved in water adding dilute hydrochloric acid, the strength of each bath being determined by the packages, numbered one, two, etc., gradually increasing the strength as the patient became accustomed to the bath. That was the method recommended in a paper in the bulletin of the Johns Hopkins Hospital a year or so ago, and as far as he had had experience with it it was very satisfactory. He had not tried the Triton effervescent salts.

DR. E. O. OTIS: Just a word in regard to the application of hydrotherapeutics in the treatment of pulmonary tuberculosis as I saw it applied in German and Swiss sanatoria. There it is considered an essential part of the treatment, not only in the symptomatic, but in the general, treatment, and it is most carefully studied out and accurately applied to each patient. In giving, for instance, a douche, the physician himself takes charge of it, turns the water on and off, and with a stopwatch in his hand determines the number of seconds it shall be applied to each patient; and so in the other various hydropathic applications. So far as I know, in this country hydropathy is not used so carefully and thoroughly in the consumptive sanatoria as it is in the German and Swiss ones.[2]

DR. MALCOLM STORER read a paper on

RETRODISPLACEMENTS OF THE PREGNANT UTERUS.[3]

DR. BURRAGE: This is a subject I have been very much interested in, especially so since I reported some cases three years ago. Dr. Storer has given the subject a most careful going over, and his review of the literature is most thorough. There is one point he did not bring up, and that is the effect of pregnancy on adhesions. It seems to me I have seen several cases where the adhesions were softened by pregnancy and the uterus righted itself without any treatment whatsoever, but I think there is no question that these cases are exceptions and that a majority of cases of retrodisplacement of the pregnant uterus demands careful diagnosis and early treatment. In the cases I have seen there has been no retention of the urine as a complication. I have generally succeeded in replacing the uterus in the way he states — by putting the patient in the knee-chest position and using a hook in the cervix and bimanually manipulating as he describes. I found that in one other position, which I think the reader did not speak of, and that is the standing posture, the weight of the uterus itself plus that of the abdominal contents will sometimes by sagging down allow the fundus to go by the promontory. I am very much opposed to using ether if the uterus can be replaced without it, and I have had pretty good success in a certain number of cases in replacing without ether. I have also found, after partially replacing the uterus, and putting in an elastic pessary, that the uterus rectified its position. I am glad to hear him say that packing does no harm; that it has no tendency to cause abortion, for that is my experience. I think it is very wise to use packing and pessaries in suitable cases.

DR. STORER: In one case I tried replacing the uterus in the standing position, but probably from lack of experience with the method I was not able to do so, but subsequently replaced it in the knee-chest position with ease.

THE HELMHOLTZ MEDAL OF THE ACADEMY OF SCIENCES OF BERLIN. — We learn from the *Philadelphia Medical Journal* that this medal has been awarded to Prof. Rudolf Virchow. The medal, instituted in 1892, with a capital of $12,000, in honor of the Seventieth Anniversary of the birth of Helmholtz, weighs 620 grammes, and is awarded every two years. The recipients of it have been Helmholtz himself, du Bois-Reymond, Weierstrass, Lord Kelvin (Sir William Thomson) and Professor Virchow.

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[2] See also on this subject, pp. 33, 34, July 14, 1898, of this Journal, Some Modern Methods of the Treatment of Phthisis and its Symptoms.

[3] See page 228 of the Journal.

THE BOSTON

Medical and Surgical Journal.

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SURGERY IN THE LATE WAR.

THE results of the Spanish-American War fully vindicate the action of the War Department when several years ago, at the instance of the surgeon-general, instruction in first aid and antisepsis was ordered to be given for one hour per week to all enlisted men of the army. The instruction given was simple and was principally devoted to emphasizing the importance of cleanliness, the application of bandages and dressings and the first treatment of fractures. The innovation met with little enthusiasm on the part of line officers, who failed to see the importance of a subject so far removed from technical military matters, but the terms of the order were nevertheless necessarily complied with. At Santiago the dense jungle prevented the ready location of the wounded by the surgeons and by the men of the hospital corps, and in a large number of instances the first dressings were applied by the sufferers themselves or by their soldier comrades, using the contents of the "first-aid packet" previously supplied to each soldier. This dressing was in many instances never removed, subsequent examination by the surgeon showing no necessity for such action, until the wound had solidly healed, usually about the tenth day. As a result of the training in antiseptic "first aid," combined with the relatively humane character of the Mauser wound, suppuration did not occur in more than two to three per cent. of all cases of wounds. This has its bearing on military surgery other than the primary operations immediately following an action, especially when we remember that many serious wounds, such as perforation of the lungs, intestines, liver and large joints, recovered without operation or even serious disturbance, under simple sterile dressings. It can therefore be more readily understood why, when the total number of bullet and shell wounds in the late war amounted to 1,581, the total number of major operations, including those necessitated by casualty and accident among the 200,000 troops which never engaged in hostilities, May to December, 1898, included only the following:

Amputations		31
Hip-joint	3	
Thigh	[illegible]	
Leg	10	
Foot	2	
Arm	12	
Arm (reamputation)	1	
Forearm	1	
Laparotomy for bullet wounds		4
Laparotomy, cause not stated		3
Trephining		7
Resection of bones		3
Exsection, middle third humerus		1
Ligation of artery (femoral)		1
Removal of bullet, wall of bladder		1
Total		51

These figures mean that of the total number of soldiers not actually killed outright, only 3.4 per cent. were later subjected to the serious or mutilating operations up to this time considered as imperatively demanded by military surgery; and the fact that the records show that secondary operation was rarely needed subsequently is proof of the wisdom of the conservative attitude assumed by army surgeons. Perforating wounds of the intestine, while always necessitating laparotomy in civil life, are not always cause for operative interference by the military surgeon. The long delay usually necessary before the patient can be brought to the operating-table, with a probable general peritoneal infection resulting from the delay and the transportation back to the hospital, the limited time at the disposal of the overworked surgeons for each case, are all factors in urging conservatism. It can never be justifiable for the surgeon — surrounded by wounded men capable of quickly responding to the surgical attention urgently needed by them — to waste the valuable time and strength of himself and his several assistants in laboriously stitching up the gut of some profoundly depressed patient who has most probably already suffered a general peritoneal infection, and whose case offers but slight chance of success.

In the Spanish War wounds of the intestine were to be classed among the immediately fatal injuries. Few with such wounds ever reached the hospitals. The four such cases which were operated on died of peritonitis; of the cases of perforating wound of the abdomen put aside to pass away in peace without operation a considerable proportion recovered.

Certainly the Spanish-American War is not without its lessons to the surgeon as well as to the sanitarian.

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GENERALIZED SCLERODERMA.[1]

LEREDDE and Thomas remark upon the obscurity that exists with regard to the pathogenesis of scleroderma, and report the following case, which they have observed and studied at the Saint Louis Hospital.

The patient was a man of forty, whose family history revealed nothing of importance. He had had gonorrhea and syphilis. The scleroderma had begun at the age of thirty-two, appearing first as a plaque over the left iliac crest, extending from there over almost the whole surface of the body. The lesions were symmetrical, and of about the same appearance everywhere, consisting of oval plaques, about the size of a five-franc piece, white, thickened, hard and circumscribed. In a few prominent places there was some excoriation and ulceration of the skin. In spite of treatment by massage, ointments, and the iodide and bromide of potash internally, new plaques continued to appear and to coalesce with the old ones, until the entire skin was uniformly affected. Numerous ulcerations appeared and there was great pruritus. Emaciation and death soon followed.

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[1] Archives de Médecine Expérimentale et d'Anat. Pathol., Sept., 1898.

At the autopsy the only macroscopical lesions, apart from those of the skin, were found in the arteries: the aorta was excessively atheromatous, and the arteries of the limbs were absolutely calcified. In the skin the microscopic appearances were a thinning of the prickle layer by a diminution in the normal number of epithelial layers, and also by their compression. The papillæ were almost everywhere obliterated. The corium just beneath the epidermis was occupied by a sclerous layer with fibres running perpendicularly to the surface of the skin, and containing very few vessels. The deeper layers of the corium were excessively thickened, and the vessels of this and of the subcutaneous structures showed a thickening of the intima of the arteries and of the walls of the veins. The tongue, although no changes were visible to the naked eye, showed on microscopic examination much the same appearances as the skin. The histological appearances of the large arteries of the body were those of a chronic arteritis. A careful examination was made of the nerves but nothing abnormal was found.

Most of the writers who have occupied themselves with the pathology of scleroderma consider that it has its origin in the nervous system, that the alterations in the nerves are the cause of the vascular lesions and that the vascular changes determine those of the skin. This, however, has not been demonstrated. Méry is the only writer who places the most weight on the arteritis, which he considers as infectious, and he does not lay stress upon the nerve alterations, at least in generalized scleroderma, which he separates from scleroderma in plaques and bands. Of recent years, scleroderma has been thought to be somewhat related to exophthalmic goître, and to myxedema, and an explanation of the disease has been sought for in a lesion of the thyroid gland. Brissaud regards the thyroid alterations as dependent on a functional change in the sympathetic nerve, especially of the third cervical ganglion. An argument that has been advanced in favor of the nerve theory is that many cases are on record where a scleroderma in band form followed the course of nerve trunks; but it is to be remembered that the principal vessels have a good deal the same distribution, and that the nervous system probably determines the situation of a good many skin affections that are in no sense caused by a nerve lesion. The co-existence of hemiatropia with scleroderma has also served as an argument for the nervous theory. Other nervous symptoms in scleroderma are muscular atrophy, increase in the electrical resistance, and rebellious neuralgia. These, however, are common to many other affections and are not sufficient to stamp it. In fact only anatomical proofs can confirm the nerve theory of this disease, but as yet no changes in the nerve trunks or branches have been detected.

If the nervous origin of scleroderma is doubted, we have left the hypothesis that it may be caused by a toxin, and the only value of mentioning this is to provoke further research on the subject. It is perfectly conceivable that a toxin acting on the connective tissue could produce all the lesions of scleroderma.

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HISTORY REPEATS ITSELF.

UNDER a blundering fear of Butlerism, the Legislature of 1879 consolidated the Boards of Charities and Correction with the State Board of Health, and, after a turbulent and unsatisfactory history of turmoil and public scandal, this combination was again resolved into its constituent elements in 1886, a process which appears to have been still further repeated in the recent subdivision of a Board of Insanity, an offshoot from the Board of Lunacy and Charity. That the administration of these boards, especially that of the State Board of Health, has been conducted in a more satisfactory manner since the subdivision does not admit of a doubt.

The Local Government Board of England, a board combining duties of a varied character, has recently laid itself open to public criticism, as appears in the following editorial from the *Sanitary Record* of February 17, 1899 (London), having reference to a recent parliamentary debate:

> One other point was prominently brought out in the course of the debate, namely, the utter inadequacy of the Local Government Board to grasp the pressing health problems of the day. The establishment of county, district and parish councils has vastly multiplied the duties of the Board, and the time is quite ripe for a thorough reorganization. The poor-law and health departments should be separated, the latter being recognized as of the highest national importance, with a minister of public health at its head, and the office to be one of cabinet rank. We are convinced there can be no true progress until this reform is carried out, and the sooner it is done the better for the nation. Even if things are to remain as they are, a change of president would accomplish something. Whatever Mr. Chaplin may know about agriculture or horse-breeding, it is evident that he is out of his element at the Local Government Board, for when a matter affecting the very existence of a large section of the community is brought before his notice, he votes it a bore, and declines to consider it, because of a slight enervating influence in the atmosphere. Such flippancy is unworthy the head of a great public department.

DR. ALLAN MCLANE HAMILTON HONORED. — Dr. Allan McLane Hamilton, of New York, has been elected a Fellow of the Royal Society of Edinburgh.

MEDICAL NOTES.

Illegitimate Births. — It is reported that in San Juan, Porto Rico, the births for one month were 151, of which 121 were illegitimate.

Venereal Disease in Sagua La Grande. — A report from a Cuban physician, resident at that point, states that over forty per cent. of the male population is affected with venereal disease.

An International Congress Relative to Syphilis. — An International Conference for the Prophylaxis of Syphilis and Venereal Diseases will be held in Brussels some time in the first half of September, 1899.

A New Editor for the "Journal of the American Medical Association." — Dr. George H. Simmons, formerly editor of the *Western Medical Review*, of Lincoln, Neb., has been elected editor of the *Journal of the American Medical Association*.

Rental of Graves. — The common custom in Porto Rico of renting a plot of ground in the cemetery for a term of years, at the end of which time the remains, which may have been interred, are exhumed, thrown promiscuously in a heap in a corner of the cemetery, and the burial plot again hired out, has been forbidden by General Henry, under severe penalties, as a menace to the general health.

Mortality in Cuba. — As shedding a side light on the conditions prevailing in Cuba during 1898, it may be interesting to note that in Sagua La Grande, an interior town, reported as having 22,256 inhabitants in 1896, the official records show 2,325 deaths during the year, partly distributed as follows: Dysentery, 423; enteritis, 319; paludism, 242; small-pox, 190; tuberculosis, 132; starvation, 14; tetanus, 6; beri-beri, 3; leprosy, 1.

Meeting of the French Society of Electrotherapeutics. — At a meeting held February 16, 1899, M. Grand reported a case of slow pulse, in which, by repeated galvanization of the pneumogastric nerve, associated with franklinization of the head, he had succeeded in increasing the heart-beat to a normal rate, and also in removing a number of associated symptoms. The patient had remained well four years.

Small-Pox in Rural Cuba under Spanish Rule. — Quarantine, when practised, included only the patient and lazaretto, in which institution only the poorer classes were treated, as the law did not permit the authorities to remove the rich man from his house. Disinfection was rarely practised, and, if attempted, only incompletely carried out. Nurses in charge of small-pox cases were permitted to leave the lazaretto and visit their families and friends without restraint.

General Orders No. 7, Department of Porto Rico, January 27, 1899. — These orders prescribe that all the inhabitants of that island must be protected against small-pox. Every resident who has not had that disease must be vaccinated, and hereafter all infants must be vaccinated before reaching the age of six months. Five medical officers are designated as directors of vaccination in various districts, and all medical officers serving at posts are designated as inspectors of vaccination, the care of the sick not to be neglected for this special duty. All other officers are to render any assistance they may be called upon for in facilitating the work of vaccinating the people, and any neglect of the civil authorities in carrying out the order is to be promptly reported.

The Army Hospital Ship "Relief." — This ship has been unable to enter dry dock for necessary repairs on account of the ice formation, due to the late cold weather, and it is not anticipated that she will be in readiness for her long trip to Manila until about March 9th. She carries 182 hospital-corps men, 14 surgeons, and a large quantity of medical stores and supplies, and will, undoubtedly, prove of great assistance in the care of the sick and wounded in the Philippines.

Effect of Weyler Reconcentration Policy. — It is reported of the little town of Isabella, the port of Sagua, on the north coast of Cuba, that during the seven years 1890–1896, inclusive, the total deaths were 281, while in the two years of reconcentration, 1897–98, 408 died, the deaths increasing from 39 in 1895 and 47 in 1896 to 194 in 1897 and 214 in 1898. This increase of mortality was due in great part to the small-pox and yellow fever, which made its appearance soon after the policy of reconcentration was enforced, the town previously having been free from these infections.

The Medical Corps of the Army and Legislation. — The compromise bill for the continuance of the regular army at its war strength of 62,000 for a period of two years has made no provision for any increase in medical officers, although the surgeon-general, in his last annual report, called attention to its necessity for the proper performance of the work of his department, placing his working minimum at an increase of two colonels, six lieutenant-colonels, thirty majors and fifty assistant surgeons, and has also personally called the attention of the military committees to the needs. While Congress, in the face of recent experience, has again refused to provide a sufficient personnel, the medical department will probably in the future, as in the past, be held responsible for its own shortcomings as well as those of the quartermaster's department.

The Regulation of Massage in Hungary. — The Hungarian Minister of the Interior has lately, according to the *Philadelphia Medical Journal*, issued an order comprising essentially the following: (1) Patients may be treated by masseurs, who are not physicians, only upon the order of a physician, and under the direction and responsibility of a physician; (2) massage of diseased abdominal and sexual organs, and of the eye, may, under no circumstances, be practised by others than physicians. Infraction of this order is punishable by a fine of $40 and fifteen days' imprisonment. We may add that it is unfortunate that we do not have similar legislation in the United States. It would do much to elevate the practice of massage, and decrease the number of ignorant and unscrupulous practitioners of that art.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, March 8, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 39, scarlet fever 20, measles 198, typhoid fever 1.

Opening of the Massachusetts Eye and Ear Infirmary. — The formal opening of the new hospital building of the Massachusetts Charitable Eye and Ear Infirmary will take place Thursday, March 9th.

Report of the Boston Floating Hospital. — We have received the report for 1898 of this most worthy charity. It shows a large amount of faithful work done. The patients were in general divided into two classes, so-called day patients and permanent patients. Among the day patients a very satisfactory improvement was observed, with no deaths, while, owing to the fact that the sickest children were preferred as permanent patients, the mortality was high, a circumstance due also in a measure to the unusual severity of last summer's epidemic. Seven hundred and six day patients were received, of whom 271 were discharged well, 397 improved, 38 not improved. Of the permanent patients, among 99 treated, 27 were discharged well, 19 improved, 4 not improved, 10 against advice, and 39 died. It should be said that of these last, 18 were moribund on entrance.

Resignation of Dr. Page. — It is reported that Dr. F. W. Page, recently appointed superintendent of the State Hospital for Insane, Waterbury, Vt., has resigned. Dr. Marcello Hutchinson, now superintendent of the Massachusetts Dipsomaniac Hospital, has been selected to fill the vacancy.

The Rhode Island Medical Society. — At a quarterly meeting of the Rhode Island Medical Society, held in Providence, March 2d, the following officers were elected for the year 1899–1900: President, George D. Hersey, M.D., of Providence; First Vice-President, George F. Keene, M.D., of Howard; Second Vice-President, William R. White, M.D., of Providence; Treasurer, F. T. Rogers, M.D., of Providence; Recording Secretary, F. L. Day, M.D., of Providence; Corresponding Secretary, Herbert Terry, M.D., of Providence.

NEW YORK.

Bequests to Hospitals. — By the will of Edward H. R. Lyman, of Brooklyn, who died in January, leaving an estate of nearly two million dollars, a large amount is bequeathed to various charities. Among the institutions benefited are the following: Brooklyn Hospital, $2,500; Training School for Nurses (Brooklyn), $2,500; Eye and Ear Hospital (Brooklyn); Seaside Home of the Children's Aid Society, $2,500; Brooklyn City Dispensary, $1,000.

Cooks for the Militia. — Dr. Nelson J. Henry, of New York, who is assistant surgeon-general of the State and has had a large experience in militia service, and who is now a member of the Legislature, has introduced in the Assembly a bill providing that the governor may authorize the employment of cooks by troops on duty under his orders, or called out in aid of the civil authority, when such troops do not receive cooked rations, and fixing their pay at the same rate as that of corporals. The governor may also authorize the employment of cooks for the Naval Militia when on active duty.

Death of Dr. Hayden Nichols. — Dr. Hayden Nichols, of Brooklyn, died on March 4th of acute gastritis, supervening upon bronchitis and other disorders. He was a native of Connecticut and sixty-two years of age. He was a graduate of the College of Physicians and Surgeons, New York, and had practised for many years in Brooklyn, but about two years ago retired from active practice on account of ill health.

Typhoid and the Passaic River. — An outbreak of typhoid fever has occurred at Paterson, N. J., fifty-two cases having been reported between February 27th and March 3d. At a meeting of the City Board of Health, held on the latter date, Dr. Lord, health inspector, stated that while he was not yet prepared to make an official report as to the source of the trouble, there could be no doubt that this was to be found in the pollution of the Passaic River, from which Paterson derives its water supply. The Board agreed with Dr. Agnew, who expressed the opinion that the disease arose from the dredging of the Passaic at Little Falls by the East Jersey Water Company, which is building a large reservoir there, and passed a resolution ordering the company to stop work. In the meanwhile the citizens were urged to boil all water used for domestic purposes.

Death at the Age of One Hundred and Two. — Mrs. Maria Roof Van Evera died at the age of one hundred and two years on February 28th at Canajoharie, N. Y., where she was born in 1797, and where she had spent nearly her whole life.

A Favorite Method of Suicide. — A colored patient, twenty-eight years old, on March 4th committed suicide by leaping, while presumably delirious, from a third-story window of the Home for Consumptives on Kingston Avenue, Brooklyn, where he was undergoing treatment. A curious circumstance in connection with the case is that this is the twelfth suicide among the patients of this institution within the past six years, and it is furthermore stated that they were all committed in the same manner.

Correspondence.

A SIMPLE PROCEDURE WHICH SHOULD FORM PART OF A SURGEON'S EDUCATION.

250 Marlborough St., Boston,
February 27, 1899.

We have had Rontgen light for three years, and even I, whose motives in experimenting with it have been little above a desire to distract my mind, have learned enough to know that many eminent men, whose duty it has been to master and employ the method, have neglected it.

Also, when a surgeon is shown a Rontgen image of bones he usually says, "I can't tell anything from that: it is n't clear enough." The time has therefore come for some one who is indifferent to censure to speak the truth, saying the present attitude is one of culpable negligence and ignorance.

The remedy is simple, consisting of a darkened room, a Rontgen light, a skeleton, a piece of greased ground glass, a luminescent screen, and eyes willing to see.

Place the skeleton in the same relation to the Röntgen light that the patient is to occupy, with the ground glass in a supporting frame in the position the sensitive plate or luminescent screen is to be held. Then examine the bones with the eye through the ground glass, comparing them with their shadows on its surface and the Röntgen images on the luminescent screen held against the supporting frame.

The event which has overcome my inertia sufficiently to cause me to write this note is the experience of a friend who has been treated for a broken arm where no break existed, the real fracture in another place having been overlooked. This condition was afterward discovered by Rontgen light, too late to admit of proper treatment for the real injury, too late to save her the prolonged strain of the unnecessary treatment. Friends are not so common that one can with patience see them suffer unnecessarily.

William Rollins, M.D.

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SENSATIONALISM IN MEDICINE AND MURPHY'S TREATMENT OF INJECTING OXYGEN.

Milwaukee, Wis., March 3, 1899.

Mr. Editor:— I had to have some title to say what ought to be said over and over again. I have not the time or present inclination to mince matters and must speak pointedly and briefly.

The average doctor is too good-natured, and the rapid progress made in many lines of late years has made him willing to allow without protest many experiments along illogical lines. There is the point — illogical lines. If a proposed method can be shown at the start to offend the very basic elements of logic, then in the name of humanity fight it at that very start. If a coin be spurious stamp it "counterfeit" at the mint and prevent its initial circulation. Any such contest is the very antithesis of personal. The proposed is the object of attack, never the proposer.

Conceded that Dr. Murphy's claims are modest and all that. They are. He mentions six dangers belonging to the operation itself. But how about the dangers after the operation, all as clearly able to be shown up then as now? To mention a few: the crippled lungs and the probable death of any patient if the lung "in commission" be attacked while the rest of the lung space is out of commission; the danger, unknown, of how long the compressed lung is to remain unavailable. Months are mentioned as possible. I have had a case under observation several weeks which shows practically no absorption. It is doing badly.

Another danger is the retention of pus by the unequal compression, as the area of compression always follows the lines of least resistance, and various pockets of pus may be formed; another danger is the inability to resort to other lines of treatment so effectually while this one is operative.

Another danger — let each one read between the lines here and make what comments he individually chooses: I have received by this morning's (March 3, 1899) mail the advertisement by a commercial firm of an improved gas-injecting apparatus with Dr. Murphy's signed indorsement. This indorsement is dated August 22, 1898. This leads me to ask this question: Has the medical profession reached the point of indorsing wholesale experiments by everybody upon human beings of dangerous methods of treatment?

Another most important source of danger to humanity, totally dropping the oxygen injection now, in the too early exploitation of crude, ill-digested, illogical methods is the newspaper advertisement with its misleading and sensational head lines.

Again, and with shame and sorrow be it said, a final danger is the taking up by the dishonest, as well as the rattled of our noble calling, of every fad that comes along. Many such care for naught but to put money in their purses and to keep their names before the public — men often of great attainments, but whose real god is self. We know them; respect their merits. As to their vanities, when dangerous, let the motto of us of the rank and file be, "Up, guards, and at 'em!"

A. B. Farnham, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, February 25, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping-cough.	Diphtheria and croup
New York . .	3,438,899	1406	385	6.93	22.64	.98	.70	2.31
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	255	72	5.85	24.57	.39	1.17	2.73
Baltimore . .	506,389	250	75	6.40	13 60	.80	—	3.20
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	126	34	11.06	14.22	6.32	.79	—
Washington .	277,000	111	27	9.00	—	—	—	5.40
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	63	19	1.57	39.25	—	—	—
Nashville . .	87,754	41	4	4.88	14.64	2.44	—	—
Charleston . .	65,165	32	12	—	25.00	—	—	—
Worcester . .	108,240	41	14	7.32	19.52	2 41	—	2.44
Fall River . .	95,919	58	22	12.04	12.04	10.32	1.72	—
Cambridge . .	89.724	39	15	15.36	17.92	2.56	7.68	5.12
Lowell . . .	88,641	46	17	6 51	21.70	—	—	4.34
Lynn	66.703	22	4	—	20.75	—	—	—
New Bedford .	66,340	31	10	3.23	22.61	—	—	3.23
Somerville . .	61.101	16	5	6.25	12.50	—	—	—
Lawrence . .	57,263	29	15	6.90	31.05	—	3.45	—
Springfield . .	56,501	24	6	16.66	8.33	4 16	—	4.16
Holyoke . . .	43,424	14	7	7.14	—	—	7.14	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem. . . .	36,883	12	3	—	25.00	—	—	—
Malden . . .	34,613	4	2	—	—	—	—	—
Chelsea . . .	33,468	10	4	20.00	—	—	—	—
Haverhill . .	32,022	15	8	6.66	20.00	—	—	—
Gloucester . .	30,589	7	3	14.28	—	—	—	—
Newton . . .	29,716	10	—	—	—	—	—	—
Fitchburg . .	29,438	12	4	—	8.33	—	—	—
Taunton. . .	28,167	17	2	5.88	23.52	—	—	—
Everett . . .	25,338	5	2	—	60.00	—	—	—
Quincy . . .	23,549	8	4	—	12.50	—	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	8	5	—	12.50	—	—	—
North Adams .	20,971	9	—	—	22.22	—	—	—
Chicopee . .	17,842	8	—	—	12.50	—	—	—
Medford . . .	16,511	3	3	33.33	16.66	—	—	33 33
Newburyport .	14,915	4	—	—	50 00	—	—	—
Melrose . . .	14,032	4	—	25.00	—	—	—	—

Deaths reported 2,756; under five years of age 787; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 191, acute lung diseases 563, consumption 340, diphtheria and croup 62, diarrheal diseases 35, scarlet fever 23, whooping-cough 20, typhoid fever 18, cerebro-spinal meningitis 18, erysipelas 9, measles 6.

From scarlet fever New York 18, Baltimore 3, Providence and Melrose 1 each. From typhoid fever New York 7, Pittsburg 5, Boston, Baltimore, Washington, Lawrence, Springfield and Haverhill 1 each. From cerebro-spinal meningitis New York 9, Boston 2, Baltimore, Washington, Nashville, Worcester, Somerville, Chelsea and Gloucester 1 each. From erysipelas New York 5, Boston, Baltimore, Chelsea and Taunton 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending February 18th, the death-rate was 19.5. Deaths reported 4,275; acute diseases of the respiratory organs (London) 481, whooping-cough 92, diphtheria 88, measles 64, fever 41, diarrhea 32, scarlet fever 23.

The death-rates ranged from 10.5 in Leicester to 28.8 in Preston; Birmingham 17.8, Bradford 17.9, Gateshead 21.5, Leeds 18.3, Liverpool 27.9, London 19.3, Manchester 23.4, Newcastle-on-Tyne 21.4, Nottingham 17.2, Portsmouth 14.5, Sheffield 20.5, West Ham 16.3.

METEOROLOGICAL RECORD

For the week ending February 25th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...19	29.61	40	45	34	83	55	69	W.	W.	13	12	C.	F.	.34
M..20	29.63	44	54	34	62	55	58	S.W.	S.W.	12	9	O.	C.	
T...21	29.75	42	51	33	64	81	72	S.W.	E.	5	8	F.	O.	
W..22	29.54	42	50	33	95	78	86	S.	S.W.	8	11	O.	O.	.01
T...23	29.65	40	47	32	72	63	68	W.	W.	12	16	C.	C.	
F...24	30.07	32	37	27	43	49	46	W.	W.	14	14	C.	C.	
S...25	30.44	29	38	20	36	51	44	N.W.	N.W.	12	10	C.	C.	
☞	29.81		46	30			63							.35

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING MARCH 4, 1899.

W. F. Arnold, passed assistant surgeon, when discharged from further treatment at hospital, Norfolk, Va., ordered home and granted sick leave for three months.

E. M. Shipp, passed assistant surgeon, detached from the "Lancaster" and ordered to the Naval Hospital, Norfolk, Va.

J. A. Guthrie, passed assistant surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to the "Franklin" immediately.

G. L. Angeny, assistant surgeon, detached from the Naval Hospital, Chelsea, Mass., and ordered to the "Lancaster."

J. H. Payne, Jr., assistant surgeon, detached from the "Franklin" and ordered to the Naval Hospital, Chelsea, Mass.

John W. Ross, surgeon, retired, is assigned to Military Hospital No. 1, Havana, Cuba, and will report to the commanding officer of that hospital for duty.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING MARCH 2, 1899.

White, J. H., surgeon. To proceed to Elizabeth, N. J., for special temporary duty. February 24, 1899. To report at Washington, D. C., for special temporary duty. February 28, 1899.

Carrington, P. M., surgeon. To proceed to Baltimore, Md., as inspector of unserviceable property. March 2, 1899.

Pettus, W. J., passed assistant surgeon. To proceed to Cape Charles City on special temporary duty. February 25, 1899. To proceed to Burlington, N. C., for special temporary duty. February 28, 1899.

Cobb, J. O., passed assistant surgeon. To report at Washington, D. C., for special temporary duty. February 25, 1899.

Guiteras, G. M., passed assistant surgeon. To proceed to Matanzas, Cuba, for duty as quarantine officer. February 25, 1899.

McAdam, W. R., assistant surgeon. To proceed to Key West, Fla., and assume temporary charge of Service. February 25, 1899.

Brown, F. L., hospital steward. To proceed to Norfolk, Va., and report to commanding officer for duty. February 25, 1899.

Holsendorf, B. E., hospital steward. Granted leave of absence for two days. February 24, 1899. Upon being relieved by Hospital Steward F. L. Brown, to proceed to San Juan, Porto Rico, and report to Surgeon A. H. Glennan for duty. February 25, 1899.

BOARD CONVENED.

Board convened to meet at the U. S. Marine Hospital, San Francisco, Cal., at 10 o'clock A. M., May 2, 1899, for the examination of candidates for appointment as assistant surgeon in the Service. Detail for the board: Surgeon J. M. Gassaway, Chairman; Surgeon S. D. Brooks; Passed Assistant Surgeon C. H. Gardner, Recorder.

TREASURY DEPARTMENT, OFFICE SUPERVISING SURGEON-GENERAL, MARINE-HOSPITAL SERVICE.

Washington, D. C., February 28, 1899.

A board of officers will be convened at San Francisco, Cal., Tuesday, May 2, 1899, for the purpose of examining candidates for admission to the grade of assistant surgeon in the U. S. Marine-Hospital Service. Applications for this examination must be received on or before April 22d.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college, and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examination: (1) physical; (2) written; (3) oral; (4) clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography by the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature and natural sciences.

The clinical examination is conducted at a hospital, and when practicable candidates are required to perform surgical operations on the cadaver.

Successful candidates will be numbered according to their attainments on examination and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large marine hospitals, as at Boston, New York, New Orleans, Chicago or San Francisco.

After five years' service assistant surgeons are entitled to examinations for promotions to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority, and, after due examination, as vacancies occur in that grade. Assistant surgeons receive sixteen hundred dollars, passed assistant surgeons two thousand dollars, and surgeons twenty-five hundred dollars per year. When quarters are not provided, commutation at the rate of thirty, forty or fifty dollars a month, according to grade, is allowed.

All grades above that of assistant surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service up to forty per centum after twenty years' service.

The tenure of office is permanent. Officers travelling under orders are allowed actual expenses. For further information or for invitation to appear before the Board of Examiners, address

Supervising Surgeon-General,
U. S. Marine-Hospital Service, Washington, D. C.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, March 13, 1899, at 8 o'clock.

Papers: Dr. J. B. Blake, "The Administration of Ether at the Boston City Hospital."

Dr. Arthur C. Jelly, "The Work of the Department of Mental Diseases at the Boston Dispensary."

Dr. John H. McCollom, "Scarlatina."

Arthur K. Stone, M.D., *Secretary*, 657 Boylston St.

Suffolk District Medical Society. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, Wednesday, March 15, 1899, at 8 P. M.

At 8 o'clock. Short communication: Dr. E. W. Taylor, "Syphilis or Dementia Paralytica; A Case for Diagnosis."

At 8.15 o'clock. Dr. E. O. Otis, paper entitled: "The Struggle against Tuberculosis." Discussion by Drs. F. I. Knight, V. Y. Bowditch and Harold Williams.

J. Bergen Ogden, M.D., *Secretary*,
Harvard Medical School, Boston.

RECENT DEATH.

Franklin Whiting Brigham, M.D., M.M.S.S., died in Shrewsbury, February 27, 1899, aged fifty-seven years.

Lecture.

OSTITIS TYPHOSA.[1]

BY CHARLES GREENE CUMSTON, M.D., BOSTON,
Assistant Professor of Surgical Pathology, Tufts College Medical School.

SOME of you will recall to mind the case of a small boy that I operated on before you for an abscess of the bone following typhoid fever. This complication of typhoid is so important for you to be familiar with that it is my intention to devote this lecture to this subject. The history of the case is briefly as follows:

William F., age thirteen, had always been in fairly good health. When five years of age he had scarlet fever, from which he recovered without any complications. In September, 1898, he developed typhoid fever, which kept him in bed until the latter part of October. He then got up, and remained up and about, feeling in pretty good health, until November 10th, when he began to complain of a heavy feeling in the right leg.

In about five days after this there was some pain in the limb, and the patient then applied for treatment.

Examination of the chest was negative. The liver and spleen were normal in size and not tender when palpated. Analysis of the urine was negative. Blood count = 3,500,000; hemoglobin, 87 per cent.; no leucocytosis. Temperature 38.3° C.; pulse 96.

On the right leg, over the internal aspect of the tibia, and at about the middle of the bone, the skin was somewhat edematous and there was considerable pain on pressure, the entire area of pain being about five or six centimetres in extent.

After watching the patient for several days an operation was decided upon, as the pain was decidedly on the increase. An incision about eight centimetres long was made in the integuments, over the site of the pain, down to the bone. The periosteum, which was hyperemic and thickened, was next incised and stripped off the bone.

The bone was slightly swollen at this point, and was rather deep pink in color. Next, the bone was opened down to the medullary canal, which was found to contain a dark-colored, semi-liquid marrow. The cavity was then thoroughly curetted. A subgallate of bismuth gauze wick was packed into the cavity, the periosteum was sutured with catgut excepting for a space which was left for the passage of the wick, and the skin incision was closed with the bronze and aluminium wire.

The drain and skin sutures were removed on the fifth day, and perfect union had taken place. The patient was discharged cured about ten days later.

Cultures of the liquid taken from the cavity only gave an abundant growth of the staphylococcus aureus.

As is well known, the bacteria of the various acute infectious diseases possess the general peculiarity that they may give rise to affections in various organs of the economy quite independent of the specific affection which confines itself to certain viscera. During the course of scarlet fever, influenza, pneumonia, measles, diphtheria or gonorrhea secondary troubles are not infrequently met with. These secondary affections are closely related to the primary disease, and they are considered as due to the action of one and the same virus, but, of course, open to the possibility that under certain circumstances there may also be another added factor giving rise to their existence.

Generally speaking, however, the secondary affection should be put under the head of a real complication, and the relationship between the primary infectious disease and the complications was only discovered relatively within a few years. It was usually admitted that the organism became weakened by the infectious disease and was thus a prey to other septic processes, and so the infectious affections occurring in the bones after acute maladies, such as typhoid, etc., were not studied particularly, and no attention was given to them.

It is only during the last fifteen years, since we have become more familiar with the germs of infections and their manner of action, that their pathologic manifestations in the bones have been studied. Of all the infectious diseases typhoid fever certainly contributes the largest number of inflammatory lesions in the bones, and previously to 1880 little mention can be found of them in medical literature. The fact that diseases of the bone following typhoid were not attributed to their true etiology is because the secondary manifestation occurred some time after the acute disease had subsided, and the patient had been discharged as cured. Then the bone lesion developed, sometimes months afterwards, and the surgeon diagnosticated an osteomyelitis, or a syphilitic process in the bone, because all of these affections may closely simulate one another.

Witzel emitted the opinion that the treatment of typhoid by baths, which has of recent years enjoyed a certain amount of favor from the medical profession, was often the cause of traumatism, which might result in abscess formation; but although this may possibly have some bearing on the production of an ostitis following typhoid fever, still the majority of recorded cases show that traumatism did not occur, and consequently this theory cannot be accepted as explaining the etiology of many cases. Without any doubt, a patient is exposed at any time to traumatism, but the frequency of this sequel of typhoid would go to show that a traumatism is not necessary for its production.

Wilson is of the opinion that exhibition of antipyrin or antifebrin may set up an anilin anemia or cachexia, which is produced by the transformation of hemoglobin into methemoglobin, and the viscera being placed in a low vital condition from the fever, may explain the etiology of the process in the bones; all the pyrexias produce a lowered state of vitality in the various organs and tissues, and especially is this true of the bone marrow, as has been demonstrated by Ponfick, and changes take place in its structure and composition which makes it a *locus minoris resistentiæ.*

The first studies on ostitis typhosa were made in France, and, later, in England. In 1835 Maisonneuve wrote a thesis on periostitis, and in 1854 an article on the subject from the pen of the famous Chassaignac appeared in the *Gazette médicale de Paris.* Murchison, in 1873, and Paget, in 1878, contributed to the study of this affection, but to Keen, of Philadelphia, is due the most complete study of the subject that had appeared, and which was published in the form of the Toner lectures in 1877.

When the attention of the profession had been called to this type of ostitis by the above writings a large number of cases began to be reported, chiefly in France. Mercier, Levesque, Gelez, Terrillon, Rondu, Hutinel and others recorded cases, but the etiology was still very uncertain. Turgis upheld that osteoperiostitis following typhoid fever was due to a localization of the virus, which, under the influence of a general or accidental cause, found a favorable soil for its development. Freund was the first to give a really good and complete description of this affection, and he entirely upheld the opinion that there was a direct relation between the typhoid bacillus and the bone lesion, although at that time he was unable to sustain this idea by any bacteriological proof.

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[1] A lecture delivered at Tufts College Medical School, January 24, 1899.

This demonstration was made by Ebermaier, who obtained pure cultures of Eberth's bacillus from the abscesses in the bones of various cases as well as from the blood taken from the tumefied periosteum. From these experiments the study and theory of post-typhoid bone affections were placed upon a firm basis.

The bone lesions following typhoid fever are due to an invasion of Eberth's bacillus, the organism taking on a pyogenic character. Much discussion has been brought up over this question. Baumgarten and E. Fraenkel, especially, deny the action of the bacillus of typhoid, and ascribe the bone lesions to a secondary pyogenic infection, and in support of their opinion, in cases where a pure culture of Eberth's bacillus has been obtained, they say that pyogenic cocci were first in the field, but afterwards became destroyed by the specific bacillus of typhoid.

It is perfectly certain that during the course of a typhoid fever an infection due to pyogenic bacteria can arise, especially when the human organism is in a state of receptivity and forms an excellent media for their proliferation and growth, but, generally speaking, this does not happen.

Baumgarten has said that a disease like typhoid, which so reduces the general resistance of the economy and attacks the vital organs, and disabling them in their physiological functions, renders the growth and invasion of pyogenic germs an easy matter. The intestine usually contains a number of pus-producing bacteria, even streptococci and staphylococci, and they can invade the body through the intestinal ulcerations with comparative ease.

The significance of a mixed infection is most prominent in cases where only pyogenic organisms are found in the pus of ostitis typosa, the typhoid bacillus having disappeared, but you will remember that when lecturing on the pathogenic bacteria I pointed out that Eberth's bacillus would take on pyogenic properties.

Dmochowsky and Janosky injected a mixture of typhoid bacillus and pyogenic cocci into animals, and in the abscesses produced both organisms were found associated, or, on the other hand, the typhoid bacillus had disappeared and only the pyogenic cocci remained. The lesser vitality of Eberth's bacillus accounts for this, and the cocci had simply won a victory, and in no instance could it be experimentally proven that the typhoid organism had outlived the other bacteria.

From these facts, these experimenters maintain, and with good reason, that pus in which the typhoid bacillus is alone present was produced by the presence alone of this organism.

Pyogenic cocci are often found along with Eberth's organism in many instances, and then it is somewhat difficult to decide which of the two was the etiological factor, but in all probability the latter prepared the ground for the second and was the first in the field. Just as the diplococcus of pneumonia produces a lobar pneumonia, resulting in abscess formation or a general infection, so can Eberth's bacillus set up localized inflammatory foci after it has produced ulcerations of the intestinal glands. That such is the case is too well known at the present time to call for further discussion.

Pure cultures of Eberth's bacillus have been obtained in bone infections, foci of suppuration in the muscles and skin; in acute endocarditis, sero-fibrinous pleuritis, circumscribed periostitis, cerebro-spinal meningitis, suppurating strumitis, and in abscesses of the spleen and mesentery glands; all this simply goes to show how varied may be the action of this organism on the human body.

Why the typhoidal bacillus more often produces an ostitis as a sequel of the fever may perhaps be explained from the fact that Quincke found the organism present in the bone marrow of typhoid patients, although there was no lesion present in the bone. Ebermaier very properly points out the similarity between bone marrow, the intestinal follicles and the mesenteric glands; and since the last two structures are invaded and rendered the seat of pathologic changes by the organism it is evident that the bone marrow may likewise be attacked. For that matter, Prasick has sufficiently proven that pathologic changes do take place in the bone marrow of typhoid patients.

The localization of the specific bacillus in the bone marrow is evidently greatly favored by the slow circulation which takes place. If, therefore, it be supposed that the specific bacillus is present in the bone marrow of patients afflicted with typhoid, the question arises why ostitis is not more frequently met with as a sequel of this disease. Whether traumatism, exposure to cold, or the great virulence of the bacillus is the cause for the production of ostitis is as yet an open question, but in scarlet fever we frequently meet with foci of suppuration in various organs, and although the irritating virus of this disease is constantly passing through the renal gland, still nephritis is far from being an ordinary complication in this affection.

The tibia is by all odds the bone most frequently attacked, but the ribs, femur, humerus, ulna, skull, clavicula, sternum, fibula, radius, scapula, pelvis and vertebræ may also be the seat of typhoid ostitis. In many instances several bones may be attacked. The bone lesions usually appear eight or ten weeks after recovery from the fever has taken place, but in some cases ostitis has developed during the first, second or third week of typhoid.

The final result of ostitis following typhoid is usually abscess formation, or it may be that a necrosis will occur. Young people are usually affected; old persons seem to escape this complication. From statistics, it would appear that males are more frequently attacked than females.

Every case of typhoid fever, no matter how mild it may be, may give rise to an ostitis. The affection will usually develop in the epiphysis of the long bones, and, as I have already said, the tibia is the bone most frequently attacked. The bones of the upper extremities and those of the skull are not so frequently the seat of this complication, but the ribs are most probably next in frequency after the tibia the site of predilection for this pathologic process. The bone lesions develop during the height of the fever, or, what is more frequent, during convalescence from the affection, or even at a later date, and several months have been known to pass before ostitis appeared.

The process generally develops suddenly without any previous symptoms which would call the patient's attention to any trouble in the bone. Occasionally the first thing that attracts attention is a feeling of fatigue in the affected limb, but the first real striking symptom is a deep-seated spontaneous pain in the affected bone. This pain is at first diffused, but later becomes localized to the spot where the lesion is developing. After a few hours or more a sharply-defined tumefaction appears, the skin covering it remaining quite normal in color. This tumefaction will be found on palpation to be closely adherent to the underlying bone and is very hard to the touch.

Occasionally, especially in the more acute cases, one or several bones are suddenly the seat of pain, and this is very rapidly followed by visible changes in the parts.

When the lesion is deeply seated in the bone tumefaction is naturally absent, but the patient complains of a feeling of weight in the diseased bone. Pain may take on a very high degree of acuteness and is often more accentuated at night, so that it becomes unbearable. After a few days the pain and feeling of tension decrease and soon disappear.

The functional disturbances in the limb attacked vary in intensity, but they are always present to some extent.

Ostitis typhosa will end in one of the three following ways, namely: (1) by absorption of the tumor; (2) the tumor becomes indolent and very tense, and may exist as such for several months and then finally disappear; (3) by the formation of pus or a necrosis. Abscess formation or necrosis is by far the most frequent. The majority of cases in which the bone lesion appears during or after convalescence take this course. Perhaps this fact may be explained by Buchner's theory, namely, that the bacteria present undergo an involution, or have died off, but their toxins being still present as a pyogenic matter, while at the time of their greatest development this pyogenic property was not prominent.

Even the slowly developing, indolent tumefactions may occasionally end in abscess formation, the latter taking on a very chronic evolution.

A spontaneous recovery very rarely takes place, and in most instances surgical measures are required. If the process goes on to necrosis we will then find lesions similar in every respect to those met with in acute osteomyelitis. Irregular cavities are found in the bone which are lined with granulation tissue, sequestræ, fistulæ and thickened periosteum; in other words, the same pathologic changes in no way distinguishable from those produced by a pyogenic inflammation from any other infectious cause.

Klemm believes that the pus in ostitis of typhoid is distinctly different in color and general make-up from that usually produced by the staphylococcus or streptococcus. The pus in this particular form of ostitis is either a dark or light reddish-yellow color; it is usually rather thin, and has a slight odor, and is, according to the above-mentioned authority, characteristic of Eberth's bacillus. It is poor in colloid matter, but contains a considerable amount of tissue *débris*. Klemm consequently believes that this exudate produced by the bacillus of typhoid should not be termed "pus," and he terms this liquid "a fluid metamorphosis of the pathologic products deposited in the bone." In a number of cases this definition is quite suitable, namely, where the regressive metamorphosis is a result of the necrotic action of the bacillus of typhoid. But in other instances the term "pus" is certainly most correctly applied.

The experiments of Dmochowsky and Janowsky have well proven that abscess formation in animals inoculated with Eberth's bacillus has the same properties as pus produced by the various other pyogenic organisms, and Parsons has come to the same conclusions in the case of man.

Microscopical examination of pus from ostitis typhosa does not show a material difference from that due to the streptococcus or staphylococcus, only in some samples of the former there are very few blood corpuscles.

There is one symptom of typhoid bone infections that must be mentioned, and that is fever. You would naturally suppose that an elevation of the temperature would be present in these cases, but such is not the case. Marked fever has only been mentioned by Fürbringer and Ebermaier, and Parsons remarks that "there is, as a rule, an entire absence of fever." This may apply to the cases under his own observation, but a rise in the mercury is to be expected at some period of the affection, usually at the time when pain is present, as was the case with our patient.

The fever takes a hectic type and its height is in direct proportion to the extent of the lesions. When the pain subsides the temperature gradually drops to the normal. A very sudden and high fever accompanied by chills is usually the sign of an acute osteomyelitis and bacteriological examination will reveal the presence of the staphylococcus aureus or the streptococcus, but never Eberth's bacillus.

Those cases having a very chronic evolution are usually apyretic, and are symptomatically very similar to tubercular abscess, and are usually due to a pure typhoid bacillus infection. The diagnosis is difficult, and can often only be made with certainty by a bacteriological examination.

The prognosis of ostitis typhosa is good, and as yet no fatal end directly due to this affection has been reported, so far as I know.

As to treatment, we may try cold applications, leeches, and rest in bed during the acute stage, but when abscess forms, or if there is a necrosis of the bone, a free incision must be made, and all diseased tissue removed by the curette, hammer and chisel.

Original Articles.

ABDOMINAL HYSTERECTOMY FOR CANCER OF THE CERVIX.

BY J. C. IRISH, M.D, LOWELL, MASS.

The relative advantages of abdominal and vaginal hysterectomy for diseases within the pelvis in general, and cancer of the uterus in particular, have already been so exhaustively discussed and argued that very little is left to be said upon that subject. Still I cannot refrain from saying a few words in regard to this question of choice of operation.

I believe that in all cases of cancer at the os the operation chosen should be abdominal hysterectomy.

Entirely apart from the relative difficulties of the two operations, and the fact that vaginal hysterectomy is an operation of accident, such as injury of the bladder, intestines, and notably of the ureters (the latter occurring so often that it has given rise to a new abdominal operation, namely, one for implanting an injured ureter in the bladder) — aside from all these reasons that can be deduced in favor of abdominal hysterectomy, there is still another, of far greater importance, that my own clinical experience with the abdominal operation has, in my mind, very firmly established, and that is the direction of extension of malignant disease from the os. In a series of twenty-five abdominal sections for cancer of the cervix I have found extension of infection in four cases out towards the pelvic wall, and a mass of infected cancerous tissue, probably glandular in its character, which was found not far from the internal iliac artery and very near the point where the uterine artery crosses the ureter. I have found this extension of disease on one side only, usually, and while in other cases, more advanced, there has been invasion of the structures under the broad ligaments above, still in these four cases there was no other extension of the disease. Furthermore, by any vaginal examination it was utterly impossible to locate or know of this extension. No such examination could possibly reveal its existence. These were cases that apparently had come for operation fairly early in the course of the disease. Besides, too, they would have been regarded as instances perfectly suitable for the vaginal operation, and had that been done the existence of this infection outside of the uterus would never have been known. The operation would have been completed without the least suspicion that the entire infected structures had not been removed, and if by any chance the diseased tissue outside of the uterus had been known to exist, in doing the vaginal operation it would have been utterly impossible to remove it; while by the abdominal route the complication was very readily recognized, and in every instance the diseased structures were removed without very great difficulty. That is, the abdominal operations in these four cases made a complete operation possible, instead of an incomplete one as would have been the case had vaginal hysterectomy been done.

Twenty-five cases, of course, is a small number to afford any statistical value as to the frequency with which such extension of disease occurs, but, on the other hand, I do not know that we have any reason to doubt that the same proportion I have found may still hold good in an indefinite number of cases, and if it be true that we have an extension to those glands at the base of the broad ligament in one case out of six in the early course of the disease, that seems to me a sufficient reason why the vaginal operation should be entirely discarded in the treatment of cancer of the cervix. In these four cases had vaginal hysterectomy been performed, it would have been very analogous to removing the breast and leaving infected glands in the axilla.

When abdominal hysterectomy is done for cancer of the cervix, there are some details of technique to which I wish to call your attention.

The vagina having been rendered as aseptic as possible in the preparation of the patient, as a preliminary step of the operation I amputate the neck of the uterus close to the vaginal attachment. This is done in all cases, whether the disease of the os is extensive or slight. Then, if the infection has extended along the mucous membrane above the amputation, the uterus is packed; if not, the packing of the cervical canal is unnecessary. Then a thick roll of gauze, to absorb and check any hemorrhage, is applied to the cut cervix and protrudes from the vulva. This is removed before the vagina is opened from above. This, you will note, is an entirely different procedure from the so-called combined vaginal and abdominal operation, for in the latter the vagina is separated from the cervix, and the uterine arteries are ligated. It seems to me that it may be said that this combined operation simply combines the dangers and disadvantages of vaginal hysterectomy with those that distinctively belong to the abdominal operation.

In my personal experience, this preliminary amputation of the cervix has, in several ways, seemed to be of very great advantage. In the first place, the procedure occupies but two or three minutes, and we remove much more rapidly and thoroughly any breaking-down tissue than we do by a curettement. Then by packing the cervix, if necessary, we entirely remove all danger of infection in removing the uterus through the abdominal incision. If such a danger exists, of which I have some doubt, this entirely protects the patient from it. The great advantage, however, of this step, is in simplifying and shortening the time of the abdominal operation that is to follow. The ten or fifteen minutes required in dissecting the uterine neck is saved, and very often this separation of the neck is much the most difficult part of the operation. In those cases where the cervix has become extremely enlarged and fills the whole vagina, this preliminary amputation of the neck becomes almost a necessity to render abdominal hysterectomy possible.

While the technique of abdominal hysterectomy when done for cancer of the cervix is, in the main details, that of complete hysterectomy for other conditions, still there are certain variations from the ordinary operation to be made. After the upper portion of the broad ligaments on each side, including the ovarian arteries and the round ligament, has been ligated and incised, opening each broad ligament, then the fold of vesical peritoneum containing the bladder having been cut across the anterior face of the uterus, and the bladder pushed well down below the cervix onto the vagina, we have on each side of the body of the uterus that wing of posterior peritoneum belonging to the broad ligament. This can be divided, without any ligation, close to the body of the uterus. Then the uterine arteries, with very little surrounding tissue on each side, are brought well under our fingers, above the uterine neck, near or a little below the internal os. I prefer to ligate the uterine arteries at this point, rather than attempt to do so farther away towards the pelvic walls and in close proximity to the ureter. After they are ligated on each side, it is very easy, with the fingers, to separate them from the neck of the uterus and push them out towards the point where they cross the ureter and towards the internal iliac artery. As we separate them and push them out on each side towards the pelvis, we reach that point where are located the infected glands, or cellular tissue, if there has been an extension of the infection from the cervix. When this condition is found to exist, the dissection of the diseased masses should be done at this time. In the four cases in which I found a cancerous mass in this location, it has been possible to dissect it out very thoroughly from the vicinity of the ureter and the uterine and iliac arteries, and I believe in every instance it was as completely done as we are able to dissect infected glands in the axilla.

Next, completing our dissection down to the vagina on all sides (the neck having been amputated), by a somewhat forcible and steady traction upon the uterus, we can stretch the vagina well up within the pelvis. Then clasping this portion of the vagina between two fingers of the left hand, well below the uterine tissue, we can divide it almost any distance from its junction with the neck that we may choose. This is especially important when the disease has extended to the posterior vaginal wall, which occurs in quite a proportion of cases. Should one prefer to close the vault of the vagina, it should now be done by a continuous over-and-over stitch, including at the same time the vaginal arteries at the sides. In this way any troublesome hemorrhage from these arteries can be readily controlled by the stitch, without the trouble of separate ligatures. In my own operations I have always left the vaginal vault entirely open, and have rarely seen sufficient bleeding from the vaginal arteries to require a ligature. Then a roll of gauze is carried from the abdomen out through the vagina, the upper end of it slightly protruding in the pelvis just above the cut vaginal edges. Then the peritoneal flaps, from one ligated ovarian artery across the pelvis to the other, are closely stitched by running a catgut suture. Thus there is left in the abdominal cavity no raw surface, except the two ligated ovarian arteries, and even these may be covered, in sewing the peritoneal flaps, if one should prefer to do so. On the vaginal side of this peritoneal wall there are apparently quite large raw surfaces left uncovered. From these surfaces one would expect quite a long-continued suppurative discharge from the vagina, but, as a matter of fact, this very rarely occurs. I think it very probable that the peritoneum above these raw surfaces is simply pushed down upon them and, to a very great extent, becomes agglutinated to them, so, practically, a large part of them becomes covered with peritoneum. At any rate, it is very certain that no large surface above the vaginal incision goes through the long process of healing by granulation.

In the treatment of cancer of the cervix by abdominal hysterectomy my experience from October 1, 1893, to May 1, 1898, includes twenty-five cases. This small number cannot, of course, furnish much valuable statistical information, but I have made a special effort to follow the subsequent history of the patients who have recovered from the operation up to the present time, and have been able to do so in every instance but two. Since the abdominal operation for cancer of the os is a very recent one, and has now only partially replaced the vaginal, we have, so far as I know, no long list of cases indicating the remote results that we may hope to attain. Probably they would not differ materially from those that have followed the older operation — vaginal hysterectomy. Still, if there were any difference in this respect, it must be in favor of the abdominal operation, because, as I have indicated above, the entire infected tissues would be removed by the latter in a certain proportion of cases in which, by the vaginal route, the operation would be incomplete.

In three cases of the twenty-five, the operation was not completed, on account of the extent of the disease. In one of the three, the tubes and ovaries were removed and the uterine arteries ligated. The bladder could not be separated from the uterine neck. The patient afterwards improved in health for several months, but died of the disease about two years after the incomplete operation. There were three deaths from the operation. In two cases of death there was extensive dissection of infected glands up to the pelvic walls. In one of them the uterine neck had been previously amputated for the cancer. In the third case the operation was a very simple and early one, but acute mania developed, of which the patient died on the seventh day after the operation. There was no indication of any difficulty in the abdominal cavity. There are left nineteen cases which recovered. Nine were operated more than three years ago and present the following history:

One operated October 19, 1893, no return of disease; one operated November 23, 1894, no return of disease; one operated January 15, 1895, no return of disease; one operated July 17, 1895, no return of disease; one operated December 30, 1895, no return of disease; that is, of the nine cases of three years, or more, ago, we have five remaining at the present time perfectly well. The history of the remaining four, in brief, is this:

One operated June 5, 1894, died two years after from return of cancer — an apparently early operation, although there was extension of the disease to the glands in the pelvis on one side.

One operated September 1, 1894, infected glands, left side of the pelvis, near the point where the uterine artery crosses the ureter; no return of the disease fifteen months after the operation. Subsequent history unknown.

One operated February 20, 1895, died about two years later, of cerebral hemorrhage. No return of the disease. This case presented a notable incident that may be worth recording, even though it be somewhat aside from the subject under consideration. The patient was sixty-six years of age and weighed about 200 pounds. She was placed in the full Trendelenburg posture and the operation was quite a long and difficult one. After she was placed in bed and recovered from the anesthetic there was apparent slight paralysis of one side and difficulty of speech. From this, however, she entirely recovered in about four weeks. This was the only instance I have ever seen in which any apparent harm has followed the use of the full Trendelenburg posture.

Number four operated July 18, 1895, died of return of the disease about three years later.

The remaining ten cases operated between January 1, 1896, and May 30, 1898, are of too recent date to be of much value as to ultimate results. Two have died from recurrence of the disease; one subsequent history not known; one died from some obscure disease of the nervous system two months after the operation; one has recurrence of the disease after eighteen months. Five cases no return of the disease.

In relation to the after-history of the above cases the accuracy of diagnosis has an important bearing. In about one-half of them the malignant character of the disease was confirmed by microscopical examination; in the remainder the diagnosis was clinical. But epithelioma of the os is as accessible and as readily diagnosed as that of the lip, and adeno-carcinoma of the cervix is so uniform in its mode of development that there is small probability of error in determining either condition.

In a comparative study of the progress of cancer of the cervix and cancer of the breast we find, in one respect, very close analogy, as, for instance, in some cases of cancer of the breast when the tumor is extremely small and movable, and probably of very recent origin, there will be very apparent extension of the infection along the lymphatics into the axilla and below the clavicle, while in other cases the growth in the breast has existed for a long time without any appreciable extension of the disease. That is, the condition of the breast itself really gives no certain indication of the extension of the infection that may have occurred beyond it. In cancer of the cervix the same uncertainty as to the involvement of lymphatic and cellular tissue exists. In two of the cases in which I have reported extension of the disease outside of the cervix, there was simply a small ulcer on the os surrounded by hardened tissue, the whole infected surface apparently not one-half inch in diameter. Still, in these cases cellular tissue was involved under the uterine artery and well out upon the ureter, while in other cases the cervix was extensively diseased and broken down, but not attended with any involvement of the tissues beyond the uterus itself.

While in cancer of the breast it is of no great importance to estimate before the operation the extent to which the lymphatic glands are involved, because we would remove all the axillary glands in any event, in cancer of the cervix it would be of great advantage to determine whether tissue outside of the uterus itself were involved, especially if we were ever tempted to do vaginal hysterectomy; but, unfortunately, the existence or non existence of infected glands beyond the uterus cannot be determined before the operation, unless extensively involved. Therefore, as I believe, the only operation justifiable in cancer of the cervix is abdominal hysterectomy.

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CONCERNING LAY SUGGESTIONS ON MEDICO-MILITARY AFFAIRS.

BY EDWARD L. MUNSON, M.A., M.D.,
Captain and Assistant Surgeon, U. S. A., Surgeon-General's Office, Washington, D. C.

THE outbreak of the war with Spain was marked by a large increase in the general correspondence of the office of the Surgeon-General of the Army, especially with regard to that part relating to the medicinal treatment of disease. The subject matter embodied in these latter communications has been of all degrees of dissimilarity, impracticability and absurdity; while the correspondents were residents of various foreign countries as well as nearly every section of the United States. The letters received were largely with reference to the diseases especially prevalent in the army at various periods, and in the course of a few months this office received, answered and filed no less than 626 communications, of which 186 related to yellow fever, 77 were in regard to typhoid fever, 87 were on the subject of malaria, 58 were concerning dysentery, and the remainder were scattered among various other affections. Practically all these letters suggested methods of treatment for disease (the adoption of which the writers frequently desired should be made compulsory on army surgeons), or else stated the possession by the writers of secret methods or formulæ, guaranteed infallible for one or many affections, which they were willing to impart to the Government for a consideration; the consideration varying from a railroad pass to the lump sum of $50,000, and from an appointment as nurse or physician to a life pension. The polite refusal of the surgeon-general to purchase their stock in trade was sometimes followed by charges and complaints to the President of the United States, or to the Secretary of War, that the Medical Department was criminally at fault in not giving the benefit of their superior knowledge or marvellous therapeutic discoveries to the suffering soldiers. This class almost invariably spelt fever "feaver" and understood no pathological difference between malaria, typhoid, yellow and other fevers. They were uniformly told that the Medical Department of the Army could neither purchase nor make use of any secret methods or preparations in the treatment of disease.

Another large class of correspondents was composed of purely disinterested individuals, usually veteran soldiers of the Civil War and motherly old ladies, who were anxious only to assist the department in the alleviation of suffering. Such were always courteously thanked for their interest and suggestions, no matter how valueless or grotesque the latter might be.

Some of the correspondents were anonymous, and a few were evidently of unsound mental condition, as instanced by the maiden lady who for some weeks bombarded the office with thirty-page letters of closely written and almost illegible manuscript on most irrelevant subjects and of the greatest incoherency.

In tone the correspondence varied from the modest suggestion of some domestic simple by some patriotic old lady to the blatant offer of the Chicago quack who claimed his ability and willingness to preserve the soldiers from death and from contracting disease of any kind at the rate of ten dollars per capita.

Many of the communications received, as the appended exact copies illustrate, are curiosities from a literary as well as professional standpoint, and frequently were so incoherent and badly written as to be made out with difficulty, even by the experienced correspondence clerks of the department.

While the better element in civil life appeared to appreciate that the Medical Department of the Army was presumably in possession of adequate professional knowledge for the proper treatment of disease, a certain number of individuals, previously unknown to fame, appeared to be convinced that they, and they alone, were capable of "curing" certain affections, notably yellow fever, and this conviction was apparently stronger in direct proportion to their own illiteracy and evident lack of medical training. Many, alleging themselves to be physicians, the appearance and orthography of whose communications failed to substantiate their claim to education, insisted that their services be accepted, as experts, to treat disease, particular or general, by some infallible method or secret preparation. The egotistical impudence of some of these individuals was frequently astonishing. In the rare instances where their valuable "secrets" were divulged to the office they proved either to be well-known drugs or combinations long in the hands of the profession, or else extraordinary preparations compounded and administered in defiance of the laws of chemistry and therapeutics. It was noteworthy that, while a large number of individuals claimed to possess remedies of almost miraculous efficiency in the cure of yellow fever, these experts were largely from the northern and northwestern parts of the United States, where yellow fever has never prevailed, and from such temperate climates as those of Germany, Austria and Russia.

From their letters one received the impression that the rapidity with which a remedy would cure yellow fever varied directly as the distance of its originator from endemically infected points. It was noteworthy that no special claims as to the cure of yellow fever emanated from southern points where the disease has from time to time prevailed. As illustrating the negative value of lay opinion in regard to yellow fever it is only necessary to name the following remedies, all of which have recently been strongly recommended to this office as positive cures for this disease:

1, Almond oil; 2, sulphur and molasses; 3, quinine; 4, "Holman's Liver Pad"; 5, artificial refrigeration of the sick room; 6, artificial heating of the sick room; 7, "Yellow Jack Bitters"; 8, wine and loaf sugar; 9, "Microbicide"; 10. "Diffusible Tonic"; 11, "Combined Cure, Yellow Fever and Worms"; 12, "Calaya"; 13, "Salvite"; 14, "Dr. Osgood's India Cholalagogue"; 15, asafœtida and gum camphor; 16, carbolic acid; 17, washing in sulphur water; 18, mustard plasters and mustard pediluvia; 19, "Oxydonor Animator"; 20, "Dixie Chill Cure"; 21, maintained asepsis of air passages (prophylactic and curative); 22, orange leaf tea; 23, "Zymoticine"; 24, wire masks covered with absorbent cotton (prophylactic); 25, the use of powdered sulphur in shoes and clothing; 26, juice of chamomile blossoms; 27, "Labordine"; 28, hot lemonade; 29, preliminary administration of antiseptics (prophylactic); 30, "Bosso"; 31, a composition liver pad (composition secret); 32, boiled water; 33, "Wiskey and Lemmon"; 34, the burning of tar (prophylactic and curative); 35, a pinch of salt on tongue twice daily (this will cure all fevers); 36, heated molasses; 37, "Micmac Indian Remedy"; 38, turpeth mineral; 39, Sanarelli's serum; 40, "Electropoise" (guaranteed to cure 95 per cent.); 41, "Dr. Gray's Cure"; 42, lemonade and Epsom salt; 43, burning of rosin (prophylactic and curative); 44, cupping; 45, powdered charcoal; 46, bathing in alum water; 47, lemons and oranges; 48, ginger root; 49, bathing in sea with clothes on; 50, milk and tar boiled together; 51, mineral water (brand not specified); 52, "Mellon's Yellow Fever Remedy"; 53, peach leaf tea; 54, placing patient in trench and covering him with loose dirt; 55, tea made from the bark of Mesquite bush; 56, a mixture of olive oil, salt and lime juice; 57, green tea and Cognac; 58, pint of lime juice after meals; 59, "Antidotum Ultimatum"; 60, treatment of the case by a homeopathic physician; 61, "Caldwell Remedy"; 62, hot-water baths; 63, vapor of "crude oil"; 64, a diet of salt mackerel; 65, "Cooper's Embrocation"; 66, fluid extract of Eucalyptus; 67, "Amarin"; 68, "Maya Indian Cure"; 69, "Gaseo-Chemic Treatment"; 70, the intravenous injection of raw onion juice.

Many of the above remedies were recommended by a number of individuals; sulphur, in some form or other, being especially popular, and its use in the shoes being strongly urged upon this office by no less an individual than the president of the American Humane Society. Many of these alleged remedies are stated to have been handed down as heirlooms for generations, or to have been originally derived from some old sea-captain or some Jesuit priest who had vouched for their efficiency.

In regard to typhoid fever, one individual urged the employment of onion poultices to the soles of the feet as never failing to abort the disease, while another wrote to call attention to the fact that a diet of well-browned peanuts would prevent small pox. The office was told that the troops, while in the tropics, must be given a daily ration of Tabasco Sauce; that every light-complexioned man going to Cuba should take a daily dose of sodium phosphate; that the free use of garlic would ward off all diseases, and that the city water of Orange City, Fla., was a febrifuge in malarial fevers. It was urged to purchase "Lincoln Spring Water" for the cure of insomnia, and to require each soldier to wear a flannel bag containing camphor to avert malaria. One woman wrote to express her surprise and indignation that the troops were not provided with houses. A Doctor of Medicine called attention to his device to make each soldier breathe through his nose and so escape the inhalation of microbes. A "Doctor of the Laws of Nature" offered her services; the maker of the "Wonderful Ten Minute Pile Cure" asked the best and cheapest way of bringing his product before the public, and the inventor of a patent "Flea-catching Machine" urged that a number be purchased for the comfort of the soldiers in the tropics. Another wrote the President to request Congress to appropriate a sum for the purchase of his remedy for piles, and offers to take the Chief Magistrate into partnership for its manufacture in return for such action. A man from Michigan desired the contract for supplying slippery-elm bark; from California came a letter urging the adjutant-general to prevent malaria by the "medication of the feet" of the soldiers, and a New York chemical company wished to introduce "Liquid Killem," a parasiticide, among the troops at Chickamauga. One individual surprised the office with a box full of dirty bottles of various shapes and sizes, filled with the most unpleasant looking decoctions of domestic manufacture, which were warranted specifics for everything under the sun, one bottle "curing tisix, scroffalo, stome ache trubbles and stop that tiard fealing." Another specimen is a "Great Blood Purerfier," and is stated to "Wark Merricals." The box was accompanied by the following letter:

> "May 30th 1898
>
> TO THE SERGEONERAL, — Dear sir I find that these Medisons that I Send yau, have bean so useful And doing so mutch good, that I Would if yau Would per mitme, that I Would Continure finding that I have removed paims And Curered people Who have been suffering for years but of Course I Want not conflict With the Law And Would be pleased if I could Continure."

Another wishes to introduce his preparations into the army, and sends samples of his villainous compounds. He evidently is convinced that the office has nothing better to do than to solve the riddles presented to it, so the following letter is sent by him:

> "TO THE SURGEON GENERAL'S OFFICE
>
> *Dear Sir*, — I Write to Ask some informtinon, About that Box of Sample Medison that I sent in the Month of June 1898. And you told me that on account of War With Spain that it Would be uterly Imposible to Aneliize, And I thought that I Would Ask you When or at what time that you thought that the Doctors Would be Able to Anellize or wheather that you had Annellized or not"

One enterprising M.D. requests that the Government obligate itself to pay him money (sum not specified) in case a thorough test of his treatment for typhoid fever proves of value, generously leaving a loophole as follows:

"After testing the treatment if it cures as claimed, then the Gov is due me the amount agread up-on, if not she is not due me anything."

Another approaches the subject from a religious standpoint.

"Mar. 21, 1898.

DEAR BRO. MCKINLEY

Honored Sir, — Jesus says, Whatsoever ye shall ask in my name it *shall be done*. We *know that Jesus will fulfil his promise*. Now I do ask in the name of Jesus that the soldiers of the United States Army may have a medicine that is a *sure cure* for rheumatism & many other complaints. You will see by this circular what it has done & what it will do. I have sold it to many people & there is *not one* that have taken it according to directions but what speak very much in its praise. It is manufactured by the Rheumatic Cure Co., Dearborn St., Chicago, Ill., Where you can get it."

A gentleman from West Virginia who desires to sell a remedy for driving away flies from the sick for the sum of $50,000 prefaces his request by:

Gents: — Please donte take me to be a crank in regarde to below as you See I ante no college graduate — as i am amkwarde in my explanation — But I mean Square & Honest. Business."

From Alleghany, Pa., comes a very urgent invitation for the surgeon-general to be present at the exhibition of a new apparatus, of which the inventor says:

"It is said the germ of yellow fever is not yet known if so I will say that my instruments will reveal it if it exists in nature. If it is smaller than the smallest known microci then it will very likely prove to be one of the ever living Atoms which manufactures the poisonous substance of "*gass*" that produces the disease."

From the State of Maine comes the announcement of the cause of leprosy, with a modest renunciation of the honor of its discovery as follows:

"NAPLES, ME.
March 25, 1898.

ARMY MEDICAL MUSEUM:
Surgeon Generals Office, U. S. A.:
Washington, D. C.

I have been directed by the Curator of the Smithsonian to introduce to your attention my recent practical discovery in physiology. My discovery is perhaps best explained by a review of first causes. If an intimate knowledge is entertained of first causes. Then their effects are better appriciated, and dealt with. The very obscurity of the first causes of "Leprosy" is perhaps the reason of the previous undiscovery of a preventive, or cure.

The discovery that I desire to call to your attention is my discovery of the first causes of "leprosy" and its cure. To be very brief: — My method is the subcutaneous injection of serum of animal blood. The patients body should enjoy the exposure to air and sunlight. The first treatment is to be followed by the adoption of the blood baths of the ancients. I may add in conclusion that the first cause of leprosy is cannibalism. I prefer its introduction — and tests — to be made by the Institution. I desire no further personal identity with the discovery nor the honor."

A physician residing on Henry Street, Brooklyn, N. Y., writes:

"BROOKLYN, N. Y. May 15th 1898.

Dear General: — In my forty years of medical experience I have met with nothing more certain than the curative effect of bean water upon punctured wounds, & in the interest of our soldiers, I feel it my duty to inform you of a remedy at once so simple, attainable, & efficient."

Then a note of advice and warning from a lady of New Bedford, Mass.:

Dear Sir: — Whoever you are, this war strikes a wild terror to my heart, and I fear that my countrymen will be tortured by the Spaniards. If I were a soldier, and could get it, I would carry morphine enough to know nothing more very soon after it became evident that I should be captured by the Spaniards, who are very cruel.

I fear Blanco's great confidence may lay in some under water plot similar to that which caused the destruction of the Maine.

"Were half the power that fills the world with terror,
Were half the wealth bestowed on camps and courts,
Given to redeem the human mind from error,
There were no need of arsenals or forts."

The office was in full accordance with the sentiments expressed in the following extract, especially the last clause:

"FT MADISON IOWA
Jan 27 1899

MR ALGER, Dear sir:

Dear sir. . . . they sent all through the country for Doctors to come and see what it was and they could not tell weather it was smallpex or chickenpox they do not look any more alike than a Hog or Dog Why sir as big a fool as i am i can tell the smallpox when it first comes out and as soon as it shoes on the sirfis i can tell wether the pearson will live or die and all your aproved medisons wont change the condition if you dont bleave it . . . i will Close this by sayind after looking the the thing all over i find i was a dam fool for wighting in the first place"

A superintendent of schools suggests:

"OFFICE OF COUNTY SUPERINTENDENT
OF EDUCATION,
COUNTY. S. C., July 30th 1898.

HON R. A. ALGER
Secty of War,

Hon Sir, — It is painful to the people of the country & myself to see how deadly the Typhoid fever has been to our brave soldier boys, and you will pardon me to make just this suggestion in its treatment. To wit: Chop up a half dozen onions with a teaspoonful of salt, make two small sacks to fit soles of feet, and will vouch that in from two to twelve hours the fever will depart. If collapse take place then use stimulants. Dont be in a hurry to take off poultices."

A patriotic medical man offers his services to his country in the following letter:

"COUNTY, PENNSYLVANIA

March 28, 1898

MAGOR WILLIAM MCKINLEY

Presedent of the U. N. S. of america. Sir as the ought look is at Preasendent it Puts me some in Remenbans of 1861 & 1865 as the Nation or our Repuplick Neaded some help and as the way things are Stiring Round i Wish to ask Wether i coodent git a Pointment as. a Doctor to some Regement or some head quarters i ame a veateran of 4 Pa Cal of 1861 & 1865 and a member of the grand armey to the Repuplick of the United States i have seen in former days allso. Ex President, R. B. Hays of the 23, Ohio i lived near freemont ohio for 10 years. I ame Well a Ware of youre mind being thirly Put to task at the Preasedent crices as it seems at Preasent thoe We might have War With spane. Will you Kindly Remmmber me and find *a* Posetion for me

Yours truly
(Signed) DR. J. J. B.
County, Pennsylvania."

Two naturalized citizens of the United States offer their assistance to the department:

"Anaconda, Montana, the 1 April 1898
His Highness Mr. Alger
Secretary of War

Dear Sir, — Excuse my writing to you, but I feel so much for this Country that I like to do Something too in time of war. I can make very good Salf for wounds, and other for burn, (Ointment for burns). If you allow me, I will Sent you a Sample of it. I am born in Belginm) and I no that you need good Pigeons in time of war, for your forts and for your Man of War. If you need Some, I will go to Belgium to get Some, because I no there are the best flyers in the world. Now is the time to get the best youngones. (England get his Pigeons there too)

One's more excuse If I dint Wrong.

Respectfully yours"

"Rochester January the 9 99
Mr Allgir, Secretary of War
Washington D. C

I. leth you no that I. mak Invention of Experiment for the Yello Fiber, for the Unitat Stats Army, I. rod a letter down to Mr. Presendent McKinley he tell me, that your Business, so I. tell you that Experiment is the bust, what you can feind in the World, you no that you self that so many Solder going Dead, and get sik down Cuba and all ofer the Sout. If you thak 2–3 draps from that Experiment but that in a glas with Watter and den Drinket, so you by savet from the Yello Fiber, so I wont to have you to tell the War Department about that, I. will proof that to yo and to the Unitet Stats of Amerika, If the War Department or the Goverment give me, some Mony so I going down to Cuba and proof that, I send you a Sample If you wanted, pleas leth me no so sun is posible for you.

If the War Department dont thak that so I give that to England or somewhere

yours Respectfully
Gurantet by ☞ E. A. B.
Rochester N. Y."

The conclusion to be drawn from this article, if any, would seem to be that Carlyle's definition of the English nation, "Thirty million people, chiefly fools," applies also, in some degree, to our own country.

Clinical Department.

A CASE OF SPORADIC CRETINISM.

BY FRANKLIN W. WHITE, M.D., BOSTON.

My reason for reporting this case is the comparative rarity of the disease in America. It is only within the last five or ten years that the profession has learned to recognize it. Osler[1] in 1893 could find only eleven reported cases in America; in 1897 he gives a summary of sixty cases.

The patient is a girl two years of age, born in this country, of Italian parents. No hereditary taint was discovered; the father had a fistula in youth, but otherwise had been well and strong. The mother, who died of pneumonia seven months previous, had always been a vigorous, healthy woman, and had borne three perfectly healthy children, now four, six and ten years old. This girl was the product of an easy labor, and nursed by her mother for somewhat over a year, and since then fed chiefly upon bread and milk, oatmeal and potato.

Her present pathological condition is not a late development, but dates from birth, according to her father's statement. With the exception of a severe attack of "bronchitis" six months ago she has suffered from no acute illness. She has always been a dull and backward child, and has never learned to talk, but makes curious inarticulate sounds. She is placid and stupid, practically an idiot, with sluggish and unresponsive mental faculties. She takes little interest in her surroundings, and rarely laughs. She never has learned to stand or walk, and only within a week or two has been able to sit up. Her sight and hearing are apparently good. Her appetite and digestion have always been good, but she is habitually somewhat constipated. She sleeps fairly. Her skin is always dry and cool, free from perspiration; she has been afflicted with eczema for the last six months.

Her appearance is that of a typical cretin—a short, squat figure, large head, full face, stolid and expressionless, broad flat nose, small eyes wide apart, half closed by swollen lids, double chin, wide-open mouth, with thick lips and thick protruding tongue, short, thick neck, big, pendulous belly, and pallid, dry, boggy skin. The anterior fontanelle is open and two inches wide; the posterior fontanelle is closed; the frontal eminences are prominent; there is no cranio-tabes. The hair is dry, light reddish brown, coarse and straight. The eyes are brown, the iris normal. Three incisor teeth are present in the upper jaw, two incisors were just appearing in the lower jaw at the time of my first visit, and the gum was somewhat inflamed about them. The teeth are short, rough and irregular. The palate is normal; the voice is harsh and rough.

The skin is everywhere thick and boggy, and does not pit. It is markedly pale, except upon the hands and feet, where it is always bluish and especially cold. No supraclavicular pads were found. No thyroid gland was felt, but there was no notable thyroid depression. No rosary was present. Heart and lungs were normal. There is a small umbilical ring, which will hardly admit the end of the finger, but no hernia. The liver is normal in size, the area of splenic dulness increased, but the spleen is not palpable. Muscular weakness is shown by a marked lordosis, and imperfect ossification by the open fontanelle, the stunted growth of arms and legs, and the stumpy fingers and toes. There are no curvatures or anomalies of the limbs, and no enlargement of the epiphyses. There are no paralyses or pseudo-paralyses or sensory disturbances, and the patella and pupillary reflexes are normal. The cervical, axillary and inguinal glands are easily felt, but not especially enlarged. The genitalia are normal. The temperature is low, namely, 97.4° F. by rectum. The weight is twenty-four pounds ten ounces.

The urine was normal in color, acid, specific gravity 1.018, and contained the slightest possible trace of albumin. The sediment showed nothing abnormal. Dr. R. H. Fitz[2] had recently called attention to the occasional presence of albumose in the urine in myxedema. It was not present in our case.

The blood examination was as follows: Red corpuscles, 4,392,000; white corpuscles, 4,500; hemoglobin, 75 per cent. A differential count of the white corpuscles gave:

Polynuclear leucocytes	58 per cent.
Large mononuclear	3 "
Lymphocytes	36 "
Eosinophiles	5 "

No abnormal red corpuscles were seen.

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[1] Osler: American Journal Medical Sciences, 1897, cxiv, p. 377.

[2] R. H. Fitz: American Journal Medical Sciences, 1898, cxvi, p. 36.

The following measurements were made:

Height	2 feet 3½ inches
Girth, umbilicus	23½ "
Girth, nipples	20½ "
Leg (anterior superior spine to internal malleolus)	10½ "
Thigh (anterior superior spine to top of patella)	5½ "
Upper arm (acromion to external condyle)	3⅞ "
Forearm (external condyle to tip of styloid)	3½ "

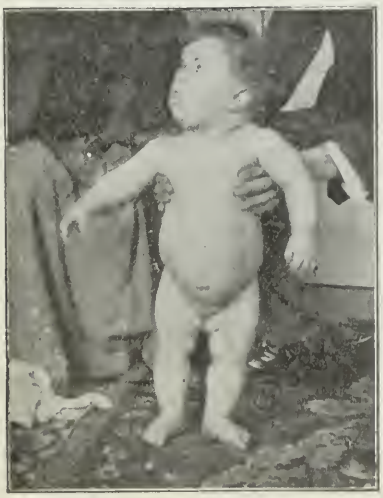
Diameters of head.

Occipito-mental	7⅞ inches
Occipito-frontal	6¼ "
Suboccipito-bregmatic	5⅞ "
Biparietal	5⅛ "

The diagnosis in this case is very clear, and the diagnosis of cretinism in general is not difficult. Early diagnosis is important, for the earlier the disease is recognized the greater is the prospect of recovery.

In view of the importance of early diagnosis, and the apparently recent recognition of the disease by the medical profession, I will say a few words about differential diagnosis.

The lesions in hereditary syphilis and rhachitis are so characteristic and well known that these diseases are not likely to be confused with cretinism.



Among idiots, the Mongol type resembles the cretin more closely than any other. Telford Smith[3] says, "in idiots of this type we get the stunted growth, the dull, heavy expression, with open mouth and thick lips, the slow, deliberate movement and hoarse, guttural and monosyllabic speech, the mental apathy and lack of spontaneity, the sluggish circulation and sensitiveness to cold. The skin is coarse and dry, the hair short and thin. First and second dentition are delayed. As far as palpation enables one to judge, the thyroid gland is subnormal in size." According to Osler, there is never a myxedematous condition of the subcutaneous tissues.

Cretinism is easily distinguished from the various forms of idiocy dependent upon faulty development of the hemispheres in fetal life, the hydrocephalic and microcephalic, and also from the forms of imbecility associated with the cerebral palsies of children.

The sporadic cretin often presents the characteristics of *infantilism* — "the condition characterized by preservation, in the adult, of the exterior form of infancy, with the non-appearance of secondary sexual characteristics." Meige[4] gives the following description: "Rounded chubby face, lips thick and prominent, nose slightly developed, face smooth, skin clear and fine, hair thin, chest long, cylindrical, belly a little prominent, limbs plump, a thick fat layer enveloping the whole body, masking the contours of bones and muscles; rudimentary genital organs; no hair upon the pubes or in the axilla; voice sharp and shrill; thyroid body generally small." Infantilism is rare in this country, except in connection with hereditary syphilis, and there is little likelihood of confounding it with any save slight grades of cretinism.

The condition known as fetal rickets (chondrodystrophia fetalis) described by Kaufman[5] and Bircher[6] is liable to be mistaken for cretinism. The most characteristic feature is the dwarfing, with remarkable shortness of limbs, and usually with enormous enlargements of articulations, due to cartilaginous hyperplasia at the ends of the bones. Bircher believes that the condition is independant of changes in the thyroid gland. The striking joint enlargements and the absence of a myxedematous condition of the skin are sufficient to distinguish this disease from cretinism.

There is one pathological basis for the whole group of cretins, namely, loss or perversion of function of the thyroid gland, the anatomical basis varies, namely, total absence, atrophy or goitre. In our case the gland is either atrophied or absent, probably the latter. Many cases have been reported clinically with absence of thyroid gland, but it is almost impossible to judge by palpation.

In one of Hilton Fagges's[7] cases the gland was thought to be absent, but autopsy showed that there was a thyroid gland of some size, with tumor. There have been a considerable number of autopsies reported however where the gland was absent. (Friend,[8] Curling,[9] Bramwell,[10] Beach,[11] Kissel.[12])

Osler reports a fatal case, with autopsy, showing a marked atrophy of the thyroid.

There is a striking difference between sporadic and endemic cretins, in respect to goitre; in endemic cases the percentage in some statistics has been as high as 60 (Knapp); in Osler's 60 sporadic cases only seven had goitre.

Feeding with thyroid gland is the recognized specific treatment in cases of cretinism. We have started our patient on one-half grain desiccated sheep's thyroid three times a day, and expect to see a marked improvement in condition in the next few months.

The photograph shown was taken through the kindness of Dr. John Lovett Morse.

MEDICAL EXAMINATION OF PROSTITUTES. — Under Spanish rule prostitution in Cuba was licensed and under governmental control, frequent medical inspection of the women being required. In the Province of Pinar Del Rio this inspection is continued under our military government, venereal disease being classed and treated as one of the largely preventable affections.

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[3] Telford Smith: Pediatrics, 1896, ii, p. 315.

[4] Meige: L'Anthropologie, Paris, 1895, vi, pp. 257, 414.

[5] Kaufman: Untersuchungen über die sogenannte fetal rachitis (Chondrodystrophia Fetalis), Berlin, 1892.

[6] Bircher: Lubarsh und Ostertag., Ergebnisse, Abt. i, 1896.

[7] H. Fagges: Practice of Medicine, vol. i, p. 772.

[8] Friend: Ref. by Osler, loc. cit.

[9] Curling: Transactions of the Royal Medical and Chirurgical Society, 1850, xxxiii.

[10] Bramwell: Atlas of Clinical Medicine, vol. i.

[11] Beach: British Medical Journal, 1896, ii, p. 620.

[12] Kissel: Arch. für Kinderheilk., 1899, p. 76.

A CASE OF EXOPHTHALMIC GOITRE.[1]

BY J. N. COOLIDGE, M.D., BOSTON.

It was through the kindness of Dr. J. P. Treanor, of Dorchester, that I saw this case, and to him I also owe the privilege of reporting it.

B. B., twenty-two years old, a domestic, was seen early in August of this year. She was born in Ireland, and brought up under circumstances rather better than usual. She says her grandfather and grandmother died of old age. Her father died at sixty-five, cause not known. Her mother is now over fifty, and is well. Four brothers died of children's diseases; five are living and well. Five sisters also are living and well. One brother and two sisters are known. There is nothing about them to suggest any neuropathic tendency. Until four years ago this woman had never been sick. Then she had grippe, from which she made a good recovery. In June, 1897, she came to this country and found employment as a domestic. Six months later, that is, January, 1898, she felt that she was getting tired out. She was short of breath, but only on exertion. She also had pain in the back and sides. Her appetite was poor. Up to this time she had menstruated regularly.

Between five and six months ago, while drawing water from a well, she felt a sudden, sharp pain in the epigastrium. It was as if some one had struck her. With difficulty she made her way into the house, where she fainted. Finding herself absolutely unfit for work, she left her place, and went to one of her sisters. She was very short of breath and much troubled by palpitation. A tremor of the hands developed and became intense. Her appetite was poor. She was nervous and slept badly. Soon loss of flesh was apparent. Since then she has not menstruated.

It was one month after the attack above mentioned that she had her first medical attention. Her complaint was great pain in the epigastrium and right iliac fossa. The tremor was very marked. To drink she had to hold the glass with both hands. She was restless and talked somewhat incoherently. She was extremely pale. Her temperature was 101°. Her radial pulse was very weak and irregular and with difficulty counted; it was over 160. The heart's apex was one inch outside the nipple line; percussion was unsatisfactory because of the patient's restlessness; the heart sounds were replaced by loud, blowing murmurs, heard all over the cardiac area; there seemed clearly to be a dilated heart. The lungs were negative. The abdomen was soft and tympanitic, but just about the umbilicus and in the right iliac fossa was marked tenderness. At the epigastrium was a violent pulsation. No exophthalmus nor enlarged thyroid was noticed. The condition of the heart overshadowed everything. She was stimulated and given a small dose of morphia. In twenty-four hours the pulse was regular but rapid and weak, keeping at the rate of about 140, never below. In two days the apex had resumed its normal position. Ten days later there there was still a blowing, systolic murmur heard plainly at the apex and faintly over the whole heart's area. Her treatment, besides rest, diet and laxatives, had included bromides, and, for a few days only, digitalis. The epigastric pain and tenderness were still present. The pulsation in the upper abdomen continued, and was in most marked contrast to the almost imperceptible radial pulse. At this time there seemed to be a very slightly prominent thyroid, but neither the patient herself, nor the relatives with whom she was staying, had noticed any change. There was no pulsation in it. There was a strong pulsation in the carotids. Her temperature was 100°, her pulse 140, and very weak. There was no exophthalmus; the pupils were normal. During the next week she improved in general appearance. The tremor diminished, the pain went away, her appetite increased, and she slept better. Most of the physical signs, however, remained the same. The pulse was still 140. Against advice, twelve days after the first visit, she got up and was lost sight of for nearly three weeks; when then seen the dyspnea, palpitation and tremor had all returned, and for the first time there was slight exophthalmus, and a clearly enlarged thyroid. The pulse was 150. She was immediately started on thyroid extract.

Ten days later, though she had been up and about all the time, there was no tremor, no palpitation, and marked improvement in subjective symptoms. Her pulse was 120. There was no change in the size of the thyroid nor in the exophthalmus.

Three weeks later, though still no change in the thyroid nor exophthalmus, and the pulse remained at 120, she felt strong and well, and wanted to go to work. There had been no return of abdominal pain. At no time was there albumin or sugar in the urine.

Again she was lost sight of and has been seen only once since, in response to a request. The thyroid treatment had not been continued. Tremor and palpitation had returned. The goitre and exophthalmus were unchanged.

There may be very few unique features to this case, but a number of points seemed of interest.

So far as it has been possible to learn, there is no hereditary tendency, no history of nervous or mental disorders. It cannot be said that an actual injury was done when the patient lifted the pail of water, resulting in such severe pain and subsequent fainting, nor even that this was the starting-point of the disease. But it is of interest that a physical rather than emotional disturbance should seem to play such an important part. The location of the pain, the feeling as if she had received a "blow in the stomach," may also be significant.

The prominence of the cardiac symptoms was most striking, the condition of the patient when first seen being almost that of collapse.

Little can be said regarding the treatment by thyroid extract, as it was of such short duration. While taking it the goitre and exophthalmus remained unchanged. Though diminished, the pulse was still rapid. On the other hand, palpitation and tremor were absent, and most striking of all was the improvement in the patient's general appearance. She was far less nervous and much more cheerful. She felt well. The last examination made while she was taking thyroid extract was after she had walked at least half a mile.

Bubonic Plague in Madagascar. — It is understood that bubonic plague has appeared in Madagascar and has already caused considerable mortality among the natives.

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[1] Read at a meeting of the Clinical Section, Suffolk District Medical Society, December 21, 1898.

Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

DISSEMINATION OF LEPROSY BACILLI FROM THE UPPER AIR PASSAGES.

Schäffer,[1] of Breslau, has made some experiments to determine this question. It was first shown by Neisser's histological preparations that the upper layers of the skin — not only the epidermal structures but the papillary layer of the corium — are free from bacilli in leprosy. It has since been shown that the bacilli are sometimes found in the lumen of the sweat-glands and in the inner root-sheath of the hairs. Hence it is not improbable that the bacilli may gain egress by these channels to the surface of the skin. So far, however, as we have any means of determining, this seldom takes place, although we need far more experimental work before the question is definitely settled. Even if it were found that the bacilli could frequently gain entrance in this way, the danger from this mode would not be very great, as they could be carried to other people only by contact, or by clothing, etc. Schäffer does not believe with Cornil that the leprosy bacilli leave the body only when deprived of life, but thinks it probable that if they remain long on the dry epidermis they gradually die. In any event the danger of an infection in this way may be reduced to a minimum by cleanliness and precautionary measures. In the case of open ulcers the conditions are much more favorable for the life of the numerous bacilli upon the surface. But here, too, by disinfection and antiseptic dressings, the chances of propagation may be made very small.

A method of dissemination of the leprosy bacilli, which has not received sufficient attention, is that by way of the mucous membranes of the upper air passages, and especially of the organs concerned in speaking. Flügge has shown that in speaking, coughing and sneezing very minute particles of the secretions of the mouth and nose are disseminated to a considerable distance. Experiments upon these lines were undertaken by Schäffer in cases of leprosy, where lesions occur with great frequency on the mucous membranes of the air passages, and are uncommonly rich in bacilli. The subjects of these experiments were two patients afflicted with tubercular leprosy, in which the nose, mouth and larynx were affected with ulcerated lesions in which numerous bacilli were found. The method used was to cause the patient to speak in his ordinary voice for ten minutes, while a large number of microscopical slides were arranged before him. At the end of this time the slides were found to be covered with very numerous drops of varying size. These preparations, when stained by the Ziehl-Nielsen method, showed large numbers of bacilli that were considered to be the specific micro-organisms of leprosy, besides some other varieties. The number of leprosy bacilli in the different drops varied greatly; in some of the larger drops but few were found, while oftentimes they were present in great numbers in the smaller ones. It was shown that in ten minutes several thousand leprosy bacilli were thrown out. In some instances they were detected at a distance of one and one-half meters from the patient. Experiments as to the possibility of checking this throwing out of bacilli proved that it could with difficulty be diminished by rinsing the mouth, and touching the ulcerated surfaces with nitrate of silver, but that it could not be wholly checked. It was found that comparatively fewer bacilli were thrown out by coughing than by speaking. In ordinary expiration few bacilli were given out.

Several experiments showed that very great numbers of bacilli were given out in sneezing, in one instance more than 110,000. The conclusion is therefore reached, that in lepers in whom there is an affection of the mucous membranes of the air passages, not necessarily of an extreme grade, thousands of bacilli are thrown out to a considerable distance in speaking, coughing and sneezing, and that this dissemination cannot be prevented by therapeutic measures. Schäffer confesses his inability to explain the reason why infection with leprosy is so infrequent, despite the abundant opportunity for receiving the bacilli in the neighborhood of those suffering from the disease. Even if the bacilli that are thrown off are in part dead, as is maintained by many, the number of those thrown off is so great that the chances are that some at least are living; and if we accept the theory that they have little power of resistance to external conditions of temperature, etc., it would seem that their chance of propagation was particularly good here, when they are thrown off in a moist, warm medium.

At the International Leprosy Conference in Berlin it was shown that in a very large number of cases there was good reason to think that the bacilli gained entrance to the body through the mucous membrane of the nasal passages. This accords well with the theory that the throwing off of the bacilli from the air passages is a frequent mode of infection, as the minute drops containing the bacilli that are thrown off could be easily carried to the mucous membrane of the nose on inspiration.

These experiments seem to teach the importance of prophylaxis in cases where the mucous membranes of the air passages are affected. This can be partly accomplished by interdicting a close relationship with the healthy, and by careful regard to the local treatment of the lesions of the mucous membranes, although the throwing off of the bacilli cannot be wholly prevented in this way.

Schäffer asserts, in closing, that his object is not to create unnecessary alarm, as the danger of infection from leprosy is remarkably small, but to point out the probability that a dissemination of the bacilli from the upper air passages is relatively the most important of the various ways of infection.

DERMATITIS HERPETIFORMIS OR DERMATITIS MULTIFORMIS?

In an article entitled "Note sur les dermatites polymorphes douloureuses," Brocq[2] discusses this question, apropos of the recent meeting of the London Dermatological Society, where the subject had been brought up. At this meeting the discussion was participated in by a number of distinguished writers, whose remarks are quoted by Brocq with much detail. From his analyses of them he concludes that the general belief of the members is that the leading and almost pathognomonic symptom of the disease is its herpetiformity. It is chiefly upon this characteristic that Radcliffe Crocker, Colcott Fox, Stephen Mackenzie,

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[1] Archiv. f. Derm. u. Syph., 1898.

[2] Annales de Dermat. et de Syph., October and November, 1898.

Galloway, Pringle and others rely in differentiating dermatitis herpetiformis from pemphigus. The pruritus and multiformity of the eruption are to them of secondary consideration. It is to be noted, however, that the multiformity of the eruption was insisted on many years ago (before the first *mémoire* of Brocq) by White, Piffard and others in America, who have always, on this account, preferred the name, "dermatitis multiformis," insisting that the herpetiform character of the lesions was by no means a constant one.

Brocq then discusses briefly the question of priority in the description of this dermatosis. He considers that Tilbury Fox was inspired in his article on "Hydroa" by the works of Bazin, but that it was the vigorous intervention of Duhring that stimulated the recent scientific interest in this matter.

In discussing the different types of disease that should or should not be included in the group dermatitis herpetiformis, Brocq shows that there are no grounds for attaching hydroa vacciniforme to dermatitis herpetiformis, agreeing on this point with the majority of English dermatologists. He has not, apparently, met with certain cases of hydroa vacciniforme which show certain points of similarity with dermatitis herpetiformis, such as those observed by J. C. White, of which no mention is made. With regard to herpes gestationis there are no dissenting voices; all believe it to belong with dermatitis herpetiformis. Impetigo herpetiformis presents a more difficult question for solution. The English dermatologists were divided in their opinions. Duhring at first classed it with his disease, retracted later, and in his latest work says that while the two affections cannot be clearly differentiated, it is best from a clinical point of view to regard them as distinct diseases. Brocq thinks that impetigo herpetiformis possesses characteristics sufficiently well-marked to warrant its separate description. Hallopeau's "dermatite pustuleuse chronique en foyers à progression excentrique" he does not regard as having been as yet shown to possess sufficient claims to entitle it a place apart.

Brocq then refers to the acute and subacute varieties of dermatitis, that he has himself described under the name, "dermatites polymorphes douloureuses aigues et subaigues." Since his article, which appeared in 1888, few English dermatologists have accepted this form. He insists that he has not abandoned this view of the subject, but on the contrary is prepared to assert it with more positiveness than ever.

Many of the English dermatologists consider that pruritus is a relatively unimportant symptom in dermatitis herpetiformis. Crocker has asserted that it may be very moderate, or may even be wanting. To this view Brocq takes vigorous exception. He considers that *painful sensations*, which include itching, burning and tingling, are constant and pathognomonic in this disease. He lays stress on the burning and tingling sensations, which accompany the itching. [It seems impossible that so many good observers both in England and in America should have been deceived in a matter of such simple clinical observation. A number of cases have been observed in Boston, which undoubtedly belonged in the dermatitis herpetiformis group, in which itching (or burning) was almost wholly absent. The amount of pruritus that accompanies many dermatoses varies much according to idiosyncrasy and individual temperament. Certainly, marked itching and burning of the skin is not, in all countries, a *constant* feature of dermatitis herpetiformis. — Rep.]

Polymorphism was regarded by the London Dermatological Society as much less important than herpetiformity. Polymorphism cannot alone decide the diagnosis, yet its existence is of the utmost importance. The difficulty is to keep from interpreting the term too strictly. Pure types of the disease may be polymorphous during a single attack, or vary in type in successive outbreaks. In other cases the multiformity is less apparent, but the subjective and objective symptoms accord so exactly with certain outbreaks observed in typical cases that we are justified in including them in this class. Nevertheless, polymorphism is regarded by Brocq as the most important objective characteristic of this disease.

The preservation of the general health is still regarded as one of the four chief characteristics of the disease by Brocq, despite the protestations of the Englishmen. He believes, however, that there are a certain number of exceptions to this rule, and that a grave outcome is occasionally to be looked for. With regard to the value of eosinophilia, he regards this as a question for study. He regards the extraordinary numbers of eosinophilic cells in the blood and in the contents of the bullæ as, at least, a remarkable phenomenon, and thinks that possibly the cases of erythema multiforme and of pemphigus, in which eosinophilia has been found, may be forms of dermatitis herpetiformis. He admits that eosinophilia has been found in many other cutaneous affections, such as secondary syphilis, leprosy, leucemia, etc.

With regard to treatment, Brocq thinks that arsenic administered in large doses for a long period of time sometimes diminishes the violence of the attack, when it is tolerated; at other times it has no curative effect, and produces keratoses of the palms and soles. Quinine, ergot and strychnia are also of value. Locally he has tried the various non-stimulating applications with varying success.

Brocq next takes up at some length the question of the value of herpetiformity in the disease. Duhring has declared that the disease cannot exist without herpetiformity. Brocq rightly points out that different authors have employed the word herpetiformity in different senses. Some have interpreted it as characterizing an eruption that is composed of grouped vesicles upon an erythematous base, as simple herpes. Others have regarded it as expressing the arrangement of a zoster, while still another party used it in the sense of a formation of circles, more or less regular, with central involution, as in tinea tricophytina. Duhring has probably used it in the first sense. Brocq protests vigorously against the principle of refusing to admit into the dermatitis herpetiformis group cases not characterized by herpetiformity. Many cases that in every other respect seem to belong in this class are not characterized by the grouping or herpetiformity of the lesions, either in all or in some of the attacks. Hence he considers that the term dermatitis herpetiformis ought to be discarded. He thinks that a place still remains for a disease named pemphigus. He would apparently restrict the name to the bullous affections that have been called pemphigus vegetans, pemphigus foliaceus, epidermolysis bullosa hereditaria [probably an independent affection. — Rep.], pemphigus hystericus and pemphigus vulgaris. Pemphigus vulgaris he divides into an acute febrile form, which is of a grave character, and seems to be a malignant form of toxemia; and a chronic form, which develops insidiously, and with or without remissions, progresses to a fatal conclusion. It is characterized by bullæ of varying dimensions, which may dry and form crusts and ulcers.

In conclusion, Brocq reiterates his demand that the term dermatitis herpetiformis shall no longer be used in France to designate the group that he has called "dermatites polymorphes douloureuses." [If the name is to be changed, that of dermatitis multiformis, suggested long ago by those who have insisted upon the only points emphasized to-day by Brocq, cannot be improved on. The addition of the adjective *douloureuse* is not justified until it can be shown that this is a more constant feature than many believe. — REP.]

(To be continued.)

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Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

J. BERGEN OGDEN, M.D., SECRETARY.

REGULAR Meeting, Wednesday, December 21, 1898, DR. H. F. VICKERY in the chair.

DR. J. N. COOLIDGE read a paper entitled

A CASE OF EXOPHTHALMIC GOITRE.[1]

DR. BULLARD: I have been particularly interested in this subject for some time, and I will mention to the Society to-night one case which is of some interest from the acute onset. This case is one in which a girl of twenty-four, while stepping off one of the West End electric cars slipped from the back step and fell forward on the ground, but was not dragged; was terribly frightened, as the car was just starting. There was no injury done, and previous to this she had been perfectly well; no neuropathic history in the family. The thyroid was found enlarged on the fourth day after the accident and the patient went on from bad to worse, and died within a few weeks with hysterical symptoms, in addition to her thyroid.

This is one of the first cases, I think, in Boston in which there has been a death from accident accompanied by acute enlargement of the thyroid. These cases have been reported not infrequently in literature, but they are not known to the general practitioner. The literature shows quite a large number of cases of thyroid enlargement that came on suddenly from fright, shock or injury. Only a small portion of these cases are fatal. Most of them last a number of months, and then gradually disappear as the patient grows stronger, sometimes with recurrence later.

In connection with this, also, I should like to mention the occurrence of acute recurrent enlargement of the thyroid. I have lately seen a case on the service of Dr. Minot at the Carney Hospital in which a patient has now had three attacks. She is a nurse in the hospital, has good general health, and no history of any family trouble. She has three times had a sudden attack of enlargement of the thyroid, accompanied by fever. In the first she was in bed only two days; the second lasted ten days, and the third more or less for two weeks. There was in each attack very severe pain in the head, enlargement of the thyroid, and in some of the attacks sweating of the left side of the face. I saw her in the third attack, which began with acute pain in the left side, running up the back and into the back of the neck, so severe that she had to have one-fourth grain of morphia every three hours for some time. The pain involved the left side of the head and the left side of the neck, and there was sweating of the face on the left side only. There was no nausea or vomiting in any attack; the temperature rose and the muscles of the neck were stiffened. These symptoms gradually disappeared. In one of the previous attacks there was an acute dilatation of the pupil on the left side in connection with the acute enlargement of the thyroid, which only lasted a day or so. In the first attack the thyroid diminished very rapidly, the hospital note being that it went down visibly. In the other attacks the enlargement of the thyroid was not very great, and there was no reason to suppose it had diminished very rapidly. The case was striking on account of the recurrence, the acute enlargement, the very severe pain confined to one side of the face, and the symptoms supposed to be referable to the sympathetic system, sweating and dilatation of the pupil of that side.

DR. MORSE: I was especially struck by the fact that in this case the palpitation and nervous symptoms preceded the enlargement of the thyroid and the exophthalmos. This I believe to be the ordinary course of events, but, in the presence of the exophthalmos and the enlargement of the thyroid, I think we are very apt to forget that there are two other sets of symptoms — the circulatory and the nervous. It seems to me that in the presence of palpitation with marked nervous symptoms we always ought to suspect a beginning exophthalmic goitre, and in certain cases even to make the diagnosis without the existence of the objective symptoms. In one autopsy I was very much impressed by the fact that the exophthalmos had all disappeared after death, showing it was due to circulatory disturbance. I have never had the opportunity of trying thyroid extract, in the treatment of these cases. The only thing which has seemed to me to be of much use in my hands has been rest. Sometimes I have thought that strophanthus helped a little, but rest seemed to be the one thing which cured or improved them.

THE CHAIRMAN: I should like to ask Dr. Bullard whether the pulse was accelerated in these attacks?

DR. BULLARD: It was not very much accelerated, and there was no tremor.

THE CHAIRMAN: Any diarrhea?

DR. BULLARD: No diarrhea.

THE CHAIRMAN: About the fact of a blow on the stomach, or that sensation, I have lately had under my care a young man who was very athletic and who went abroad for pleasure. He was playing tennis (in Florence, I believe) when he suddenly was conscious of a strain and distress in the epigastric region, whereupon he became neurasthenic, and so remained for many months. He is now convalescent. It seems to me in his case as if it might have been a disturbance of the solar plexus, and I wonder if there has ever been any such suggestion in connection with this well-known abrupt beginning of exophthalmic goitre. I should like to ask Dr. Bullard if anything of that sort has ever been suggested?

DR. BULLARD: I don't think the solar plexus has been suggested, but I think it is quite possible it has some connection.

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[1] See page 259 of the Journal.

Dr. G. B. Magrath showed the following pathological specimens:

I. BLADDER, PROSTATE, AND ADNEXA.

II. AORTIC ANEURISM; RUPTURE.

Through the kindness of Dr. Vickery I am able to show the bladder, prostate and adnexa of a man of sixty-five, who about thirteen months before his death underwent bilateral orchidectomy for hypertrophied prostate. The case seems to me one of unusual interest, both because of the comparative rarity of autopsy in cases of this sort, and for the reason that the prostate in this instance by measurement falls easily within the limits of the dimensions of the normal. As to the size of the prostate in this case, during the period of hypertrophy, we of course can hardly predicate definitely. It would not appear to have been a case of third lobe. There is no evidence whatever of that in this specimen. There were symptoms of difficult urination, necessity of frequent catheterization, and by physical examination evidence per rectum of what was described as a very large, rather nodular, prostate. The tumor of hypertrophic prostate is either fibromyoma, adeno-myoma or a mixture of adeno- and fibromyoma. In this case a thorough microscopic examination has not yet been made, because it involves the mutilation of the specimen. So far, however, as I have been able to make an examination, there is evidence of quite marked atrophy of the epithelium lining the glands of the prostate. There is also atrophy of the seminal vesicles. This case, then, I think would add another to the list of cases in which, in all probability, castration has been followed by some shrinkage in the size of the prostate.

The second specimen is that of the aorta of a woman of sixty-five, who died from rupture of an aneurism. It is a remarkable case, both from the fact that it is an example of multiple aneurism, and from the extraordinary condition of the intima. The aneurism which ruptured was an acute affair, located at about the level of the diaphragm, the rent in the aorta being about three centimetres in length. The hemorrhage was extensive, subserous, a portion of the blood making its way to the right pleural cavity. There are, in addition to this rupture, fusiform aneurisms of the left common iliac, left internal iliac, and the right common iliac arteries. The patches which are everywhere present upon the intima are extensive and markedly elevated, some of them reaching a height of at least one-half centimetre. They are soft, and in places break down very easily, showing beneath the intima and in the region of the thickened subendothelial connective tissue a mortar-like material which in the fresh state showed an abundance of cholesterine crystals.

The Chairman: The patient of the first case had had considerable dysuria for some months before the operation, and there was considerable alleviation of his symptoms after the operation. He had not much residual urine previous to it, but great distress. His distress was almost completely relieved by the taking of urotropin afterward. The operation seemed to have been a decided benefit to him; he was very glad he had it done, but there was a great deal of distress at times after that. Urotropin seemed to wipe that out as a sponge would wipe off a blackboard. Dr. Magrath spoke of the seminal vesicles being atrophied. It might be of interest to say that to my knowledge he had a seminal emission some time in the same year that this orchidectomy was done by Dr. Harrington, so that there was something to atrophy at the time the testicles were removed.

Dr. Gustav Liebmann showed

AN APPLIANCE (LANGERHANS'S) FOR THE MORE EFFECTIVE INFLATION OF THE STOMACH.

Dr. Liebmann: I think very few observers have acquired the knack of being able to recognize and demonstrate in the empty or partly filled human stomach, pathological positions, enlargements as verified by subsequent inflation of the organ, or if they have been successful in acquiring this routine, the physicians find themselves, notwithstanding, often disappointed in arriving at a sure recognition of pathological changes. Dr. Langerhans, of Leipsic, has, in order to overcome this difficulty, invented and published a very simple appliance for the more ready and reliable inflation of the stomach. I have constructed according to his direction the appliance, and I think, after having used it in a limited number of cases, that this method is more satisfactory than the use of the gastrodiaphrane. It gives me great pleasure to show you this appliance as I have constructed it. It consists of the ordinary English stiff stomach-tube of the size of a large lead pencil, seventy-four centimetres or about twenty-eight inches long. To the point of the instrument is fastened a very soft bag, and the bag is folded around the instrument, dipped in a mild antiseptic solution, and the instrument is then pushed down into the stomach. Air is then introduced by working the bulb, and the bag unfolds within the stomach, forming a tumor. With the ordinary method of inflating the stomach, using a soft tube and this double-bulb spray apparatus, the air is very apt to escape through an insufficient pylorus into the intestine, or up along the tube into the pharynx or mouth. This cannot happen with this instrument; the air must go into the bag and distend the stomach in consequence. You have it in your power to measure the air which you use. In case the distention of the stomach causes retching and uneasiness to the patient, you have it in your power to let off the air at any moment, and to renew the inflation upon the subsidence of retching. This is in itself a very great advantage, as in doing so you can in a very short time get your patient accustomed to the presence of the tumor in the stomach.

I have here a diagram as gotten up by Dr. Langerhans representing the normally situated, normal or simple dilated stomach in contradistinction to the fallen stomach or gastroptosis. While in the first case the stomach is seen protruding in the triangle between the costal margins from left to right, or, in case of dilatation, extending downwards to within two or three finger-breadths of the umbilicus, in gastroptosis the configuration is quite different. In gastroptosis there is first to be seen on the level of the umbilicus to the right or left of it, or more often in the median line, a circumscribed prominence which takes on the form of a horizontal ridge, and which is supplemented by a vertical ridge ascending on the left side of the abdomen until it disappears under the costal arch. When the horizontal ridge is very short or absent, and the vertical ridge is more prominent, then we are justified in speaking of a vertical stomach.

You see, then, that in cases of enlargements or displacements of the empty stomach we are baffled in seeing it at all, or if we do see something it is very indistinct, and we can make out only indistinctly the condition of things. In using this instrument you get dimensions and proportions that can be readily recognized through the integument. I think that this appliance is superior to the gastrodiaphane, and I might say it for two or three reasons: (1) the simplicity of the appliance, whereas the gastrodiaphane is more cumbrous; (2) it is claimed by clinicians that the illuminated area does not always correspond with the stomach, and (3) that in order to use the gastrodiaphane we have to fill the stomach first with water. Some claim it is necessary to fill the stomach with one litre, or one and a half litres of water, but if you do this the water distends the stomach, not as uniformly and evenly as air, especially air confined in such a bag as this.

The Chairman: I should like to ask Dr. Liebmann if the rubber bag that is actually proposed by Langerhans is of a more spherical shape than this one that he used for purposes of demonstration.

Dr. Liebmann: I am not aware that he speaks about the shape of the bag. I went to work according to his description and this is the result. I must add my doubts whether the cylindrical form would not push the stomach in a longitudinal direction, but it seems hardly possible: the stomach rather controls the instrument than the instrument the stomach.

Dr. W. H. Prescott read a paper entitled

DOUBLE DISSECTING ANEURISM, WITH A REPORT OF A CASE.

Dr. Magrath: I was very much interested in this case of Dr. Prescott's for the reason that it seems possible, not altogether probable, that the primary lesion in certain of these cases, certainly in this case, is in fracture of the elastic lamellæ. The relation of the elastic fibres to aneurisms as a class is still a matter of investigation. It is commonly taught that atheroma or the arterio-sclerotic conditions are preceded by some weakening of the middle coat, but I have seen a certain number of instances in which there is undoubtedly some weakening of the subendothelial connective tissue. In this case there is no question at all of fracture of the elastic lamellæ. The question of whether or not there is antecedent degeneration seems yet to be in some doubt.

Dr. Prescott, in answer to questions, said: The patient was forty-one years of age. There was no history of syphilis, either acquired or congenital; no history of any sickness which could be selected as an exciting cause of the trouble in the elastic fibres. It seems to me probable that all the trouble dated from the attack in January, and that between January and April the new lining was formed throughout the whole extent of the first aneurism. It does not seem possible that it could be, but as I cannot find any history of any trouble before the first of January I am forced to that opinion. These appear to be cases of double aorta, and that was what I considered it when I first opened the aorta, in spite of the fact that the diagnosis of dissecting aneurism had been made. The reason the diagnosis of dissecting aneurism was made was, when Dr. Joseph Stedman was a young man one of the older doctors in Roxbury told him of a man who was taken ill in a similar way, who died almost exactly as this woman died, and in whom dissecting aneurism was found. There was no history of strain before the first attack, for she was sitting quietly in a car (there was no jolting), and the second attack occurred when she was walking leisurely on the street. The aneurisms which occur near the heart are more apt to be quickly fatal, but not necessarily so. To the finger there was no evidence of change in the radial artery. There was no arcus senilis.

The Chairman: I remember to have seen an abdominal aneurism in quite a young woman who used a sewing-machine.

Dr. Prescott: I cannot say this woman did not use a sewing-machine, but she was an artist, and probably did not use one very much. They were in well-to-do circumstances. Her father was a dentist, and while she was paid for some of the paintings, still she did not have to work for a living. Nothing abnormal as to the pulse was noted.

Recent Literature.

Manual of Clinical Chemistry. By Elias H. Bartley, B.S., M.D., Ph.D. Professor of Chemistry and Toxicology in the Long Island College Hospital. Philadelphia: P. Blakiston, Son & Co. 1899.

This manual contains a description of the chemical tests which every practitioner should be able to apply in the study of his cases, and enough of the chemistry of the secretions and excretions to make the understanding of these tests clear.

The work is very accurate, concise and systematic. In regard to some of the analyses given, there are methods which, to our mind, give more satisfactory results from the point of view of clinical work than those given by the author. The attempt to summarize the clinical aspect of the several diseases of the kidneys and urinary passages is not a very satisfactory one, and is, we think, a mistake, but on the whole the book is admirably suited for a laboratory manual.

The American Year Book of Medicine and Surgery. Being a yearly digest of scientific progress and authoritative opinion on all branches of medicine and surgery. Collected and arranged, with critical editorial comments, by nineteen collaborators, under the general editorial charge of George M. Gould, M.D. Illustrated. Pp. 1102. Philadelphia: W. B. Saunders. 1899.

As its name implies, this volume aims to be a critical digest of the best medical work of the preceding year. In general it succeeds in this aim, though the omission of meritorious work is apparent. To our mind, a year book of this character should, at least, mention all worthy work which tends towards the advancement of medical knowledge. With the growth of medical literature we are more and more in need of such summaries. Many of the abstracts are illustrated, and each general subject is introduced by a *résumé* of existing opinion, which are often short and possibly rather too general in their assertions.

The book is admirably printed, and is of unquestioned value for purposes of general medical information, for which it is primarily intended.

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THE NEW MASSACHUSETTS CHARITABLE EYE AND EAR INFIRMARY.

Both the State and the city have just cause for pride in this latest addition to their hospital buildings. On Thursday, March 9th, the new hospital on the corner of Charles and Fruit Streets was formally opened to public inspection. The interest which people are coming to have more and more in institutions for the care of the sick was again demonstrated by the large attendance at the reception, of physicians, and also of those who have only an indirect connection with medical matters. There were no formal exercises; the building from cellar to roof was simply thrown open to unrestricted inspection, and every attention was shown the inquisitive visitors by the gentlemen whose knowledge permitted them to act as guides.

Like most great institutions, the Massachusetts Charitable Eye and Ear Infirmary had a small beginning. The society from which it has grown originated seventy-five years ago, through the efforts of Dr. John Jeffries and Dr. Edward Reynolds. The Infirmary first occupied a single room in a building on Green Street. From this humble beginning, it has grown through years of usefulness to its present estate. Since 1849 the institution has been located in Charles Street in a building which, at first ample, has grown with time antiquated as a hospital, and inadequate in size, necessitating, in 1891, the incorporation of two neighboring dwelling-houses for the use of the aural department.

With the constantly growing reputation of the hospital and the great demands made upon it by the poor for daily and house treatment, the necessity for an entirely new building became apparent to the Board of Managers, and, as a result, the new building has been erected and equipped — a building so commodious and perfectly appointed that it will, no doubt, serve the needs of the community for many years to come.

We can hardly say too much in praise of the internal arrangement and equipment. We have here a modern hospital in the best sense of the word, where nothing has been omitted which could conduce to the welfare of the patients, and nothing added which can be regarded as superfluous. This stands as a monument to the untiring zeal and intelligent enthusiasm of the Superintendent, Dr. Farrar Cobb, who has devoted his energies to the accomplishment of this end, with a result which admits of but one opinion.

It is needless to say that the aseptic principle has dominated the internal construction. The sterilizing apparatus is admirable in arrangement and efficiency, and everywhere to the trained eye may be seen new ideas put into practical form, the better to attain the end of perfect cleanliness. The bowls are all of porcelain, in one piece, instead of the usual marble, and the plumbing fixtures are entirely of porcelain. The out-patient and house-patient departments of the hospital are entirely separate, although in the same building, inasmuch as the out-patients are treated on the first floor, while the three upper floors are devoted to the resident patients. Those with diseases of the eye are taken to the Charles Street wing, and those with affections of the ear to the Fruit Street wing. Owing to the general construction of the building, this means an absolute lack of confusion in the distribution of patients. A feature which deserves special mention is the isolation ward, entirely separated from the main building, and capable of accommodating those patients who are admitted with infectious processes, or who may develop such affections while in the hospital. This permits the careful treatment of a class of patients who hitherto have been unwelcome guests at any hospital, though most deserving of skilled care.

The kitchen arrangements, the apparatus for making ice, the pathological laboratory, the sun-room on the roof, and ingenious contrivances of all sorts to assist in hospital management, we merely mention in the hope that those interested will go and see for themselves.

We cannot too warmly congratulate the Board of Trustees and the medical staff on the completion of this most notable addition to our hospitals.

WATER-GAS IN ENGLAND.

The Parliamentary Committee appointed to investigate the subject of water-gas has made its report, from which it appears that a controversy is now taking place in England of like nature with that which disturbed Massachusetts some dozen years ago. It appears that water-gas has been introduced in England to a limited extent, and the small number of accidents is probably due to the fact that the proportion of this gas when mixed with coal-gas has usually been low.

The *Local Government Chronicle* of February 25, 1899, in commenting upon the report, says: "The dangers attendant on the use of gas which does not betray its presence by its odor are, however, so obvious that it is impossible not to regard with alarm the supply of such gas, pure and simple, or when mixed with ordinary gas in large proportions. The recommendation of the Committee, that it should be illegal to make and distribute for heating and lighting purposes any poisonous gas which does not possess a distinct and pungent smell, will therefore be generally recognized as essential to the safety of the community, as will also be their recommendation that so long as there is any water-gas in a gas supply that fact should be stated on every demand note. If gas consumers are to be exposed to danger by the supply of this gas it is only reasonable that they should be warned of its presence. It is also manifestly desirable that some restriction should be placed upon the proportion of water-gas which may be mixed with ordinary gas. The maximum proportion suggested by the Committee is 12 per cent., but they propose to leave it to the Central Department to determine whether a higher proportion may be supplied either generally or in any particular locality, and the conditions under which it may be supplied. The general impression which will be conveyed by the report will probably be that consumers will do well to regard with jealousy the supply of water-gas, of the existence of which many of them have hitherto been ignorant. We doubt whether the report will commend itself to gas companies and corporations. We should expect to find that it will tend to rouse suspicion in the public mind as to the expediency of supplying water-gas in any shape or form, and that it will make many people more desirous than ever of substituting the electric light for gas."

We may have occasion to refer to this subject at greater length on receipt of the full report.

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TWO NEW JOURNALS.

As an outgrowth of the development of the laboratory of the New York State hospitals, under the direction of Dr. Ira Van Gieson, a new journal has appeared. to be known as the *Archives of Neurology and Psychopathology*. In one sense this periodical, which will be published quarterly, is a continuation of the *State Hospitals Bulletin*. Its scope, however, is quite different, as well as its form. As stated by the editor in a note, "The archives will contain studies in abnormal mental life and their neural concomitants based on psychology, psychopathology, experimental physiology and pathology, cellular biology, pathological anatomy, comparative neurology, physiological chemistry, anthropology and bacteriology." This comprehensive scheme is one which Van Gieson elucidates at length in a paper in the first number of the journal entitled "Correlation of Sciences in the Investigation of Nervous and Mental Disease." In this first number is also a paper by Van Gieson and Sidis on "Neuron Energy," which will undoubtedly excite considerable criticism. In the succeeding number, which we have recently received, is an admirable review by Ewing, of our knowledge concerning the pathological anatomy of the ganglion cell, and a comprehensive bibliography of the same general subject by Jelliffe. The new publication is designed to appeal to the eye as well as the mind, and leaves nothing to be desired as regards paper, typography, cover, and esthetic form generally. If the later numbers fulfil the promise of these earlier ones, and we have no doubt they will, we most cordially recommend the journal to all those interested in a broad-minded spirit of research.

We have also received the first number of a German journal devoted to the interests of electrotherapeutics. Its full title is *Zeitschrift für Electrotherapie und ärztliche Electrotechnik*, edited by Dr. Hans Kurella in Breslau, with the co-operation of other well-known men. That such a journal will find its place of usefulness we do not doubt, but it can hardly hope for more than a limited circulation. We certainly wish it success, and trust it may prove an influence for good in regulating the careless and unscientific use of electricity in medical treatment.

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MEDICAL NOTES.

Appointment of Dr. G. S. Woodhead. — It is reported that Dr. German Sims Woodhead has been appointed professor of pathology at Cambridge University in place of the late Prof. A. A. Kanthack.

Coats's Prize in Pathology. — We learn from *Science* that it is proposed to establish, with the sum of $5,000, at the University of Glasgow, a prize in pathology in memory of the late Prof. Joseph Coats.

Capt. W. C. Borden Honored. — Capt. W. C. Borden, Assistant Surgeon, United States Army, stationed at Washington Barracks, Washington, D. C., has been elected professor of pathology and military surgery in the Medical Department of Georgetown University.

Recent Appointments. — Dr. Walther Kümmel has been appointed extraordinary professor of otology and laryngology at the University of Breslau. Dr. Czermak has been appointed ordinary professor of comparative anatomy, histology and embryology at the University of Dorpat.

A Demonstrator of Tropical Pathology. — Dr. H. E. Annett has, according to *Science*, been appointed demonstrator of tropical pathology in the newly-founded school of tropical diseases in Liverpool. Both Edinburgh and Aberdeen have taken steps to establish lectureships on the diseases of tropical climates.

Small-pox in Washington. — A considerable number of cases of small-pox, fifty-three up to March 9th, have occurred recently in Washington, D. C., under circumstances showing a wide spread of the infection throughout the city. One negro affected with variola applied for shelter at the police station during the recent cold weather, and a milder case was more lately discovered in a child attending sessions in one of the public schools. A number of cases have also occured in the smaller towns in the vicinity of Washington.

A Word to the Wise. — Apropos of our present agitation regarding the teaching of physiology in the schools, the following from the *Medical News* is worthy of note: "A school teacher at Port Allegheny, N. Y., the other day received the following note: 'My boy tells me that when I trink beer der overcoat vrom my stummack gets too thick. Please be so kind and don't interfere in my family affairs.'"

Illuminating Gas and its Dangers. — In an editorial communication in a recent number of the *Philadelphia Medical Journal* the writer concludes as follows: The gas companies seem to have three malevolent aims: (1) to ruin our eyes by gas which does not illumine; (2) to ruin our bank accounts by compelling us to burn great quantities of gas in the hope of lighting our rooms; (3) to ruin our health by vitiation of our atmosphere. If we are rebellious they propose actual death by asphyxiation.

Uniforms for the Tropics. — Reports from medical officers now in the tropics indicate the necessity for provision of some special uniform adapted to the needs of tropical service. While a marked improvement on the blue woollen uniform, the "khaki" uniform does not appear to be an unqualified success. The loose thin uniform of the Spaniards, giving a "seersucker" effect, with its faint blue stripes on a white background, appears to fill all the indications for the clothing of soldiers except that of durability.

Employment in Pinar Del Rio. — In providing employment for the needy in Pinar Del Rio a number of improvements in regard to the sanitary conditions are planned. Common laborers are to receive 50 cents per day, overseers and skilled mechanics $1.50 per day. In addition each man receives one ration per day. On rainy days, when work is necessarily suspended, the ration will still be issued to those reporting as willing to work, as also in the cases of laborers temporarily sick. Lazy or inefficient workmen are to be promptly discharged.

An Army Medical Officer honored. — Capt. H. C. Fisher, Assistant Surgeon, United States Army, now under orders to proceed from Plattsburg Barracks, N. Y., to Manila, was recently presented with a complete silver service by the officers and men of the twenty-first United States Infanty, as a mark of their esteem and appreciation. Captain Fisher remained with the regiment throughout the Santiago campaign and was unremitting in his care and attention to the sick, he himself contracting typhoid fever, which was at one time expected to terminte fatally.

Issue of Rations in Province of Pinar Del Rio. — A recent order affecting the Province of Pinar Del Rio, Cuba, is designed to prevent imposition by the unworthy in respect to the issue of rations by the Government. It is now required that the Alcalde of each district certify that the parties for whom they desire rations are personally known to them, are deserving, without means of support, and that the gratuitous issue of rations is necessary to prevent starvation and suffering. All cases so reported will be investigated by an officer of the United States, and in such instances as the facts do not appear to bear out the statements of the Alcalde, he will be required to pay the full value of the rations so issued, and for the second offence he may, in addition, be removed from office.

The United States Army Hospital at Savannah. — This hospital is now open, although not as yet entirely completed by the Quartermaster's Department. The plans consist of forty-seven buildings and are complete in all respects. It is built on the pavilion plan and has a capacity for 1,000 patients, the first 200 of which have recently been brought from Havana, on the hospital ship *Missouri*. This hospital was asked for by the surgeon-general in September last for use as a winter hospital. Its construction has been greatly delayed, however, by various incidents, among them being the existence of quicksands, which required a system of sewerage entirely different from that originally planned.

Hospital for Convalescents in Manila. — A hospital for convalescents for the troops in Manila has been established on Corregidor Island, commanding the entrance to Manila Bay, which at the date of last report accommodated 170 patients, and was capable of expansion to accommodate 400 or more. There are several buildings on the Island which can accommodate a considerable number of patients. Corregidor Island is about thirty miles from the city and daily communication with it is maintained by a small steamer, not the property of the Government. It is believed that residence on Corregidor will hasten the convalescence of patients, considering the refreshing sea air, less excessive heating and the absence of the naturally unhealthy surroundings of Manila. All in all, the health of the command at Manila must be considered as good. The sick list appears to be gradually decreasing. Among the diseases, typhoid fever and dysentery appear to have been the most fatal among the troops.

Typhoid Fever Near Havana. — Several cases of typhoid fever having developed in the Forty-ninth Iowa Volunteers near Havana, and that regiment being soon after sent out on a ten days' practice march, the sanitary inspector was required to see that all the tents, buildings and floors vacated by the regiment were sprayed or washed down on the inside with a 1–1,000 solution of corrosive sublimate and that all buildings and sinks were then whitewashed. The walls of the tents were to be kept raised from sunrise to sunset and the ground under the tents thickly sprinkled with freshly burned lime, the floors being moved out of the tents for this purpose. All blankets, bedding and clothing of cases of undoubted or suspected typhoid fever were to be soaked in a five-per-cent. carbolic solution, sunned and aired. A urine tub containing disinfectants was to be placed in the middle of each company street at retreat and severe penalties prescribed for urinating on the ground. The sinks were to be ditched to prevent the inflow of rainwater and their contents to be thoroughly disinfected.

APPOINTMENT. — Dr. Marie J. Mergler has been elected Dean of the Northwestern University Woman's Medical School, in place of Dr. I. N. Danforth, resigned. Dr. Danforth has been elected Dean Emeritus. The yearly course at this school has been changed from one of two semesters to one of four semesters of twelve weeks each, commencing the first of July, October, January and April. Three semesters will be required; the other semester will be optional. The number of regular students will be limited to one hundred, twenty-five in each class. They will be admitted to competitive examination for a place in the class only after having complied with the requirements of the State Board of Health.

SANITARY CONDITIONS IN HONOLULU. — The Acting Inspector-General reports that there is no system of sewerage whatever on the Island. The greater part of the city of Honolulu is on low and flat ground, is surrounded by a net work of ditches and stagnant pools, due to the cultivation of rice and bananas, and is unquestionably malarious. Camps Otis and McKinley are both in this malarious belt, and the former was on ground so low that water could be found anywhere at a depth of 3.2 feet. Camp McKinley was higher; but the highest point was less than fifty feet above the sea. Much of the country adjacent to the camps is objectionable, especially Kapiolani Park, intersected in every direction by canals of foul-smelling turbid water. At the time these camp sites were selected there was no site procurable outside of the malarial belt which could be reached by the transportation then on hand. As to the sanitary care of these camps, it is difficult to decide after this lapse of time exactly how perfect it was. The report of the local Board of Health is misleading, for all their reports are colored by the contention that a low lying city in a semi-tropical climate, without a single drain, surrounded by stagnant water and luxuriant vegetation, was perfectly free from typhoid and malarial germs, and to support this highly improbable theory they have systematically thrown all the blame on the military authorities, and the newspaper reports are largely derived from this source.

SMALL-POX IN SANTIAGO PROVINCE. — The disease is said to have been introduced by the Spaniards through the port of Puerto Padre and by them widely disseminated through two-thirds of the entire province. The medical inspector found small villages entirely deserted, having been wiped out by the scourge. Others were decimated, some had every house infected. In Holguin, shortly before occupied by 12,000 Spanish troops, the streets were impassable, the premises of houses choked with filth, and the death-rate, for this small town, of six to eight per day. In the Holguin Hospital, where alone over 500 cases were treated, the death-rate was 10.1 per cent. Only 2 per cent. gave a history of previous vaccination, and these gave no deaths. In type, 4 per cent. were hemorrhagic, 40 per cent. confluent, 33 per cent. discrete, and 23 per cent. semiconfluent. The treatment was largely symptomatic and the low mortality was largely due to the use of open Spanish sheds as lazarettos. The acme of the epidemic was in August and September, contrary to northern climates, where overcrowding occurs in winter. The work of disinfection was carried out largely by the United States troops, and it is of interest to learn that not a single soldier contracted the disease. From the town of Holguin alone over 10,000 cartloads of dirt and refuse were removed during its cleansing and disinfection.

DISPOSAL OF EXCRETA AT CAVITE, PHILIPPINE ISLANDS. — A detailed report of the unsanitary conditions existing in Cavite, on its occupancy by our troops, states that only two or three modern water-closets were found in the entire place, and these had the vent pipes carefully closed and discharged into sealed vaults, the medical inspector personally having seen explosions of gas drive the trap-water over the room. One closet was built over the sea wall, with holes in the floor and blocks of wood to keep the feet of the men out of the surrounding filth. In the majority of the Spanish barracks, and in all the houses of the town, the feces of generations had been carefully preserved in cemented vaults. Closets for the Spanish officers were modern porcelain affairs with a water flush, the water-tank requiring to be filled by hand, and with no gas vent to the trap. Feces, urine and water collected in the vault until the level of siphonage was reached, when about two-thirds of the contents siphoned off into a sewer, which emptied through the sea wall at the level of low tide into a recessant angle, where both wind and tide tended to retain all accumulations of filth. This sewer, only periodically flushed as it was, was connected directly by means of a grating in the floor with the inner court of the building, so that all sewer gas which was unable to enter the building by way of the closets entered by way of the court-yard.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, March 15, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 39, scarlet fever 20, measles 205, typhoid fever 3.

ORATOR OF THE YALE MEDICAL SCHOOL. — It is announced that Prof. Charles Sedgwick Minot, of the Harvard Medical School, will deliver the commencement oration of the Yale Medical School next June.

NEW YORK.

TWENTY-FIFTH ANNIVERSARY OF BELLEVUE HOSPITAL TRAINING SCHOOL. — On the evening of March 6th there was a festal celebration of the twenty-fifth anniversary of the graduation of the first class of trained nurses at Bellevue Hospital. The exercises were held in the large ball-room of the Waldorf-Astoria Hotel, and there were present over eight hundred nurses, representing twenty hospitals in the various boroughs of the city. Bishop Henry C. Potter presided. At the time the school was organized, when but six properly qualified women could be induced to enter it, the service in the public hospitals was in a deplorable condition, and most of the nurses were prisoners from the institutions on Blackwell's Island. Dr. W. Gill Wylie, who was then just completing his term as house-surgeon at Bellevue, became much interested in the project of a training school, and offered to go to Europe, at his own expense, to examine the methods of nursing in vogue there. He returned with an encouraging report and a long letter from Florence Nightingale, containing many valuable suggestions, and the class was started.

Gifts to New York University. — At a meeting of the Council of the University of the City of New York, held March 6th, Chancellor MacCracken reported gifts of money amounting to nearly $50,000 by six persons, who wished their names withheld; $20,000 of the sum thus contributed, it was announced, is to be devoted to the School of Applied Science, and a portion of the remainder is to go to the medical department.

Kipling's Physicians Congratulated. — During the above meeting a resolution was adopted extending the congratulations of the Council to the Dean of the Faculty of Medicine, Dr. E. G. Janeway, and his associate in the Faculty, Dr. Theodore Dunham, "upon the success which has attended their efforts to save to the cause of letters and of mankind the life of Rudyard Kipling."

The Loomis Laboratory in Court. — On March 7th the taking of testimony was begun before Justice Truax, in the Supreme Court, in the suit brought by the Medical College Laboratory of the City of New York (commonly known as the Loomis Laboratory) against the New York University for the recovery of the building and apparatus in East Twenty-sixth Street, valued at about $230,000, held by the defendants. These, it is claimed, were conveyed under representations as to their future management made by Chancellor Henry M. MacCracken, of the University, which, it is alleged, have not been carried out.

The New Building for Cornell Medical School. — In the meanwhile there have been filed at the Department of Buildings the final drawings and specifications of the elaborate new building for the medical department of Cornell University, most of the professors in which are formally connected with the New York University Medical School. The Cornell School, it will be remembered, is now carrying on its work in the Loomis Laboratory and the former Bellevue College building.

The Hundred Year Club. — A preliminary meeting of the newly organized "Hundred Year Club," having for its object the study of longevity, was held on March 7th. In its prospectus it is stated that its aims are: (1) To collect and maintain a library to contain everything of value written on the subject. (2) To concentrate the experience of mature analytical minds, particularly those who have attained excessive longevity, and learn the lessons therefrom. (3) To secure the essence of scientific knowledge in plain language, that the wonderful progress being made in this direction may be utilized by the people.

Death of Michael Kelly. — On March 6th died the oldest patient in Bellevue Hospital, or, more correctly, the patient who had been longest an inmate there. He was admitted on April 23, 1874, when he was forty years old. His disease was molluscum fibrosum, of such extent that the principal tumor is said to have weighed about twelve pounds.

Margaret Fahnestock Training School for Nurses. — A nurses' training school, to be known as the Margaret Fahnestock Training School for Nurses, is about to be erected in connection with the New York Post-Graduate Hospital. The building, affording accommodations for about seventy nurses, will be the gift of Mr. H. C. Fahnestock — its estimated cost is $100,000.

A Physician Killed by a Gun-shot Accident. — Dr. William G. Kahle, of Franklin, N. Y., attached to the Hospital Corps of the 202d Regiment, New York Volunteers, was killed by a gun-shot accident at Guanajay, Pinar del Rio, on March 7th. He was thirty-five years of age, and a brother of Dr. Benton T. Kahle, of Pittsburgh, Pa.

Miscellany.

A REMONSTRANCE AGAINST THE RECOGNITION OF "OSTEOPATHY,"

SUBMITTED BY DR. FRANK W. DRAPER, OF BOSTON, TO THE COMMITTEE ON PUBLIC HEALTH, MARCH 8, 1899.

Mr. Chairman and Gentlemen of the Committee: —

The bill which is the subject and occasion of this hearing is entitled "An Act to authorize the practice of Osteopathy."

Through some misadventure, a part of the title has been omitted. If it were all there, as it ought to be, it would read: "An Act to authorize the Practice of Osteopathy, to impair the Usefulness of the Statutes relating to Medical Practice, and to lower the Standard of Medical Qualifications in this Commonwealth."

I do not care to define or to analyze the motives which have actuated the petitioners for this legislation, nor am I inclined to use weapons of sarcasm or ridicule against the strange doctrines which have brought together this large assembly of credulous disciples. I am here for another purpose. It is because I recognize the bad effects of any such legislation as that which is asked for that I am before you, with these gentlemen with whom I am associated, to protest and remonstrate, with all the emphasis of which I am capable, against any favorable consideration of this bill by you as a committee, or by the Legislature.

My reasons for this remonstrance are easily understood and are readily stated.

Osteopathy, — what is it? Perhaps you, Mr. Chairman, and you, Gentlemen of the Committee, know. Diligent search has failed to find for me any nearer approach to a definition than that prodigious gem of a sentence which you have already heard, but which will bear repetition : —

> "Osteopathy is that science which consists of such exact, exhaustive, and verifiable knowledge of the structure and functions of the human mechanism, anatomical, physiological, and psychological, including the chemistry and physics of its known elements, as has made discoverable certain organic laws and remedial resources, within the body itself, by which nature, under the scientific treatment peculiar to Osteopathic practice, apart from all ordinary methods of extraneous, artificial, or medicinal stimulation, and in harmonious accord with its own mechanical principles, molecular activities, and metabolic processes, may recover from displacements, disorganizations, derangements, and consequent disease, and regain its normal equilibrium of form and function in health and strength."—*Boston Osteopath, February*, 1899.

In other words, after this excursion in a circle, Osteopathy is — Osteopathy, — and it is nothing else.

But whatever Osteopathy is or is not, a law like that which is outlined in this bill is clearly unnecessary and superfluous, from the point of Osteopathy itself. If this new thing is what it claims to be, if it is able to treat successfully the diseases which are named in its published promises, it does not need this recognition and special indulgence. If it has the health-giving and death-preventing principle which is alleged, it does not require any action by any legislature to develop it and give it nurture. If there is any virtue in it, the general medical profession will soon find it out and adopt it for the benefit of mankind, as it has taken vaccination, anesthesia, antisepsis, electricity and antitoxin, — none of which asked or required legislative help.

But if Osteopathy is not endowed with this vital principle, if, on the other hand, it is a business enterprise devised and carried on for the money that is in it, using a name as a trade-mark to deceive the credulous and tempt the unwary, seeking legislative recognition for a purely selfish end, then you, gentlemen, will know how to answer a petition which is as adroit as it is audacious.

The bill represents objectionable legislation from another point of view. It is a violation of the traditional and habitual practice in Massachusetts, in that it seeks to secure special favors for a class or sect. It is an attempt to bring in class-legislation and to obtain special privileges; and, if I know anything of the history of our Commonwealth, the sentiment of the people has always been against such a policy.

Think for a moment what would happen if you recommend the passage of this bill and by some ill chance the Legislature should enact it. Do you not see what a reprehensible precedent you have established? You have opened the door of opportunity to psychopaths, vivopaths, hydropaths and cosmopaths, and these halls will be invaded winter after winter with one tribe after another of pretenders who have just as good and just as strong claims as these Osteopaths. You have no right, Gentlemen of the Committee, to impose such a bequest upon your successors.

Then, too, this bill proposes to recognize a low and cheap grade of medical education, which is a shameful proposition in these days of enlightened progress. Such a scheme alone should kill this petition. You are asked to stamp with your approval a diploma which represents "short measure" in medical education, in both time and in quality of instruction. Compare the twenty months of Osteopathic study mentioned in the bill with the thirty-six months distributed over four full years which the fully organized medical school of to day requires of its students. Compare the courses of instruction in the Osteopathic Institute with the courses in any chartered medical school in this Commonwealth and see if the result of the comparison justifies you in lowering the standard of medical teaching in this Commonwealth.

Finally, any such legislation as this bill proposes will inevitably weaken and impair the usefulness of the law relating to registration in medicine. To seek to secure a representative on the Board of Registration because he is an Osteopath is a proposition too absurd to be considered. To have an examination devised with exemptions specially ordered in behalf of Osteopathy is equally preposterous and dangerous. The spirit and fundamental purpose of registration is to afford to the people of Massachusetts a guaranty, moderate and admittedly inadequate, it is true, but still a guaranty, that those who take upon themselves the responsibility of caring for sick or injured persons are not unworthy of confidence and are not ignorant to the point of untrustworthiness. Massachusetts, through her commission, asks of men and women who desire to be physicians, "Do you know enough for this? Are you fitted for this task? Are your qualifications adequate?" This is the simple practical test; and there is no reason under heaven, and this hearing has not suggested one, why Osteopaths should be exempt from its provisions. After the test has been met and the candidate for medical practice has satisfied the Board of Registration that he has the requisite qualifications, the State does not care what measures or methods he uses in the treatment of his cases. Every one of the more than 4,000 registered physicians in this State may use Osteopathy to his heart's content and no one will interfere. But if you recognize Osteopaths as a class; if you set them apart with your approval; if you permit them to practise under less rigid and exacting tests than the great body of medical men and women in Massachusetts, you damage irreparably the statute which is the public's only defence against quackery and pretension, and you admit the thin edge of the wedge which will work its destruction.

Gentlemen, the Commonwealth has no use for any school, class, sect or party of doctors who find it necessary to label themselves with a trade-mark to distinguish them as superior beings and to allure patients to their offices. For her and for the great body of the people the word *physician* is enough for every-day purpose. By far the larger part of medical men to-day, and I am proud to be of their number, get on perfectly well without resorting to any "pathy" whatsoever. They reject and repudiate even such terms as allopath and allopathy as meaningless nicknames. And they ask you in the name of qualified medical men, of progressive medical education, and of all people who need medical aid, not to grant this petition to the latest addition to the prolific brood of pathies, but to insist that these petitioners shall submit themselves, as physicians, to the full tests which the State desires to make of *all* physicians.

Obituary.

DR. HENRY P. QUINCY.

We regret to record the death of Dr. Henry P. Quincy, which occurred at his home, in Boston, on Saturday last, March 11th. He had suffered from ill health for several months, and had, in consequence, retired from his active pursuits. The immediate cause of death was an apoplectic stroke two days previous, which left him unconscious until the end. Dr. Quincy was well known to the students of the Harvard Medical School, having taught histology for the past twenty years without interruption. At the beginning of this long period of service, histology was barely recognized, the study was not required, the only equipment was a few inferior microscopes, and his only workplace was a corner hospitably allotted to him in the physiological laboratory of the old building on North Grove Street. When he retired, a few months since, he left a large, well-equipped laboratory; giving a required course in histology, attended by over two hundred students. The Medical School is indebted to him for long, faithful and valuable service.

Dr. Quincy was born in Boston, October 28, 1838, and was, therefore, in his sixtieth year. He married Miss Adams, who survives him, with two daughters. His house in Dedham, inherited from his father, was well known to three generations of Bostonians.

Dr. Quincy's character was a rare combination of modesty and kindness, with the many subtle and noble qualities which made him pre-eminently a high minded gentleman, who won the affectionate regard and respect of all who were brought into contact with him. He was always ready to serve and help others. In the laboratory he displayed remarkable skill and unlimited patience in all the technical work of histology, and his skill as a draughtsman was frequently called into the service of science by his colleagues. The Medical School possesses thousands of valuable microscopical preparations from his hand. But we, who knew him well, cherish most the memory of a pure, unselfish man, whose courtesy and good temper never failed — and as much as that we can say perhaps of no other man. C. S. M.

Correspondence.

THE OSTEOPATHIC BILL.[1]

Boston, March 11, 1899.

Mr. Editor: — Mechanical treatment of the external tissues of the body, whether by hand or by machinery, is excellent in its proper place and at the right time; but it has no place as a sole and exclusive treatment of diphtheria; and those who claim that it can cure this or any other acute infectious disease are a serious menace to any community, in so far as they may be able to convince others of such beliefs. The very meaning of the word "osteopathy," disease of bones, ought to satisfy any one that no treatment can be properly called by this name, any more than we would call the treatment of one disease by the name of another; as, for instance, the treatment of pneumonia by typhoid, which would be just as absurdly inappropriate. Disease of bone, or osteopathy, is a trouble requiring exclusively surgical treatment by knife and saw and chisel, and those who misapply such words should be judged accordingly.

What is this Star of the West, the horizon adorning, that has so recently arisen and sheds its beneficent rays to the coast of the Atlantic to enlighten the darkened understanding of us poor benighted heathen? What is this wondrous power that confers on its devotees such remarkable skill in discovering disease that the x-rays are thrown into the shade? It is a light that has shone from the beginning of time; it is nothing but the outcropping of instinct, for history tells us that some sort of rubbing, kneading and pressing of the body has been used amongst savage and civilized nations from time immemorial.

If the disciples of this so-called new science had taken the trouble to inform themselves of what was already known about massage and remedial movements we would never have heard of osteopathy. We must, however, thank them for their honesty in saying that their treatment is not massage; for, according to the quotations of Dr. Harvey from their writings, it is vastly superior, in that it takes but three to ten minutes, it is applied over the clothing, and the rubbing is always down. To call this massage would be a disgrace to massage. The hostler rubs his horses down; and if this bill becomes a law he ought surely to be hauled up for practising osteopathy without a license, and every mother who rubs down her child will be subject to the same penalty, to say nothing of the many masseurs and masseuses who are doing better work than osteopaths ever dreamt of.

In the *Medical Record* in 1879 I wrote as follows: The illustrious Sydenham (1624–1689) abandoned the routine system of practice prevalent at that time and based his own upon the theory that there is in nature a recuperative power which ought to be aided, and not opposed. An example of this is found by his saying that if any one knew of the virtues of friction and passive exercise, and could keep this knowledge secret, he might easily make a fortune. This is fully exemplified at the present day, for in every city of the United States, and indeed of the whole civilized world, there may be found individuals claiming mysterious and magical powers of curing disease, setting bones, and relieving pain by the immediate application of their hands. Some of these boldly assert that their art, or want of art, is a gift from Heaven, due to some unknown power which they call "magnetism," while others designate it by some peculiar word ending with *pathy* or cure; and it is often astonishing how much credit they get for their supposed genius by many of the most learned people.

Pressure, vibration and other ways of treating nerves externally were in use long before osteopathy was ever heard of.

That there should be an osteopath on the Board of Registration in Medicine is a suggestion too absurdly ludicrous for a moment's consideration. Such an unparalleled example of cheek was probably heard of but once, when James and John, the sons of Zebedee, asked to have a seat in heaven, one on each side of his Imperial Majesty. (See Mark x: 35.) Douglas Graham, M.D.

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[1] These cursory remarks were hurriedly jotted down for the hearing before the Committee on the "Osteopathic" Bill at the State House, but, owing to the lack of time, they were not read.

RECORD OF MORTALITY

For the Week ending Saturday, March 4, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Cerebro spinal men.	Scarlet fever.
New York . .	3,438,899	1291	397	70.00	20.23	22.40	6.30	9.10
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	187	52	5.83	25.97	1.06	1.06	1.59
Baltimore . .	506,389	205	53	4.90	14.21	.98	.98	—
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	125	37	9.60	18.40	.80	—	—
Washington .	277,000	112	33	7.12	18.69	—	3.56	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	67	16	4.44	25.16	1.48	—	—
Nashville . .	87,754	36	9	2.77	19.39	—	—	—
Charleston . .	65,165	27	4	—	11.11	—	—	—
Worcester . .	108,240	34	13	8.82	29.40	—	8 82	—
Fall River . .	95,919	38	19	2.63	13.15	—	—	—
Cambridge . .	89,724	26	7	—	22.70	—	—	—
Lowell . . .	88,641	26	7	3.85	30.80	—	—	—
Lynn	66,703	15	—	—	—	—	—	—
New Bedford .	66,340	20	7	—	10.00	—	—	—
Somerville . .	61,101	13	4	7.69	15.38	7.69	—	—
Lawrence . .	57,263	30	12	10.00	—	—	3.33	—
Springfield . .	56,501	19	7	10.52	26.30	—	5.26	5.26
Holyoke . . .	43,424	10	6	10.00	20.00	—	10.00	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem. . . .	36,883	12	2	—	—	—	—	—
Malden . . .	34,613	9	—	—	11.11	—	—	—
Chelsea . . .	33,468	14	6	14.28	—	7.14	7.14	—
Haverhill . .	32,022	14	—	—	14.28	—	—	—
Gloucester . .	30,589	10	1	20.00	—	—	10.00	—
Newton . . .	29,716	8	2	—	—	—	—	—
Fitchburg . .	29,438	14	4	—	14.28	—	—	—
Taunton . . .	28,167	10	1	—	10.00	—	—	—
Everett . . .	25,338	7	3	14.28	14.28	—	14.28	—
Quincy . . .	23,549	9	2	11.11	11.11	—	11.11	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	3	1	—	—	—	—	—
North Adams .	20,971	6	3	16.66	—	—	—	—
Chicopee . .	17,842	8	3	—	37.50	—	—	—
Medford . . .	16,511	2	—	—	—	—	—	—
Newburyport .	14,915	2	—	—	—	—	—	—
Melrose . . .	14,032	2	—	—	50.00	—	—	—

Deaths reported 2,423; under five years of age 714; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 165, acute lung diseases 500, consumption 295, diphtheria and croup 42, cerebro-spinal meningitis 27, scarlet fever 19, diarrheal diseases 18, typhoid fever 17, whooping-cough 17, measles 13, erysipelas 10, small-pox (New York) 1.

From diarrheal diseases New York 11, Pittsburg 3, Baltimore, Fall River, Lawrence and North Adams 1 each. From typhoid fever Pittsburg 5, New York 3, Baltimore and Washington 2 each, Boston, Nashville, Lowell, Lawrence and Woburn 1 each. From whooping-cough New York 11, Pittsburg 3, Baltimore 2, Boston and Gloucester 1 each. From measles New York 11, Washington and Melrose 1 each. From erysipelas New York 8, Boston 2.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending February 25th, the death-rate was 20.6. Deaths reported 4,505; acute diseases of the respiratory organs (London) 484, diphtheria 100, whooping-cough 97, measles 69, fever 44, diarrhea 29, scarlet fever 24.

The death-rates ranged from 12.9 in Norwich to 32.0 in Blackburn; Birmingham 18.8, Bradford 21.2, Croydon 18.4, Gateshead 19.1, Hull 17.1, Leeds 18.2, Liverpool 26.7, London 21.5, Manchester 25.8, Newcastle-on-Tyne 20.1, Nottingham 17.6, Portsmouth 15.3, Sheffield 19.6, Sunderland 23.3.

METEOROLOGICAL RECORD

For the week ending March 4th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...26	30.46	30	38	23	53	85	69	N.	S.	4	14	O.	R.	.05
M..27	29.76	44	53	24	97	58	77	S.	W.	21	24	R.	C.	.11
T...28	29.99	36	45	28	57	63	60	W.	S.	13	13	C.	O.	
W...1	29 87	39	47	31	79	46	62	S.W.	W.	9	9	O.	C.	
T....2	30.12	34	38	30	64	100	82	N.E.	N.E.	6	20	O.	N.	.25
F....3	30.15	32	36	29	100	95	97	N.	N.E.	15	10	N.	R.	.29
S....4	30.10	34	36	33	100	100	100	E.	N E.	10	11	R.	O.	.01
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING MARCH 11, 1899.

Rear Admiral A. S. Crowinshield, W. K. Van Reypen, R. B. Bradford, E. Stewart, G. W. Melville, P. Hichborn, M. T. Endicott, C. O'Neil, chiefs of Bureau in the Navy Department, rear admirals from March 3, 1899.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING MARCH 9, 1899.

Cobb, J. O., passed assistant surgeon. To proceed to Savannah, Ga., for special temporary duty. March 9, 1899.

Fricks, L. D., assistant surgeon. To report at Washington, D. C., for special temporary duty. March 4, 1899. To proceed to the Reedy Island Quarantine Station and report to the medical officer in command, for temporary duty. March 8, 1899.

Ramus, Carl, acting assistant surgeon. To proceed to the Cape Charles Quarantine Station and report to the medical officer in command, for duty and assignment to quarters. March 6, 1899.

Brook, G. H., hospital steward. To proceed to New Orleans, La., and report to the medical officer in command, for duty and assignment to quarters. March 9, 1899.

Brown, F. L., hospital steward. To proceed to the Cape Charles Quarantine Station and report to the medical officer in command, for duty and assignment to quarters. March 6, 1899.

Slough, Chas., hospital steward. To proceed to the San Francisco Quarantine Station and report to the medical officer in command, for duty and assignment to quarters. March 9, 1899.

Troxler, R. F., hospital steward. To proceed to San Francisco, Cal., and report to the medical officer in command, for duty and assignment to quarters. March 9, 1899.

APPOINTMENTS.

T. Farrar Richardson, of Louisiana; **W. W. King**, of Michigan; **Frank J. Thornbury**, of New York, and **Carl Ramus**, of Illinois, commissioned as assistant surgeons. March 9, 1899.

Wallace R. Hunter, of Pennsylvania, to be acting assistant surgeon, for duty at the port of Erie, Pa. March 9, 1899.

Robert F. Troxler, of Kentucky, to be junior hospital steward. March 4, 1899.

SOCIETY NOTICES.

Suffolk District Medical Society. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, March 22, 1899, at 8 P. M.

Papers: Dr. E. L. Twombly, "A Tumor of Labium."

Dr. F. H. Davenport, "Erosions of the Cervix."

Dr. F. W. Johnson, "Live Steam in the Treatment of Uterine Disease."

R. A. Kingman, M.D., *Chairman.*
C. H. Hare, M.D., *Secretary.*

The International Association of Railway Surgeons. — The date of the next annual meeting of this Association has been fixed for May 31st, June 1st and 2d, at Richmond, Va.

RECENT DEATHS.

Henry Parker Quincy, M.D., M.M.S.S., died in Boston, March 11, 1899, aged sixty years.

William Rutherford, M.D., professor of physiology in the University of Edinburgh, died February 21st. It may not be generally known that, in addition to much scientific work of importance, he was the inventor of the freezing microtome. He was a Fellow of the Royal Society of London. He has left his medical library and scientific specimens to the University of Edinburgh.

Alexandre Laboulbene, M.D., professor of the history of medicine in the University of Paris, has recently died, at the age of seventy-three.

BOOKS AND PAMPHLETS RECEIVED.

Seventh Annual Report of the Trustees of the Massachusetts Hospital for Dipsomaniacs and Inebriates, at Foxborough, for the year ending September 30, 1898.

Bericht über die Anwendung der physikalischen Heilmethoden auf der I. medicinischen Klinik und Poliklinik. Von Geh. Med.-Rath Prof. Dr. von Leyden und Dr. Paul Jacob.

The Early Diagnosis of Cancer of the Stomach. Diarrhœa and Bacteria. Caries of the Teeth and Diseases of the Stomach. By Charles D. Aaron, M.D., Detroit, Mich. Reprints. 1897–98.

Combined Typhoid and Malarial Infection. Report of a Case and Review of the Literature, with Special Reference to the So-called Typho-malarial Fever. By Irving Phillips Lyon, M.D., Buffalo. Reprint. 1899.

No Constitutional Power to Conquer Foreign Nations and hold their People in Subjection Against their Will. Speech of Hon. George F. Hoar, of Massachusetts, in the Senate of the United States, January 9, 1899.

The Practice of Obstetrics. By American authors Edited by Charles Jewett, M.D., Professor of Obstetrics and Diseases of Children in the Long Island College Hospital, New York. Illustrated with 441 engravings, 34 of which are in colors and 22 colored plates. New York and Philadelphia: Lea Brothers & Co. 1899.

Diabetes Mellitus and Carcinoma Uteri; Hysterectomy; Recovery. Torsion of the Pedicle of an Ovarian Tumor, with Acute Symptoms. Albuminuria during Pregnancy, without Convulsions of the Mother, but with Eclampsia of the New-born Infant. By Henry Kreutzmann, M.D., San Francisco, Cal. Reprints. 1898.

The Pocket Therapist: A Concise Manual of Modern Treatment for the Physician and Student (arranged Alphabetically for Ready Reference). By Thos. Stretch Dowse, M.D., Fellow of the Royal College of Physicians of Edinburgh; late Physician Superintendent, Central London Sick Asylum, etc. New York: Wilbur B. Ketcham. 1899.

Annual and Analytical Cyclopedia of Practical Medicine. By Charles E. de M. Sajous, M.D., and One Hundred Associate Editors, assisted by Corresponding Editors, Collaborators and Correspondents. Illustrated with chromo-lithographs, engravings and maps. Volume II. Philadelphia, New York and Chicago: The F. A. Davis Co. 1899.

Septic Bronchopneumonia. The Employment of Drugs in Diagnosis. Note on a Simple Method of Curing Aphonia. Radioscopy of the Lungs; The Danger of Misinterpretation by those who Employ this Method of Diagnosis. Gastrectatic Dyspnea. The Treatment of Asthma. By Albert Abrams, A.M., M.D., San Francisco, Cal. Reprints. 1898.

A Text-book of Mechano-therapy (Massage and Medical Gymnastics), Especially Prepared for the Use of Medical Students and Trained Nurses. By Axel V. Grafstrom, B.Sc., M.D., late Lieutenant in the Royal Swedish Army; late House Physician, City Hospital, Blackwell's Island, New York. With 11 pen-and-ink sketches by the author. Philadelphia: W. B. Saunders. 1899.

Lecture.

REMARKS UPON PHLEGMASIA DOLENS, OR MILK LEG, IN TYPHOID FEVER, ESPECIALLY AS OBSERVED AMONG SOLDIERS.[1]

BY J. M. DA COSTA, M.D., LL.D., HARVARD.

Gentlemen: — This morning I shall call your attention to phlegmasia dolens, phlebitis, or milk leg, in typhoid fever, especially as it is illustrated by cases in the ward occurring among soldiers. The first two cases among those who kindly consented to come before you were brought here from camp suffering from typhoid fever, and passed through the attack of fever without its being marked by any special event; but, at the end of the fever, they developed the peculiar complication, milk leg. I shall give you only a summary of the history of these cases:

Case I. A. E., twenty-one years of age. When admitted to the Pennsylvania Hospital, September 15th, he was brought from camp, where he had been ill for about six weeks. He stated that when his illness had lasted for two weeks, he got out of bed and was up for two days, during which time he had improper diet. He then was obliged to return to bed, and a few days later he had intestinal hemorrhages. He remained in bed for four weeks and slowly convalesced.

The temperature was normal on admission, the tongue clean. The heart, liver and spleen were not enlarged, nor did they show anything abnormal; at the base of the right lung, prolonged expiration, increased vocal fremitus and resonance were observed, but nó râles. The abdomen was tender all over; the urine contained no albumin and no casts. There was a bed sore over the sacrum. The patient was emaciated, anemic, and weak. The Widal blood-test gave the typhoid reaction. Double epididymitis appeared on the 24th, but soon yielded to warm applications. On the 30th he was allowed to sit up; a small abscess on his scalp was opened. He sat up daily until October 7th, gaining in strength and improving in appearance. At this date the scalp was well and the bed sore was smaller. He now developed pain and swelling of both legs; from the saphenous opening to the ankles the veins felt hard and were tender upon pressure. The symptoms having all subsided, a week later, October 15th, he was allowed to sit up for a few hours. The legs again become swollen and edematous; he had prickling sensations in the feet, and there was also a sense of numbness.

October 31st. He has been in bed since the last note. The bed sore is entirely well. As soon as he resumes the erect position the edema in the feet returns. The temperature is always normal. Since October 8th he has been taking the fluid extract of ergot, half a drachm, three times a day, and elevation of the limbs has been practised, with hot fomentations daily. These as well as the elevation of the limbs have been, indeed, insisted upon since the swelling manifested itself.

November 18th. He has steadily improved since the last note. Nitroglycerin, 1–100th of a grain, was substituted for the ergot.

November 23d. The Widal test was again made, with positive results.

November 30th. As he complained of headache, the nitroglycerin was discontinued. An oitment of belladonna and of camphor has been applied along the course of the veins. The legs now show no tendernesss above the lower third, the feet are still tender. There is no edema, and no cording of the veins. The patient is sitting up.

In the case just shown the phlegmasia dolens was double, and so it was in this case:

Case II. E. C. B., twenty-six years of age, was admitted to the ward October 26, 1898. He had been ill since the 1st, but had not felt quite well for two months previously. The prominent symptoms were fever, frequent chills, diarrhea, headache, vomiting, and pain in the back and limbs. He had no cough or nose bleed.

The temperature on admission was 102°, the pulse 96, the respirations 20. The pulse was regular but dicrotic; the mind was clear, the body emaciated. The tongue, tremulously protruded, was slightly coated. No symptoms referable to the heart and lungs were observable. The abdomen was scaphoid but soft, and was covered with rose-spots. The spleen was large and palpable, and pain was elicited by pressure. The liver was large, not tender; gurgling was produced upon pressure in the right iliac fossa. The urine contained no albumin or casts, was acid in reaction, and the specific gravity 1.030. The Widal test gave a positive reaction. After a bath the temperature fell to 97° in the axilla. The case ran its course as one of typhoid fever of average severity.

No new or remarkable symptoms were observed until the fortieth day of the disease, when the temperature went up to 101.6°. He had pains in the calf of both legs and along the course of the veins, but no tenderness in the thighs; the legs were tender and somewhat swollen. Treatment by elevation, hot applications, and rest in bed was pursued, and on the 15th of November the tenderness had nearly gone. There was no edema; he felt well, and was very hungry.

The Widal test, repeated on November 23d, again gave a positive reaction. The symptoms gradually disappeared, and the patient was discharged, cured, on December 1st.

Gentlemen, phlegmasia dolens in typhoid fever is not a common occurrence. Murchison, in his classical treatise, estimates it at one per cent. The general proportion of cases presenting the complication in this hospital is not more than one to two per cent. But among the 215 cases of typhoid fever in soldiers brought here we have had 30 cases in which it occurred, or almost 14 per cent., and of 135 cases that were under my direct control or came under my observation after the febrile process had run its course there were 18 cases, making a proportion of 13⅛ per cent. You may be interested to know that of these 18 cases, in three the left leg, and in two the right leg, alone was affected; in thirteen the disorder showed itself in both legs, beginning, however, generally on the left side when not manifesting itself simultaneously in both. But, without going further into this point, it is certainly remarkable that for some cause which I cannot adequately explain these soldiers have shown a much greater tendency to the complication of phlegmasia alba dolens in typhoid fever than we usually meet with in private or in ordinary hospital practice. We may, perhaps, attribute it to the fact that the venous system in the legs had become relaxed and distended by marching, and that this predisposed them to the disease. Yet, excepting some from Porto Rico, these soldiers came here from training camps, where marching, after all, was not excessive, though much more than men just from civil life were accustomed to. We must also, I think, take into account the gravity of the blood infection, for nearly all the cases occurred in those in whom the typhoid fever had been very severe.

As regards the time of the appearance of this complication, let me state that it occurred mostly at the end of the fever or in early, sometimes in late, convalescence. This has also been my experience in these wards for many years. I cannot recall a single instance in which milk leg occurred at the height of the fever. It is therefore a disease of the close of the fever, or of convalescence. In one of the cases which you saw, it came on at the fortieth day; in another, not before you (Wm. G. F.), on the fiftieth day; in another (E. V.) on the fifty-ninth day; in yet another it was not manifested until the ninth week of the disease. In two instances it appeared in a relapse, and in one of these (L. B.) before the relapse had terminated, and when the thermometer was still marking 103.8°. It may be preceded by a number of other complications, as it was in the case of F. R., who had had a double parotid bubo, then erysipelas, and who finally had phlegmasia dolens of the right leg before convalescence set in.

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[1] Clinical lecture delivered at the Pennsylvania Hospital.

As regards the symptoms of this condition, the earliest noticed are generally a rise in temperature and pain in the limb. and they are very significant. The rise in temperature is usually slight, but is apt to be repeated every time there is a fresh accession, for the disease often manifests accessions. Chills also happen sometimes, yet they are the exception rather than the rule. I find among my notes of cases seen in private practice several in which chills occurred repeatedly as preceding the phlegmasia dolens. Pain is almost invariably present; sometimes it is severe, oftener it is only a dull but constant ache. It is, for the most part, associated with tenderness upon pressure, and this tenderness shows itself first in the calf of the leg. The swelling of the leg is generally obvious, especially from the knee down, and the swelling is tense and hard, though there may be some pitting around the ankles and the calf. The appearance of the skin is pale or white, yet here and there an erythematous blush is seen, or even a small ulcer. Besides the feeling of tension, itching is at times complained of. As regards the condition of the veins of the limb, they are, or are not, prominent; it does not follow that they must be prominent. They are, or are not, tender; it does not follow that they must be tender, as is supposed. The veins most likely to be affected are the internal saphena and the femoral, and especially the junction of the internal saphena and the femoral. Sometimes the affection extends beyond this into the iliac veins, and may even pass into the vena cava. Personally I have never seen such an instance.

It will be naturally a matter of interest to you to know what symptoms are present in other parts of the body during the occurrence of the phlegmasia dolens. None that are striking or invariable. The urinary secretion is not materially affected, though it may become more scanty, and show small amounts of albumin. As regards the heart, its action is generally feeble, and murmurs of blood origin are found. But in all the 18 cases which I am making the basis of this special lecture, not in one were noticed any signs of an organic cardiac murmur, or markedly changed condition of the cavities or walls of the organ. I have made some observations on local temperature, the cutaneous circulation, and on sensation of the affected side, especially in the foot, but as yet nothing definite enough to record has resulted.

I called your attention to the fact that the left leg is more frequently affected than the right. The most likely explanation given of this is the one adduced by Liebermeister, that, owing to the left common iliac vein being crossed by the right iliac artery, the flow of blood in this is not so free as in the right. Thrombosis would thus occur much more readily in the left. The series here analyzed does not show nearly as many cases of the disease occurring on the left side as I have previously met with, or, to speak more accurately, it shows a much larger proportion of instances of double-sided affection than I have ever before seen.

Let us now ask what the pathology of the malady is. What does the painful swelling mean? The general view is that it means a phlebitis. So great an authority, for instance, as Sir James Paget[2] unqualifiedly promulgates this opinion, and I must confess that until I had studied the subject carefully for myself, and had seen a considerable number of cases, I held it. But I hold it no longer. The real pathology is, I think, a thrombosis, or clot, which forms in the vein, and which, it is true, may afterwards become complicated with a phlebitis or a periphlebitis; but this is not the first step in the morbid process. The affection comes on from the sluggish circulation of the infected blood. This is the explanation of the fact to which I have already directed your attention, that you do not always have symptoms of inflammation of the vein, as evinced by pain, tenderness and prominence of the vein. The disease is primarily, I believe, a venous thrombosis, and in this you have the cause of the swelling of the limb and of the other symptoms; the thrombus fills the vein, and obstructs the circulation. The pain in the limb is the result of the swelling; secondarily, a phlebitis may happen, and produce tenderness of the veins. Whether, as Haushalter[3] maintains, the thrombus is due to typhoid bacilli, that cause in themselves or by their toxins the clogging — and bacilli have undoubtedly been found in the clots — has not been definitely proved. It is to be hoped that this view will be found to be correct, as it will elucidate and greatly simplify the explanation of an obscure pathological point.

Most generally the thrombus is gradually disintegrated without serious symptoms, and the phlebitis, if any have occurred, slowly yields, or an adhesive inflammation results, and a collateral venous circulation is established. Cases have, however, been recorded in which pyemia resulted from the disintegrating thrombus, or death took place from embolism, by fragments being washed to the heart and into the pulmonary artery, as in the cases of Nauwerck[4] and of Bouley.[5] In the only fatal case that I have ever seen of phlegmasia alba dolens in typhoid fever death was the consequence of an embolic pneumonia following a thrombus in the right femoral vein. Gangrene is an occasional result of the state of the veins, and Dr. Keen, in his most interesting work on the "Surgical Complications and Sequels of Typhoid Fever," shows us that, when the gangrene results from venous obstruction, it is moist, while, should a clot form in the adjoining artery as the result of pressure, dry gangrene attacks the foot; and when we encounter a combination of dry and moist gangrene we may infer that we have thrombosis both of the arteries and the veins.

But all such consequences are very exceptional, and the cases recover in the vast majority of instances. Every one of the thirty cases we have had recently in this hospital recovered, and I have already told you that altogether I have met with but one fatal case. Yet the recovery is always slow; the clot is slow in disintegrating; the phlebitis, should it have occurred, slow in yielding. The leg, indeed, may remain swollen and clumsy for months, or readily become so after exercise. The superficial veins may show by their large and tortuous appearance how much the deeper venous circulation has been interfered with; or an adhesive inflammation that has been induced gives to the saphena or femoral veins a hard, corded feel. Even long subsequent to recovery the limb at times aches and it may never return to quite its normal size.

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[2] St. Bartholomew's Hospital Reports, vol. xii, p. 2.
[3] Merc. Med., September, 1893.
[4] Correspondenzbl. Schweiz. Aerzte., 1879.
[5] Progèrs Méd., 1880, viii.

You may recognize some of the consequences of the disease in the case I now bring before you, and in which the corded condition of the large veins in both legs is very marked, and especially so of the internal saphena vein high up just as it enters the femoral. There is very little difference between the right and the left side, and, until a few days since, there was also pain and tenderness. It may be years before complete recovery, allowing the unrestricted use of the limbs, occurs in a case like this.

Case III. E. V., twenty-two years of age, admitted on October 26, 1898. He had been ill in a camp hospital for twenty-three days prior to admission, with diarrhea and fever — from the history, undoubtedly typhoid fever. The temperature on admission was 98°, the pulse 86, the respirations 20. The patient was much emaciated, the skin was sallow, and the face marked with acne. The pulse was regular but feeble. Nothing abnormal was observed in the heart or lungs; there were no spots on the abdomen. The spleen and liver were both large and rather tender; the abdomen was not tender. No albumin, no casts, and no sugar were found in the urine, which was acid, 1.010, and cloudy.

On November 5th, having steadily gained in strength, he was allowed to be out of bed. He did well until November 23d, when, although he had been walking about very little, phlegmasia alba dolens appeared in both legs, preceded by only a very slight rise in temperature. There was tenderness in the calf of the legs, but no tenderness in the thighs; the pain in the legs was considerable. Some swelling and marked sensitiveness along the course of the veins of the legs below the knees were observed; there was at first no cording of the vessels. The treatment was the usual one of elevation, hot applications, and rest in bed, and was followed by good results. But cording of the veins, both in the thighs and around the knees, became manifest; and there was swelling of the ankles when the man stood on his feet.

I will show you yet another case of double milk leg, similar to the last one, except that there has been much more edema of the legs, and that the patient walks with difficulty unless the limbs are tightly bandaged. There is still, as you see, considerable edema from the legs down and the feet are pale and puffy; there is also pain in the leg and tenderness in the calf.

Case IV. Wm. G. F., admitted October 7, 1898, had been ill for twenty-one days at Camp Meade, with pains all over his body, occasional chills, fever and diarrhea. On admission the temperature was 99°, the body much emaciated; hebetude was marked. The pulse was rapid but regular. Many large typical rose-spots were found on the abdomen. The spleen was large and tender, the liver normal. The urine contained albumin, but no casts and no sugar; the specific gravity was 1.014. The Widal test was positive.

The patient did well, with no unfavorable symptoms, except that he worried very much over his condition. The temperature fell and became subnormal. On October 27th it was observed that the temperature suddenly rose to 102°, falling again to normal in the evening, without assignable cause. On November 5th both internal and external saphenas, and, to a less degree, the femorals, were tender, hard and prominent. Edema appeared in both legs, which were painful and swollen. No rise in temperature was noticed.

November 10th. The pain and swelling have much diminished, but the veins are still tender. No edema now exists when he is strictly confined to bed.

November 26th. The patient is stouter and much stronger. The veins are corded but scarcely painful. He can walk fairly well when the limbs are tightly bandaged but not otherwise.

Locomotion was still impeded when he left the hospital, and is likely to remain so for a considerable time.

Now, as regards the treatment. The first thing to do is to elevate the leg, endeavoring thus to restore the freedom of the venous circulation, and to relieve the pain and tension by the use of hot applications and of bandaging. The limb may be fomented with compresses wet with equal parts of hot lead-water and laudanum, or witch-hazel distillate. Generally, the lead-water and laudanum gives the most relief, and, though cold will answer, I prefer it hot. The bowels, if constipated, must be kept open by laxatives, although this is rarely necessary. If there be persistent pain, belladonna plaster in strips along the vein, or belladonna ointment applied in the same way, is often useful. The patient must be kept in bed — the rest must be absolute; indeed, the great aim in treatment is not to allow him to get out of his bed too soon. When he is finally permitted to leave it, and, indeed, prior, as soon as the fomentations are discontinued, the limb should be well bandaged, so as to give mechanical support to the veins. For a long time afterwards this mechanical support must be kept up, either by bandages or elastic stockings, in order to prevent swelling of the limb; in truth, it must be continued until the veins recover their tone and all symptoms of obstruction have disappeared. In cases in which the limb is painful and pale, and the circulation evidently impeded, and there is reason to think that a clot still exists, I have tried nitroglycerin, and I think it was of use. In some instances in which the veins remained tortuous, but there was no evidence of a thrombus remaining, I believe that I have seen benefit from ergot. Massage had better be avoided as long as there are any signs of venous disturbance.

Original Articles.

REMARKS ON INFANT FEEDING, WITH SPECIAL REFERENCE TO THE HOME MODIFICATION OF MILK.[1]

BY CHARLES W. TOWNSEND, M.D., BOSTON.

It is, perhaps, not a futile dream to hope that some day, as a result of artificial selection and feeding, it will be possible to produce a cow that will yield milk closely resembling in composition woman's milk. At the present day, however, cow's milk differs so widely from woman's milk that it is necessary to alter, or modify it, to use the technical phrase, in order to make it resemble woman's milk.

How can this modification be effected? It can be done at a milk laboratory or at home. The first involves considerable expense, and may be impossible in the absence of a laboratory. The second, or home modification, although so simple in principle, is, owing to the complexity with which it has of late years been presented in text-books and journal articles, often dreaded by the physician. Physicians revolt at doing an algebraic or even a considerable arithmetical sum at the bedside, and they also object to explain to the mother what they have been led to believe is a difficult and complicated process. On this account they either depend on a milk laboratory, or solve the problem of infant feeding by telling the mother to get such and such a patent food, and follow the directions. Many of these babies fed on patent foods go from bad to worse, although many thrive, as they are in reality fed on crudely modified cow's milk, with the addition of a food more or less useful or harmful as the case may be. A knowledge of home modification of milk would obviate this. This knowledge is necessary, even where the conveniences of a laboratory can be obtained, and where expense is not an object, for it is, I am sure, a fact that, even with patient and intelligent changing of the formula to suit the varying needs of the case, laboratory modification will not always agree. Infants are not machines, they are not all alike, and they will not always do what is expected of them. It has not infrequently happened to me that an infant will thrive vigorously on home modification arranged to duplicate the formula it was previously taking from a laboratory, on which it had not thrived. I have seen this so often that I am convinced that laboratory feeding is undesirable for some infants, although often of the greatest service. One explanation for this state of things is, I believe, to be found in the different methods of modification to obtain the same result. Laboratory milk is first divided into two parts by the centrifugal process, one containing practically all the fat, the other part nearly free from it. These two portions are then recombined together with water, sugar of milk, and lime water in proportions to meet the formula required. The mixture is then churned up by being carted about to be delivered. The mixture when examined at once under the microscope shows fat globules of normal size, but such is far from the case when the mixture is fed to the infant, as is shown by the large oil globule generally to be found floating on the top of the bottle of laboratory milk. No microphotograph is needed to show this. This of course subtracts a certain amount of fat the infant was intended to get, unless he swallows the oil globule also, as is frequently done. It may be questioned whether the digestibility of the rest is not impaired.

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[1] Read before the Boston Society for Medical Improvement, January 2, 1899.

In milk modified at home the cream is obtained by natural separation by standing — the gravity process — and the mixture is not churned up by carting about, and no oil globule is to be found on top, even where the milk is Pasteurized. I have been unable to produce the globule in this milk, even by churning it up by transportation — a fact which confirms the theory that the centrifugal process is a factor. During the summer, when the infant is many miles from the laboratory, it seems to me a distinct disadvantage and danger to depend on the laboratory supply, requiring two railroad transportations and four transportations by carts. Particularly is this the case when, owing to absence of express service on Sundays, it is necessary to have a double supply sent on Saturdays, and the infant is given milk on Monday morning some of which is three days old. This milk has to be sterilized. Now, although some babies will thrive for months on milk heated to 212°, a number will certainly fail to thrive, showing a lack of appetite, or of digestive power, or of both, and a few will develop scurvy. These objections do not hold in the case of Pasteurization, so called, especially if this is done at a temperature of 155° to 158° F. for twenty minutes, as recommended by Freeman, of New York, instead of 167°, an amount of heat which, although efficient for sterilizing purposes, does not change the taste of the milk. My own experience leads me to believe that if we can be sure of the milk being (1) fresh, and (2) obtained from cows proved free from tuberculosis by the tuberculin test, and (3) in the absence of any danger of contamination by typhoid or other infectious diseases, it is better not to artificially change this milk by either sterilization or even Pasteurization. If we are not sure of the milk in these three particulars it is wiser to Pasteurize it for twenty minutes at 156° F.

It is almost always possible to find in the country a herd of cows, perhaps of not the best breeds for infant feeding, that have been tested for tuberculosis. They may not drink filtered water, and the barn may not be all that is desirable from a sanitary point of view; yet, as the cows are out of doors during the summer practically all the time, and the milk can be obtained fresh twice a day, these points, it seems to me, are of slight importance. Wherever there are many summer residents, however, it is their plain duty to see that an ideal milk farm is established in their vicinity.

Now a few words as to the method of home modification. It is essential that the physician should know, in percentages, the amount of fat, sugar and albuminoids he is giving, in order to intelligently regulate the food. To do this in the manner advised by various writers on the subject requires so much calculation that there are very few physicians who will carry it out, and they not habitually. The following scheme, it seems to me, commends itself for its simplicity, and at the same time permits the physician to think in percentages:

In my service at the Children's Hospital I see a large number of poorly nourished babies, who are fed very improperly, either on patent foods, condensed milk or crude modifications of cow's milk. I refer to these cases here, as the fact that so many of these women of the more ignorant class are able to carry out the short directions given them in the hurry of an out-patient clinic for rational home modification is a good test, it seems to me, of the simplicity of this method. The results are certainly very satisfactory.

It is a familiar fact that in order to make cow's milk, which contains more albuminoids and less sugar than woman's milk, resemble the latter, it is necessary to dilute it with water and add the natural sugar of milk. The amount of fat being equal in the two at the start, it is evident that more fat in the form of cream is necessary after dilution. If the top quarter is taken from a bottle or can of milk that is allowed to stand from six to eight hours, this top milk will contain about 10 per cent. of fat. The percentage of albuminoids in this top milk is practically the same as in whole milk, that is, 4 per cent., and it will be seen that the relation between the fat and albuminoids is the same as in woman's milk, the fat being two and one-half times as great, that is, 10 to 4, or 4 to 1.60. The top milk can be obtained by siphoning off the lower three-quarters, or, still more simply, by pouring off the upper quarter; and I have been surprised to find that the cream obtained by the two methods is the same. Dr. Charles Harrington very kindly analyzed for me specimens of cream obtained in these two ways from the same milk. On one occasion the cream left after siphoning was only .07 of 1 per cent. richer than that obtained by pouring off the top, and on another occasion the decanted cream was the richer by .17 of 1 per cent. The results being the same, the decanting process is preferable, as it is much simpler, there is less difficulty in doing it accurately, and there is no siphon to be procured and kept clean.

I am also greatly indebted to Dr. Harrington for analyzing top milk on four successive days to learn its uniformity or lack of uniformity. This milk was from a herd of sixty cows, was milked in the afternoon, thoroughly mixed, put in glass quart bottles at 6 P. M., and brought twelve miles over the road in a wagon in the early morning. I poured off the upper quarter, or eight ounces, at 9 o'clock except on the last day when it was poured off one hour later. The analyses on four successive days showed the percentage of fat to be: 11.47, 11.35, 11.62 and 12.03, or an extreme variation of .68 or of only .27, omitting the one which stood one hour longer. With such uniformity, which I believe is generally possible by using the mixed milk of a herd of cows, the resulting mixture, as prepared for the infant, will show but little variation from day to day. Measuring the few ingredients is such a simple process, and in my experience is done so conscientiously by mother or nurse, that there is little chance for error here. I dwell upon these points, as a lack of uniformity has been urged as a strong argument against home modification and in favor of laboratory methods.

The top milk, water that has been boiled, sugar of milk and lime-water to neutralize and make alkaline the cow's milk, and in some cases the milk left after removing the top milk, are all the ingredients needed for preparing modified milk. With a 10-per-cent. cream it is evident that one ounce of cream in a twenty-ounce mixture would give a percentage of one-twentieth of 10 per cent., or one-half of 1 per cent. of fat. In the same way the percentage of albuminoids would be one-twentieth of 4 per cent., or .2 per cent. The percentage of sugar would be the same as that of albuminoids.

One more fact is needed before formulating a rule for home modification, and that is that an even tablespoonful of sugar of milk weighs three and one-half drachms and that each tablespoonful added to a twenty-ounce mixture raises the percentage of sugar by two per cent.

The rule to be remembered is this: Each ounce of 10-per-cent. cream in a twenty-ounce mixture represents .50 per cent. of fat, .20 per cent. of albuminoids and .20 per cent. of sugar; and each even tablespoonful of sugar of milk represents 2 per cent.

Thus if we order top milk four ounces, water fifteen ounces, lime-water one ounce, sugar of milk two tablespoonfuls, we are making a formula of fat 2 per cent., sugar 4.80, and albuminoids .80. If we order eight ounces of top milk, eleven of water, one of lime-water, and two and one-half tablespoonfuls of sugar of milk, we are making a formula of fat 4, sugar 6.60, albuminoids 1.60, and so on.

Of course this extremely simple method gives, as I have said, a fixed relation between the fat and the albuminoids, the fat being two and a half times as much as the albuminoids, the normal relation in human milk. If we wish to increase the albuminoids without increasing the fat, it is necessary to add the milk from which the cream has been removed or whole milk or top milk containing less than 10 per cent. of fat.

Thus it is often desirable in the case of an infant of five or six months or older to gradually increase the albuminoids without increasing the fat beyond 4 or 5 per cent. This can be done by pouring off more of the top milk, so that there is less fat in proportion, while the amount of albuminoids remains 4 per cent., as at first. Dr. Harrington kindly analyzed a specimen of top milk obtained by pouring off the upper half, using the same milk that gave about 11 per cent. in the upper quarter. This he found contained 7.18 per cent. of fat.

A mixture made up of half of this top milk and half water would give fat 3.60, albuminoids 2, while two-thirds of this top milk and one-third of water gives fat 4.80, albuminoids 3.66.

The sugar can be raised to any desired amount, remembering the rule already given, that each level tablespoonful added to a twenty-ounce mixture raises the amount of sugar by 2 per cent., the amount of sugar in the mixture already being the same as the amount of albuminoids.

On the other hand, a greater proportion of fat to albuminoids than the normal standard of woman's milk cannot be obtained at home without the use of thicker cream, but a resort to this is rarely necessary. In digestive disturbances where the fat, sugar and albuminoids all have to be reduced to minute quantities, the nutritive value of the mixture can be greatly increased without taxing the digestion, by the addition of raw white of egg. Thus one ounce of top milk, eighteen ounces of water, one ounce of lime-water and one and a half tablespoonfuls of sugar of milk, giving the formula, fat .50 sugar 3.20, albuminoids .20, can be made much more nourishing by the addition of the whites of one or two eggs, and will be retained where an increase of the milk would not be.

The amount, twenty ounces, is a convenient one, but it may be necessary for the nurse to make up half as much again or twice as much for the day.

In preparing the food for the day, after the top milk, water, lime-water and sugar of milk have been measured out and mixed together in a pitcher, it is well to have as many bottles as there are feedings, and pour the proper number of ounces into each bottle. Stoppers of cotton wool should be used, whether the milk is to be Pasteurized or not. The process is a simple one, needing in the nurse no more intelligence than is required in preparing the patent foods. For the physician the time occupied in describing the process and the amount of mental effort to calculate the proportions of the ingredients are both slight.

APPOINTMENT FOR GALLANTRY. — A son of Ex-Senator Dolph, of Oregon, now a private in the hospital corps of the United States Army, has just been appointed a lieutenant in the army by President McKinley. Private Dolph had been officially commended by General Otis for gallant service in action with the Filipinos in care of the wounded.

THE PROBING OF THE NASAL DUCT FROM THE NOSE.

BY ARTHUR J. SHAW, M.D., BOSTON.

RECENTLY, while making a brief study of the nasal cavity, the value of probing the nasal duct from the nose in some cases of obstruction of the ducts occurred to me.

Regarding the history of probing the canal from the nose, I am not acquainted with it, except to know that it was practised somewhat years ago; it may in truth be said, if I mistake not, to have become obsolete.

The object of this paper is to discuss briefly the anatomical points observed and to enter a plea for the further investigation of the results of probing the canal from below in certain cases of epiphora.

The opening of the nasal duct is at the anterior upper end of the inferior meatus. It opens at the apex, or near the apex, of a cone-shaped space, and is under the inferior turbinate body at its anterior enlargement. It cannot be seen, but a probe bent at the proper angle and passed properly cannot fail to enter it.

The measurements were taken in median sections through the nose on sections kindly loaned me, antero-posteriorly, so that the outer wall of the nasal cavity was open to examination.

First measurement. — From a point in the centre of the entrance of the floor of the nostril, backward to a perpendicular with the opening, measured five-eighths of an inch.

Second measurement. — The canal lies one inch to one and one-eighth inches in from the same point in the centre of the floor of the entrance to the nose; diagonally upward and backward.

Third measurement. — From the external bony tip of the nose it lies one inch in, and three-eighths of an inch below this point.

In the bare skull the length of the nasal duct from the bony entrance in the orbit to the inferior meatus is five-eighths to six-eighths of an inch. The angle of the probe should be about 90°, and the curve gradual. The probe length will vary a little with the measurements. The above measurements are only the average of a few adult heads, and may be regarded as only a fair average.

If one takes a skull that is cleaned one can pass this probe in the inferior meatus through the duct and it will emerge in the orbit. In the adult (not skeleton) this probe will surely enter two-thirds of the canal.

The method of passing the probe is to apply four per cent. cocaine on a piece of cotton beneath the inferior turbinate for ten minutes before probing.

Method of passing probe. — Hold the long arm vertically upward, and the short arm now lies parallel to the floor of the nose; now, after dilating the nose with the nasal speculum, and throwing a good light from the head mirror, pass the point in under the lower turbinate, then bring the long arm gradually down; the probe point slides well up under the lower turbinate and glides forward so that one can feel the probe as it slides into the canal opening; should it not go in directly, slide gently back and forth and it will surely enter. After it enters push it gently up the duct as far as it will go. The only harm an improperly handled probe can do here is to injure the canal exit: there are no other structures here; the wall between the antrum and canal would usually require considerable force to penetrate, and if penetrated would do no serious harm. The orbit is separated by considerable antrum space — one-half inch or more from the entrance of the canal; then, briefly, there are absolutely no structures one can harm.

It seems to me that in this method of probing we may have a method of great value in certain cases of epiphora, not relieved by passage of probe from above or in obstruction due to folds or hypertrophy of the entire nasal mucous membrane. No hypertrophy confined alone to the inferior turbinate can, I believe, obstruct this canal, and the operation of cauterizing the inferior turbinate for this ought to be discontinued.

One should never attempt to cauterize beneath the turbinate; great harm to the canal might result, and it is only by the employment of different sized probes that relief can be obtained; and it is the writer's belief that the future will prove the value of this long-neglected means for certain cases of strictures of the nasal duct.

Clinical Department.

A CASE OF ANCHYLOSIS OF THE JAW, WITH REMARKS ON THE ETIOLOGY OF THE DISEASE.[1]

BY J. ORNE GREEN, M.D., BOSTON.

IT has been my fortune to see five cases of this anchylosis. Three of these were in the service of Dr. A. T. Cabot, at the Massachusetts General Hospital, and I was asked to see them on account of marked deafness or other ear symptoms on the affected side. All three showed undoubted appearances of suppuration of the tympanum, with more or less destruction of the drum-membrane. My impression is that one tympanum was still suppurating, that the other two had ceased to suppurate but showed the loss of tissue produced by the disease. The exact appearances of the ears, although described at the time, were never placed upon the records, but the fact of previous suppuration of the tympanum is firmly fixed in my memory.

The fourth case was that of a boy, age eight years, who was under my care at the Infirmary in 1889 with chronic suppuration of the tympanum following scarlet fever, loss of the drum-membrane, and distinct enlargement of the anterior wall of the osseus meatus, narrowing the passage to about one-half its normal size; the jaws had been gradually closing for one to two years, without pain or other symptoms. I transferred the case to Dr. Cabot, who operated successfully upon the jaw.

The fifth case is the present one, a boy, age eleven, with large destruction of the drum-membrane of the right ear and chronic suppuration of the tympanum with caries of the aditus, following diphtheria and measles some nine years ago. There is distinct hyperostosis of the lower wall of the osseus meatus.

The jaws had been gradually closing for five years, and could be separated only nine millimetres. There was very slight general enlargement about the right maxillary articulation, but no pain or sensitiveness.

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[1] Read before the Boston Society for Medical Improvement, January 2, 1899.

The vertical motion was perfectly free as far as nine millimetres, any motion beyond that was impossible. The antero-posterior motion was much less than normal and the jaw was carried slightly towards the right side. The operation was on December 5th, and the extent of motion is now 32.5 millimetres — fully normal.

My first impression on examining these two cases and finding the marked enlargement of the bone of the osseous meatus was that the hyperostosis which was seen within the meatus also extended forwards, and locked the jaw in the glenoid fossa, for there was distinct, although limited, motion to be felt over the articulation on chewing, and the motions of the jaw, as far as they went, were perfectly free. A bony anchylosis, as shown at the operation, wholly disproved this theory, and I can only account for the movement, which could be both seen and felt, by the springing of the anchylosed joint. The absence of one molar and one bicuspid tooth on the affected side in the last case is probably explained by a trophoneurotic disturbance.

By the kindness of Dr. Mixter and with him the cases of anchylosis of the jaw at the Massachusetts General Hospital were examined, and it was found that eighteen cases were recorded, including the four of Dr. Cabot's spoken of above. In one of these the history is "scarlet fever, abscess in the neck and behind the left ear, which discharged bone, and deprived her of hearing on that side" — almost certainly a tympanic suppuration. In six of these cases, then, tympanic suppuration had existed. In five other cases the cause of the anchylosis is given as either scarlet fever or abscesses in the parotid region (conditions often accompanying tympanic suppuration), and in one of these it is distinctly mentioned that the patient suffered from earache. The causes of the remaining cases are given as noma, two; blow, two; operation on base of skull, one; ulcers on face, one; no cause, three. One of the two referred to a blow was one of Dr. Cabot's cases, in which I found the effects of an old tympanic suppuration. I find, then:

Suppuration of tympanum had undoubtedly existed (ears examined)	6
Suppuration of tympanum might readily have existed (ears not examined)	5
Noma	2
Ulcers on face	1
Previous operation on base of skull	1
Blow on chin	1
No cause	3
	19

In all of the first group of six the anchylosis was on the side of the diseased ear.

In the *Transactions* of the American Surgical Association [2] Dr. Cabot reviews the literature of anchylosis of the jaw, and has collected 24 cases besides his own: in 14 of these the cause is given as injury, four; scarlet fever, one; otorrhea, one; typhoid, one; extraction of teeth, one; suppuration in joint, one; scarlet fever, diphtheria and otorrhea, one; acute inflammation, one; fracture of jaw, two; measles, one; in the other ten no cause is assigned. Adding these to the preceding table, we have:

Suppuration of the tympanum had undoubtedly existed	6+2=8
Suppuration of the tympanum might readily have existed	5+3=8

Other causes assigned are:

Noma	2
Ulcers on face	1
Previous operation on base of skull	1
Blow on chin	1
Injury	4
Typhoid	1
Scarlet fever	1
Extraction of teeth	1
Suppuration of joint	1
Fracture of jaw	2
Acute inflammation	1
Measles	1
No cause	13

Omitting the cases where no cause is assigned, in 27 per cent. of the cases suppuration of the tympanum existed, and in another 27 per cent. it was very possible; while the next frequent cause mentioned (scarlet fever) is found in less than 20 per cent. of the cases. I cannot understand how a general disease like scarlet fever should always affect but one side and that always the side of the diseased ear.

All cases of both tables seem to have been unilateral except one reported by Gerster, which was bilateral, and except two or three cases of cicatrices from gunshot or other external injuries, the disease was a bony anchylosis of the articular surfaces.

It seems to me these figures suggest that tympanic suppurations may have an important bearing on the etiology of the disease in its obscure varieties. Certainly no one causative condition existed so frequently as tympanic suppuration, and from what we know of the extensions of tympanic infections within the bone there is nothing improbable in the tympanic disease involving the cancellated structure of the temporal bone and thence extending to the bone of the skull and glenoid fossa.

Medical Progress.

RECENT PROGRESS IN PUBLIC HYGIENE.

BY SAMUEL W. ABBOTT, M.D., BOSTON.

The following digest comprises mainly such material as has been published during the past six months. Important reports and papers issued during the earlier months of 1898 are briefly referred to or mentioned by title only.

THE MANAGEMENT AND CONTROL OF INFECTIOUS DISEASES.

Preventive Treatment of Diphtheria.

Dr. F. J. Allan, medical officer of health, at a meeting held in London in February, 1899,[1] stated his opinion that in large cities of Europe and America "diphtheria had become endemic, and the persistency of the organisms in the throat had more to do with the tendency to endemicity than the existence of such organisms in the earth. . . . More stringent measures should be taken to ensure the isolation of those affected and to maintain it till the organisms can no longer be found. The health officer should be notified by the hospital authorities when a patient is about to be discharged, in order that he could keep the person under surveillance. Dr. Allan spoke of the benefits of antitoxin in the most favorable terms, both as a therapeutic and as a prophylactic measure. He advised an immunizing dose of from 100 to 300 units, according to age. With the stronger preparations of serum the amount to be injected is now much less than it was in the first year of its introduction."

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[2] Vol. vii, p. 115.

[1] Sanitary Record, February 17, 1899, p. 141.

Diphtheria and School Attendance.

Mr. Shirley Murphy's recent report[2] gives prominence to the view that the prevalence of diphtheria is increased by school attendance. The experience of nearly every medical officer of health will furnish instances of this, and Mr. Murphy's exhaustive and careful analysis of the metropolitan statistics does not furnish statistical support to what has come within the experience of nearly all. The demonstration of the relation between school holidays and a fall in the amount of diphtheria was particularly striking, though it appears to a very unequal extent in different years. In this report Mr. Murphy has not only brought this aspect of the question up to date but has supplied some very interesting additional figures as to the altered age-incidence of fatal diphtheria plus croup. There has been a notable increase in the relative incidence of diphtheria mortality between the ages of three and fifteen years which did not appear before the period 1871–1880.

The comparison made in this report between diphtheria and other infectious diseases as to alteration in age-incidence is especially valuable. The general result has been that "there has been a tendency to relative increase of mortality in measles and whooping-cough from the age of three to ten, as in the case of diphtheria." There have been no changes in the age-incidence of scarlet fever.

In his concluding remarks Mr. Murphy emphasizes the important practical fact that "the system of notification supplies but a very incomplete record of the total number of persons actually suffering from the disease" and that it must be followed up by further inquiries. Among these, inquiries at school, and, whenever thought desirable, the taking of "cultures" for examination form an essential portion of our preventive armamentarium, and it is a mistake that the London School Board should still be in a position to obstruct this work. [In this regard the system of medical inspection of schools now in operation in Boston appears to be a decided advance over that of London. — EDITOR.]

Effect of the Use of Antitoxin upon the Death-rate from Diphtheria.

The evidence upon this point presented during the past year is chiefly cumulative, and is overwhelmingly in favor of the use of antitoxin as a therapeutic and as a prophylactic measure. The evidence is furnished mainly from its hospital use, but the figures presented by the Board of Health of Massachusetts are those of cases which occurred both in private practice and in hospitals, but chiefly of the former class. The general mortality from diphtheria and croup in the State for the four years 1891–1894 prior to the introduction of antitoxin into general practice was 28.3 per cent. of the reported cases during that time, but that of the three following years, 1895–1897, was only 16 per cent., while that of the persons reported as having been treated with antitoxin during three years was only 10.7 per cent.[3] Murphy, in his report upon the health of the City of London,[4] quotes similar figures; so also do the Imperial Board of Health of Germany.[5]

On the other hand, Kassowitz, of Trieste, inveighs against antitoxin in the strongest terms,[6] saying that the results of the use of antitoxin in Trieste furnish "a bloody illustration of Behring's claims with reference to the safe operation of antitoxin."

It is interesting to know how an intelligent layman views the subject from a purely statistical standpoint. With this object in view, the greatest living statistician, Körösi, of Budapesth[7] (who so very clearly demonstrated the value of vaccination from the statistical standpoint at the International Congress at Washington in 1887), critically reviews the statements of Kassowitz and shows their illogical character, since the value of the remedy is shown, not by the lessening in the crude mortality (the death-rate of a given population from a given disease) but by the decrease in the lethality, or ratio of deaths, to existing cases; and this had happened in Trieste as well as elsewhere.[8]

Insects as Transmitters of Infection.

Nuttall[9] (Berlin) experimented with common house flies, and believes that they may play a part in spreading the plague if they fall into food or discharge excrement on it. Living, infected flies, after confinement twenty-four to forty-eight hours in a clean apparatus, without infected food, were full of virulent plague bacilli.

Ants have the same power of spreading infection. He also concludes from experiment that cats, rats and mice of various kinds, guinea-pigs, rabbits, pigs, horses, monkeys, dogs, sparrows and a few wild animals may become infected with plague by inoculation, or feeding with infected material; but doves, some dogs, cattle, hedgehogs, otters, lizards and frogs are immune.

In a later paper he treats of the rôle of stinging insects in spreading infection, bedbugs and fleas being used for experiment. Those insects were conveyed immediately from animals which had died of disease to sound animals, but no infection followed. It was also shown that the source of infection is destroyed in these insects and that the death of the germs proceeds more rapidly in bugs with high temperatures, when these insects are most active and digesting rapidly. Although they may transmit by their stings the virus of anthrax, plague, chicken cholera, and even septicemia, still the author's conclusions warrant the belief that this occurrence very rarely happens.[10]

Koch's Statement Relative to Mosquitos and Malaria.[11]

"Among the many possibilities, two factors may be considered as vehicles of infection: (1) the transmission of the germ through the drinking water; (2) through the medium of the mosquito. The more I deal with this disease the more I incline to the view that the latter is the principal, and probably the only, vehicle. Wherever we turn we find tropical malaria and mosquitos together, at the same time and in the same place." He found no malaria in Chole, a small sea island on the East African coast, and he could sleep there without mosquito-bars.

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[2] Diphtheria and Elementary Schools. Report by the Medical Officer of Health of the London County Council, 1898, p. 36; also Public Health, February 1899, p. 305.

[3] Twenty-ninth Report of State Board of Health, pp. 598, 628.

[4] Annual Report of the Medical Officer of Health of London, 1896, p. 39.

[5] Arbeiten aus dem Kais. Gesundheitsamte, 13, p. 254, 1897.

[6] Der Kinderarzt, 1898, ix, 197; also Berlin klin. Wochenschr., 37, 1898.

[7] Therapeutische Monatshefte, Berlin, September, 1898.

[8] See also Schanz: Der Werth der Statistiken über die Serumtherpie der Diphtherie. Therapeutische Monatshefte, 1898.

[9] Centralblat f. Bakt. parasit. und infek., 22, 4, 1897; also loc. cit., 23, 15, 1898.

[10] See also paper by Joly, in Thèse de Bordeaux, quoted by Medical Review of Reviews, October, 1898, relative to spread of anthrax and other infectious diseases by flies.

[11] Arbeiten aus dem Kais. Gesundheitsamte, 14, pp. 299–303.

He lays down two rules for malarial climates: "(1) Drink only boiled water; (2) sleep under a tight-fitting mosquito-net. I say expressly, a 'tight-fitting net,' since such nets are usually full of holes, or loosely fitted and consequently useless."

Notification of Infectious Diseases.[12]

This paper contains some very good suggestions concerning the relations between health officers and private practitioners, with advice relative to the conduct of the former.

Notification and Registration of Sickness.

System proposed by Newsholme.[13]

The Control of Measles.

Dr. A. Newsholme,[14] Health Officer of Brighton, Eng., believes that the notification of measles would prove successful only under two conditions: (1) dual notification, both by physician and by parent or guardian; (2) only the first case occurring in a household within six weeks should be notifiable by the physician; but this exception should not apply to the householder.

Effect of Sanitary Conditions on Measles Fatality.

Cameron[15] concludes "that it would seem, so far as figures are of value, as if ample air-space, free draught, freedom from overcrowding and from effluvium nuisances, conduce most to recovery from measles.

Infection by Means of Dust.

Neisser[16] concludes by experiment that the following organisms cannot be carried to a distance of more than eighty centimetres at the ordinary rate of air-currents in houses: bacillus diphtheriæ, bacillus typh. abdom., bacillus pestis, vibrio choleræ, pneumococcus and streptococcus pyogenes. Dust infection under the same conditions is possible with staphylococcus pyogenes aureus, bacillus pyocyaneus, anthrax spores and bacillus tuberculosis.

Shell-fish and Typhoid Fever.

Newsholme[17] reports five cases of typhoid fever following the eating of mussels gathered from a polluted harbor. According to the same authority, from 30 to 38 per cent. of all cases of typhoid fever of local origin occurring in Brighton, Eng., from 1893 to 1897, were traceable to oysters or other shell-fish.

Typhoid Fever due to Impure Ice.

Dorange,[18] Military Surgeon at Rennes, France, reports an outbreak of typhoid fever due to the use of polluted ice in champagne at a banquet.

Gratuitous Distribution of Serum.

The French Government distributed in 1894, 1895 and 1896 124,920 doses of antidiphtheritic serum in the Department of France, with considerable quantities of antistreptococcic and antitetanic serum. The expense for the three years was about sixty thousand dollars.[19]

The Vaccine Laboratories of Germany.

Fully described in the Annual Reports of the Imperial Board of Health of Germany, entitled "Die Thätigkeit der im deutschen Reiche errichteten staatlichen Anstalten zur Gemeinung von Thierlymphe." Also in *Sanitary Record*, March 4, 1898.

DISINFECTION.

Disinfection with Formaldehyde.

Experiments with formaldehyde have been made by many observers during the past year.

Symanski[20] in experimenting upon the power of formaldehyde in the disinfection of rooms presents the following conclusions:

(1) The disinfecting power of formaldehyde gas made by an autoclave is greater than that furnished by Schering's apparatus.

(2) Neither apparatus gives certain results, even upon the disinfection of surfaces. Spores are not destroyed in any experiments.

(3) The very favorable results reported by other experimenters may possibly be attributable to especially favorable conditions which are not always met in actual practice.

(4) Formaldehyde in gaseous form does not possess penetrating power. In several of my experiments diphtheria bacilli spread on glass plates in thin layers were not killed but remained active.

(5) No injury was done to the goods experimented upon, except changes in the colors of certain goods dyed with aniline colors (red to violet).

(6) The higher the temperature and the drier the air of the room, the greater the disinfectant action of the gas. The author thinks his unfavorable results may be due to the use of a relatively moist room. (It was upon level ground and not surrounded by heated apartments.) Such rooms, however, may be met in actual practice, as in the case of basements and cellars below the surface. Such instances would diminish the value of the disinfectant and make it of no effect.

(7) The smell of formaldehyde remains often for days and is difficult to remove.

(8) Formaldehyde disinfection is more expensive and requires more time than other methods.

Formaldehyde and the Work of Public Disinfection.

The opinions of the numerous writers on the subject of the disinfecting value of formaldehyde may be ranged into two classes, and Abba and Rondelli[21] give a list of twenty-four names of those who, from the results of laboratory tests, have pronounced in favor of this compound, and of twenty-seven who have sought to disparage its usefulness. In order to obtain reliable results the authors undertook a series of experiments to test the properties of formaldehyde, used either in a small enclosed space with a capacity of about one-half cubic metre, or in larger apartments in the manner explained by reference to diagrams. Spores of anthrax, diphtheria, typhoid fever, and other bacilli were used as test-objects, under conditions which are fully set forth. The results are indicated by means of tables. In addition to the tests conducted in enclosed apartments, the authors experimented with an invalid carriage. The conclusions are arranged under six heads and embrace the following points: The disinfecting power of formaldehyde is intensified by increase of temperature and in the presence of dry air. In the gaseous state this compound possesses hardly any penetrative power. It does no injury to clothes, furs, linen, paper, photographs, and numerous other named articles; nor does it attack colors, except in the case of certain of the tar-derivatives, which change their tints in a similar way to fresh flowers. Certain precautions to be observed in the practice of disinfection with formaldehyde are laid down. The authors state that the points claimed as favorable to this compound must be discounted by certain specified drawbacks, and they do not consider that its use is to be preferred to disinfection by means of corrosive sublimate or steam, but in cases in which these methods are inapplicable it may be employed with advantage in public disinfecting stations.

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[12] Memorandum of Society of Medical Officers of Health of Scotland. Public Health, July, 1898.

[13] Journal of Royal Statistical Society, vol. lix, p. 27.

[14] Public Health, June, 1898, p. 308.

[15] Loc. cit., May, 1898, p. 274.

[16] Zeitschrift f. Hygiene, 28, 2.

[17] Public Health, August and September, 1898, pp. 390 and 423.

[18] Revue d'Hygiene, April, 1898.

[19] Twenty-seventh Report of Cons. Com. d'Hygiene, 1898, p. 305.

[20] Zeitschrift f. Hygiene, 28, 2, 1898, p. 237.

[21] Loc. cit., vol. xxvii, 1898, p. 49.

Anthrax, Disinfection with Formaldehyde in Rarefied Air; Hair and Bristles.

The occasional though rare occurrence of cases of anthrax in certain American towns where foreign hides are tanned or curled hair is manufactured renders the following results, obtained under the direction of the Imperial Board of Health of Germany, of special value.[22]

These experiments were made by Drs. Dunbar and Musehold, whose conclusions were as follows. The method of disinfection was the exposure of packets of hair and bristles in the iron disinfecting cylinders of Geneste Herscher & Co. to formaldehyde vapor — the air having been rarefied by exhaustion — as had been recommended by the Chemical Society of the Rhone factories (Lyons):

(1) The method of disinfection adopted by this Society, notwithstanding an exposure of eleven hours, and the development of formaldehyde in a ratio of thirty grammes to one cubic metre, failed wholly to disinfect packages of horsehair of only twenty centimetres (eight inches) in thickness, containing anthrax spores of definite resisting power, and is consequently of no use in the disinfection of bales of horsehair, and of horsehair piled up in bulk.

(2) This procedure was more effective with packages of Chinese bristles of about five centimetres in thickness, laid about loosely in the unopened paper packages, and also with bundles of bristles of ten centimetres in thickness, when these objects were not deposited in the upper part of the chamber — a sign that the gas is unequally distributed. We may therefore infer from the failure of this method that the procedure adopted by the Chemical Society of the Rhone factories for disinfecting bristles in large quantities is not effective.

(3) The faults of the procedure are due not to the insufficient disinfecting power of the formaldehyde but upon the fact that in the use of a vacuum the penetrability of the formaldehyde is not increased to the proper degree, and that the formaldehyde distributes itself unequally, collecting in the lower part of the chamber.

The Disinfecting Power of Common Soaps.

From the time when Koch[23] demonstrated the disinfecting power of ordinary soap many other observers (Behring, Reithoffer and Beyer) confirmed his observations.

Professor Serapin[24] has made at the University of Padua a further series of experiments to determine more exactly the conditions of its action.

He found that different kinds of soap varied very much in their disinfecting power, the best being the white and hard soaps of Marseilles and the marbled (Castile) soap.

In the absence of other methods of disinfection, soap forms a valuable resource. The solution should be about three or four per cent., and the temperature from 85° to 105° F. Clothing should be allowed to soak several hours before rubbing.

The author concludes from experiment that the so-called disinfectant soaps are not superior to other soaps as disinfectants. The soap should be very pure and should contain as little water as possible. The figures presented demonstrate the very great variation in disinfecting power of the ordinary commercial soaps. He attributes the diverse conclusions of earlier observers to the bad quality of the commercial brands upon which they had experimented.

Further valuable papers on disinfection are those of Peerenboom on the Disinfection of Closed Rooms with Formaldehyde, in *Hyg. Rundschau*, August 15, 1898; Disinfection of Books, Report on Use of Formaldehyde, New York City, Department of Health, 1898; also a valuable manual upon the general subject of Disinfection, published by the Board of Health of Maine, 1898.

INDUSTRIAL HYGIENE.

Dangers to the Health of Operatives engaged in the Gun-Cotton Manufacture.

The author, Robert Vogt,[25] was commissioned to inquire into the injuries caused to the health of the workmen at Worblaufen Gunpowder Works by the processes formerly employed there, as well as by the new process of manufacture, and to suggest any needful remedies. The gun-cotton is obtained by treating washed cotton with a mixture of one part highly concentrated nitric acid, and three parts of equally concentrated sulphuric acid. The manufacturing operations may be considered in three stages:

(*a*) Placing the cotton to be nitrified in the acid baths.

(*b*) Removal of the nitro-cellulose from the bath, and placing the same in the centrifugal wringers for the expulsion of the superfluous acid.

(*c*) Emptying out the contents of the wringers and conveyance of the gun-cotton to the washing-troughs, for the removal of the last traces of acid.

It is stated that fumes of nitric acid are copiously evolved, and permeate the whole factory throughout the process. The people engaged in the work are employed for ten hours daily, and earn good wages. The numbers and ages of the workpeople are enumerated, and it is pointed out that, without exception, they suffer from injuries to their teeth, and later from illnesses attributable to defective mastication. The author asserts that the acid fumes undoubtedly give rise to a new form of necrosis of the incisors, allied to the necrosis produced by phosphorus in the case of the match manufacture. The only plan of combating these dangers to health would appear to be the provision of efficient exhaust-ventilation, so as to convey away the acid fumes as perfectly as possible from the vicinity of the vessels from which they are given off. Workers who have lost their teeth should be supplied with artificial ones at the expense of the manufacturers, as the injury is a permanent one, and is caused by the specific processes employed in this industry.

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[22] Arbeiten aus dem Kais. Gesundheitsamtes, 15, p. 114, 1898.

[23] Mittheilungen des Kais. Gesundheitsamtes, 1881, p. 234.

[24] Annali d'Igiene sperimentale, 1898, 2, p. 199.

[25] Deutsche Viertelj. für öff. Gesundheitspflege, 1898, p. 566.

Phosphorous Necrosis in Match-making.

This subject has attracted the attention of the British Government,[26] and a commission was sent to France to study the subject in the factories of Marseilles and other cities, where cases of phosphorous necrosis are common. The following hygienic regulations are adopted: It is forbidden to take food or drink in the workshops. Those who wish to take a light meal are sent to a dining-room for the purpose, after following these instructions: (1) To leave their working clothes in the cloak-room; (2) to wash their hands in soft-soap and water; (3) to gargle the mouth with a specified gargle.

Dr. Oliver mentions, also, the necessity of greater care in the selection of employés; raising their age at admission to work; medical examinations at entrance; subsequent supervision; repeated dental examinations; personal cleanliness of workers; early suspension on appearance of ill health; improved methods of manufacture.[27]

Lead-Poisoning Among Printers.

Fromm[28] considers the question whether the lead is inhaled with dust, absorbed by the skin, or swallowed while eating with unwashed hands. He also cites several observers upon the examination of dust obtained from type-cases, walls, shelves and floors of printing establishments.

Sanguisico[29] presents the following percentages of sick persons and average days of illness as gathered from the statistics of the mutual insurance clubs of Italy, the observations being derived from nearly 29.000 persons.

	Percentage of sick persons.	Average days of illness.
Agricultural laborers . . .	38.8	9.1
Stone masons	30.1	7.1
Artisans	28.8	7.5
Porters	23.2	9.1
Shoemakers	26.5	7.2
Compositors	21.9	7.5
Factory hands	27.3	7.4

(*To be continued.*)

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RECENT PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

(Concluded from No. 11, p. 262.)

TREATMENT OF TUBERCULAR CUTANEOUS AFFECTIONS WITH TUBERCULIN R.

Bukovsky,[3] of Prague, has recorded his experience with twenty cases treated by this method. Fifteen cases of lupus of the skin with implication of the glands were so treated, seven of which were complicated with affections of the apices of the lungs or with scrofuloderma. There were two cases of scrofuloderma alone, two cases of tuberculosis verrucosa, and in one case the injections were made for the purpose of excluding a tuberculosis of the skin. The injections were made in the skin between the shoulder blades. There were no instances of inflammatory infiltration or of abscess at the site of the injections — a better showing than has been made by other observers. The injections were made on the average every second day; in some instances, where larger doses were used, or where there was great susceptibility to the drug, at intervals of from three to six days.

The action of tuberculin R. on the general system was found to be very variable, and not proportionate to the size of the dose and the extent of the tubercular process. There seemed good reason for the belief that this variability depended to some extent on the quality of the preparation. The general reaction did not fail to appear in a single patient who was really affected with any form of tuberculosis. The only case in which a general reaction did not occur was the one in which the injections were made for diagnostic purposes. Fever was a constant symptom of the general reaction. The evening rise of temperature continued after the injections were omitted. The fever was accompanied by acceleration of the pulse and respiration, and by headache and pains in the back and limbs, with loss of appetite. There were no changes in the urine. In one case there was an urticarial eruption, and in another a scarlatiniform rash. Examination of the blood showed a moderate leucocytosis. It could not be determined that the general condition was improved by the treatment.

Koch has declared that the local reaction is not a striking one as distinguished from that produced by the old tuberculin, and that in some cases it is not perceptible. Bukovsky found, on the contrary, that a local reaction took place in all of the nineteen cases, and that it was often of as great intensity as that caused by the old tuberculin. The time of the reaction averaged twenty-four hours, but in some instances it was as long as from two to three days. The local reaction consisted sometimes of a simple hyperemia affecting the tubercular foci, the cicatricial tissue and the adjacent normal skin. In other instances there was a moderate amount of inflammation followed by scaling, and in still other cases the stage of exudation and the formation of bullæ was reached, which left crusts and superficial ulcerations. Similar reactions were noted when the affection was on the mucous membrane. There was some swelling and pain in the glands, but these phenomena were not constant.

Koch believes that the therapeutic value of tuberculin R. depends upon the immunity against toxins, and also bacteria, that is conferred upon the system. But this can only be proved by a long-continued observation of the patient, and examinations of the organs continued over a long period. Koch proposed to shorten this period of waiting by control experiments with the old tuberculin. This was tried by Bukovsky in four cases, but with a negative result, as both a general and a local reaction occurred in all.

As regards a *cure:* this was attained in no one of the cases experimented on. In two cases the ulcers were converted into scars; infiltrations that before the treatment projected sharply above the level of the skin were completely absorbed, and miliary nodules were converted into atrophic scar tissue. In both of these cases the bodily condition remained good. In the rest of the cases no such favorable results were attained, and it was necessary to treat them subsequently

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[3] Archiv. f. Derm. u. Syph. November, 1898.

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[26] Parliamentary Report of Inspection, London, July, 1898.

[27] See also Revue d'Hygiene, August, 1898, p. 673, and Twenty-seventh Annual Report of Cons. Com. d'Hygiene publique, 1898, on the same subject.

[28] Hyg. Rundschau, 7, 10, 189.

[29] Gior. d. Reale Societa Italiana d' Igiene, 5, 1898.

by the old methods of cauterizing, curetting, etc. In some of these cases the most that could be effected by the injections was a certain sinking down of the infiltration, healing of small ulcers, and a tendency to more rapid cicatrization. In others the results were still less pronounced, and in some even there was no improvement whatever. Bukovsky concludes that all the good that was accomplished by injections could have been produced in much shorter time with other methods. In one case a recurrence took place while the injections were being employed. He regards tuberculin R., however, as a good method of diagnosing doubtful tubercular processes. In the case in which injections were made for diagnostic purposes alone there was no trace of a general or local reaction.

In the December issue of the same periodical [4] the results of the tuberculin R. treatment at the clinic of Bonn are given by Napp and Grouven, two of the assistants at the clinic. Doutrelepont himself had previously published a preliminary report, of which this paper is the amplification. As soon as tuberculin R. was put upon the market it was used at the Bonn clinic in all cases of lupus which agreed with the demands of Koch. Doutrelepont had previously made use of the old tuberculin continuously as an aid to operative treatment, and uses it still in doubtful cases as a diagnostic aid.

The results of the trial of tuberculin R. are given in a table in which thirty-nine cases so treated are incorporated. Thirty-seven of these patients had lupus, one multiple tuberculosis of the skin and one tuberculosis of the tongue. Two of these showed complications with bone and joint tuberculosis, and in three there was a tubercular affection of the lungs. In one there was tuberculosis of the genito-urinary tract.

On the whole, the general condition of those treated by this method was very variable, and not dependent on the physical condition or circumstances of the patient. Strong and well nourished people often reacted to each injection with malaise and pains in the head and limbs, without marked rise of temperature, while in other cases poorly nourished people and children showed few constitutional symptoms, even when there was a decided rise of temperature. In two cases serious symptoms of collapse were observed. Fever was found not to be in proportion to the amount of tuberculin R. injected, and it never lasted more than twenty-four hours.

Infiltrations at the point of injection were sometimes met with; slight infiltration with considerable frequency. Abscesses were never met with, and the infiltration disappeared after a few days. A slight loss of weight was observed in a number of cases.

In a majority of the cases treated by tuberculin R. operative interference was combined with this method at some period of the treatment. Thirteen of the cases, however, were not treated by operation and seven had no local treatment that could affect the result. In four of these seven cases no improvement was produced by the injections, unless the fact that during the months that they were under observation there were no recurrences, can be so regarded. Particularly good results were obtained in a number of cases treated at the same time with applications of corrosive sublimate solutions. The large doses recommended by Koch as necessary for the production of immunity were not as a rule used in these experiments.

Unfortunately the good results obtained from the use of the tuberculin R. injections alone were not lasting, and those obtained from combining them with operative measures only partially so. Only six of the thirty-nine patients treated had remained without recurrences up to the time of writing. The conclusion is reached, that with our present data we are warranted in claiming that tuberculin R., while incapable of producing a complete cure, has a decidedly favorable influence in combating the tubercular process, and if properly employed has no bad influence on the general system. To what extent it confers immunity cannot be decided from these experiments, since the large doses claimed by Koch to be necessary for this result were not reached. It is of value as an aid to rational local methods of treatment.

GENERALIZED VACCINIA.

Wetterer,[5] assistant physician at Lassar's clinic in Berlin, describes four cases observed by him, in which there was a general eruption of vaccination lesions. He observes that it is often a complication that leads to the occurrence of post-vaccinal eruptions, sometimes a local affection spreading from the point of inoculation, and sometimes a general manifestation arising from the entrance of poisonous matter into the blood.

The form that has been called by the French *vaccination généralisé*, which consists in the appearance of vaccinia pustules on the skin of people recently vaccinated, in the vicinity of the point of inoculation or on other portions of the body, is the one treated of in this paper. This form begins soon after the inoculation, either simultaneously with the first signs of reaction at the point of vaccination or soon afterward. The number of pustules, which appear as a rule first in the neighborhood of the point of inoculation, may be very large. Their arrangement is not very characteristic, but in appearance they closely resemble the pustule of inoculation. The diagnosis therefore is usually a simple matter, but cases may occur where it is easy to confound this eruption with other affections. Dauchez has declared that the eruption pustules are never found in the mouth, contrary to what we find in variola and varicella.

The whole process of generalized vaccinia is usually finished in from two to three weeks, and is accompanied by only a slight febrile disturbance, although a high temperature is occasionally encountered.

Jeanselme suggests two ways in which the vaccinia may become general: *first*, by the introduction of the lymph into the blood; *second*, by auto-inoculation; and this latter he considers the more common way. In the cases in which the eruption is developed with great rapidity, here and there over the body, with a considerable regularity, the vaccinia is probably carried into the circulation; in all other cases, when the pustules arise in crops, and differ in size and form, auto-inoculation is the more probable explanation. Wetterer regards the latter as the only method of production, from the fact that in all the authentic cases of generalized vaccinia to be found in literature there has been some other affection of the skin, such as prurigo, scabies, eczema, etc. He also lays weight on the manner in which the pustules appear — in crops — and on the fact that on parts of the body not accessible to the fingers in scratching the eruption does not appear. He thinks that the individual who has been vaccinated, and who is suffering from eczema or some other cutaneous affection, carries the lymph with the finger employed in scratching to other parts of the body, and where there is even a minute break in the skin an auto-inoculation is produced and vaccinia pustules appear. In this way the entire surface of the skin may be covered with the eruption.

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[4] Archiv. für Derm. u. Syph., December, 1898.

[5] Dermatologische Zeitschrift, July, 1898.

The first case reported is that of an infant of seven months, well nourished, who developed soon after birth a moderate eczema upon both cheeks. Five days after vaccination the pustules were well developed at the site of vaccination, and the infant was in apparently good condition. Suddenly, three days later, he was seized with vomiting and fever during the night, and the vaccinated arm and the whole face swelled rapidly. When brought to the hospital the child presented on the arms and the face very numerous pustules which were exactly similar to the vaccination pustules upon the arm. On the cheeks they had become confluent. Similar lesions were scattered over the body, and were especially prominent on the penis and in the folds of the anus. During the next few days new crops of pustules appeared in various places. After three weeks the child had completely recovered, nothing remaining except a few scars and the eczema of the cheeks that had been present before the vaccination.

The second case was that of a boy three years of age, who had had an eczema of almost the whole body since he was ten weeks old. He developed suddenly an acute febrile attack, with much swelling of the face, and a copious pustular eruption of the face, arms and legs that was in places confluent. The scalp also was affected. There were several successive outbreaks of pustules, accompanied by a rise in the evening temperature. The duration of the attack was about three weeks. It was found that the child had not been vaccinated, but had been in close companionship with his brother who had just been vaccinated, so that an opportunity was offered for conveying the poison by the fingers.

The third case concerned a child of eight months, who had a weeping eczema of both cheeks. A few days previously a sister had been vaccinated with good effect. The infant was suddenly seized with vomiting and fever, and on the following day the shoulders and face were greatly swollen, and covered with pustules of the character of those of vaccinia. The whole body became finally covered by the eruption, and the infant died a week later, after high fever and convulsive attacks.

The last case was that of a girl of six, who had been vaccinated in her first year without result. For some months the child had suffered from a pruriginous eruption which was called urticaria. Just before the child was seen she had been playing with a child who had recently been vaccinated. One morning the mother noticed several small red points in the middle of the left cheek, which speedily grew larger and were transformed into bullæ. There were some lesions also on the scalp and hands. When seen the child had on the cheek a collection of well-marked vaccinia pustules, and similar ones were scattered here and there over the body. The case terminated favorably. It is assumed that an auto-inoculation took place in this case also, a favorable opportunity being offered by the urticaria, which excited the desire to scratch.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, SECRETARY

Regular meeting Monday, January 2, 1899, the President, Dr. R. H. Fitz, in the chair.

ORAL COMMUNICATIONS.

Dr. C. H. Williams: I have here a section from an eye that shows very well a sarcoma that has begun to extend from the interior of the eye back into the optic nerve. It was taken from a child of one and a half years old, whom I first saw last April. At that time the right eye was apparently normal, but the left seemed to have no perception of light, there was no external evidence of inflammation, and the interior of the eye could not be seen on account of the opacity of the lens. When seen in August the eye had become considerably enlarged, red and painful, and was enucleated. It was supposed at that time the tumor might be a glioma, but the subsequent history of numerous metastatic recurrences, and the microscopical examination of the growth at the laboratory of the Massachusetts General Hospital, showed it to be a sarcoma.

Dr. Stedman reported a case of

SYMMETRICAL GANGRENE OCCURRING IN A GENERAL PARETIC.

Dr. C. W. Townsend read an article entitled

REMARKS ON INFANT FEEDING, WITH SPECIAL REFERENCE TO THE HOME MODIFICATION OF MILK.[1]

Dr. Rotch said that in regard to the mass of fibrin and oil globules which at times are found in the modified milk he had had a very careful investigation made at the laboratories in regard to the cause of this phenomenon, but had failed to get a satisfactory solution of the question. It has long been known that whole milk will present the same phenomenon, so that it does not seem reasonable to suppose that it is the separation and recombination which produce it. Then, again, it was found that where hundreds of tubes were sent out from the laboratories under the same conditions, containing the same mixtures and on the same days, the little masses would be found in a few sets of tubes and not at all in the rest.

All work done in the direction of exactness in home modification is valuable, as so many people are unable to get the laboratory modifications. There are, however, certain of the finer percentages and certain combinations of percentages which cannot be obtained by home modification, and it is here that the possibility of obtaining exactly what the physician wishes from the laboratory was, in his opinion and experience, invaluable.

A very strong argument in favor of feeding with combinations from the laboratory is that the cream obtained by the separator is as fresh as the milk, while in home modification the cream used is comparatively old and contains many more bacteria; so that even if the mixture is sterilized the infant is fed on a far greater number of dead bacteria when home modification is used than when the food is sent from the laboratory.

Dr. Morse: It seems to me that Dr. Townsend has brought out an important point about the mixtures made from centrifugalized cream. I cannot help feeling that centrifugalization causes some changes in the fats which prevent them from recombining as they were before they were separated, and that on mixing cream which has been separated in the centrifugalizer we do not get the fat in the same minute subdivision in which it previously existed. Then I do think that in modified milk prepared from cream which has been separated in the centrifugalizer we are more likely to get large lumps of fat than in milk in which the cream has been separated by gravity. It is claimed that milk which has been sterilized or Pasteurized undergoes no changes during transportation. It certainly ought not to; but, in spite of the fact that it ought not, I am afraid that it does. Hence I feel that we should always endeavor, if possible, to feed our babies with milk the source of which is close at hand. It seems to me that as regards the cooking of milk we stand between two fires. On the one side we have certain changes produced in the proteids by heat which we ought to avoid if possible; on the other we have the changes produced in milk by bacteria, which we also wish to avoid — which, in fact, we must avoid. It seems to me, therefore, that we have got to decide in each individual case according to the conditions under which we are working whether we shall cook or not.

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[1] See page 275 of the Journal.

During the past summer I saw an infant with Dr. Edward Reynolds with regard to its feeding. The grandmother of the child remarked incidentally that she had always had great success in feeding babies and had often succeeded where physicians failed. As we expressed interest she volunteered to tell us her method. She then produced a card which she had received from a physician in Paris about forty years ago on which was given a method for home modification based on top milk, ordinary sugar and water. The modifications varied both as to quantity and quality according to age. I figured out several of these modifications and found that they corresponded very closely to the mixtures which we now use for babies of various ages. Now as to Dr. Townsend's method for home modification: It seems to me that it will give very erroneous results, because his premises are wrong. He assumes that his upper quarter contains 10 per cent. of fat. While that is true in a general way for milk set for six hours, it is not true for milk set eight, ten or twelve hours. In that case the percentage of fat will be much higher, 12 per cent. to 14 per cent. Thus in all his formulæ he is getting a higher fat in proportion to the proteids than he thinks. I was much interested in his statement that home modification does give fairly accurate results, as shown by the analyses of Dr. Harrington. As to Dr. Townsend's method of figuring, I think if any of you will take the formulæ given for the home modification of milk in Dr. Rotch's "Pediatrics" you will find that this is the method on which those formulæ were made. To show, too, that Dr. Townsend is not the only man who has figured out that method of home modification I have here in a notebook some formulæ given me about a year ago by Dr. Millett, of Brockton, who has been much interested in the feeding of infants. According to Dr. Millett's figures, in a twenty-ounce mixture an ounce of the upper one-quarter gives 0.5 per cent. fat, 0.2 per cent. sugar, and 0.2 per cent. proteids, while an ounce of the lower three-quarters gives 0.2 per cent. sugar and 0.2 per cent proteids. A sugar measure (three and three-eighths drachms) is equal to 2 per cent. This, as I understand it, is exactly the same method as that which Dr. Townsend has just given. This method undoubtedly does give formulæ which are practically correct providing that the upper quarter contains 10 per cent. of fat and no more. It always, however, gives too low percentages of sugar and too high of proteids. One objection to this method is that it figures for a twenty-ounce mixture, and if you want to give odd amounts you have got to figure twenty ounces and then the other amount from that.

DR. BARTOL: There are people who cannot afford to go to the laboratory. We must recognize that fact. There must be home modifications, and it appeals to me very strongly that the process shall be made as simple as possible, that the simplicity of the process be carried as far as is consistent with a fair amount of success in percentages. I think the mistake that a man makes who is not seeing babies right along is in turning to a text-book and looking up the age of the baby in one table, and the supposed size of his stomach in another, and the theoretical proportion of ingredients that should suit those two conditions in a third. I am more and more convinced that the modification of food should be suited to the individual and not to the text-book. In my experience, the safest way is to start not with what the table says such-and-such baby should have, but with a fairly weak food, and work up from that food, increasing each ingredient as you find you can, and getting thereby the food that suits that baby as shown by its weekly gain. It seems to me that gives you at once the key to the situation with your individual, and that you are perfectly safe in neglecting what the table in the book says. In the matter of calculating the percentages I think we all of us get into a method of our own, and probably like that better than one we are not used to. My own practice is not to calculate in bulk of twenty ounces, but to calculate in drachm units, and in that way it is perfectly easy to make a mixture of any number of ounces as the total for twenty-four hours, whereas if you deal only with twenty ounces it may cause difficulty in figuring to make just the total wanted. I find it much simpler to calculate in the smaller units than in the larger ones.

DR. ROTCH: The question of emulsifying the fats, or, rather, of the fats remaining the same, or recombining a separated milk, has been carefully tested and under the microscope the emulsion in the recombined milk has been shown to be practically the same as in the original milk. The laboratory stands in the position of the apothecary shop: we write for what we want in grains, ounces, etc., for the apothecary to dispense, and we do so in percentages for the laboratory clerks.

DR. TOWNSEND: I am glad that Dr. Morse has backed me up in thinking the centrifugal process was in some cases an objection. I have made a good many experiments with home modified milk made by the gravity process, and have been unable to produce this fat globule, which certainly is seen in a good many bottles of laboratory milk — in a great many I should say — and it needs no microphotograph to show it. It does not exist immediately after the mixture is made. A photograph at that time would show under the microscope normal globules, as Dr. Rotch has said, but some hours later, when the baby gets the mixture, the globule is often to be seen with the naked eye.

Just what the cause of this is has not been definitely settled, but it looks as if the centrifugal process has something to do with it as well as the heating and the churning in carting the mixture about. The paper I have read was not for the purpose of running down any special process, for I took particular pains to say that milk laboratories are of the greatest value in many cases, but I do want to emphasize the point that, even with the most careful changing of the formula in the hands of competent men, it will sometimes happen that a baby does not thrive on laboratory milk, but will thrive on home modifications. Babies are not machines. They ought to thrive on laboratory prescriptions, but they wont do it in all cases, and I think we ought to be ready to cope with those cases and be able to use home modifications as well as laboratory modifications. I want, also, to emphasize the point that I have fed a great many babies at a long distance from Boston on laboratory milk, and have done it for the most part successfully, still I have known of other cases as well as some of my own that have done badly, and it seems to me rational to suppose that we are running a great risk in taking the milk such great distances under so many varying conditions, and feeding it to babies, when we can obtain fresh milk near at hand, which can be modified at home. The other object of this paper was to give a simple method of calculating percentages for home modification. My experience with physicians as I meet them in practice is that a method involving much mathematics for calculating percentages they will not grasp, much less make use of. It seems to me that this method I have described is so simple and so easily remembered that it is worth having. As to the total amount, twenty ounces, I have found no difficulty in managing that, because if we want thirty ounces we can divide by two and add that to it, so as to give one-half as much again, or we can make one-fourth as much again, or twice as much, etc. It is not quite as easily manipulated as the smaller amounts Dr. Bartol spoke of, but the advantage of the ease of calculation of percentages it seems to me makes up for that. I should like to ask Dr. Morse where the paper is to be found in which the doctor he speaks of had calculated in very much the same way as I have.

Dr. Morse: He has not published it.

Dr. Townsend: I have not met him, so my idea has not come from him. Dr. Rotch's book was a great help to me, and he uses twenty ounces as a convenient total amount for the mixture, but he does not carry it out in the same way as I have through the various steps, neither does he give any rule for calculating percentages. I should also like to emphasize again the fact of the uniformity of mixed milk from a large herd of cows. The results that Dr. Harrington obtained were certainly very uniform on four successive mornings, and it seems to me if the milk of a herd of cows is thoroughly mixed it ought to be uniform; of course there will be some variation among the individual cows every day, but the mixed milk probably will be pretty uniform. I remember Dr. Rotch made a special point against home modification, in a paper he read in New York, on account of the lack of uniformity, but his percentages were from cream sent him by a dealer, and varied from 8 per cent. to 22 per cent.; this was of course the dealer's cream, and not prepared at home, so that it does not seem to me that was quite a fair way of judging of its uniformity or lack of uniformity. He also says in the same paper that "with great attention milk can be creamed in ten hours with some degree of regularity in percentage. But it needs attention every fifteen minutes during this time." This certainly has not been my experience.

Dr. Bartol: I would like to ask Dr. Townsend if those tests would not have been more valuable if they had been made a month apart instead of one day apart; that is to say, it would not of course be safe to assume that a fat test taken in August would do to go by in modifying milk in December.

Dr. Townsend: I think that is an interesting point. I think there is one thing to be remembered, that the normal woman's milk varies in the different parts of the nursing and from day to day to a considerable degree, and yet we know babies sometimes thrive on woman's milk very well, and it does not seem to me that a certain amount of variation from day to day is of such vital importance, although I believe this variation is very slight in properly prepared home modified milk.

Recent Literature.

Cyclic Law. By Thomas E. Reed, M.D. Middletown, Ohio. 1898.

This little book is not a digest or summary of the numerous and recent laws relating to the riding of bicycles, far from it; it is an attempt to set up a theory of the influence of the tides and other planetary phenomena upon the ordinary processes of birth, life and death. Like many other men who have written and theorized upon similar subjects from Hippocrates to Schenck, the author professes to have discovered the method of determining "sex at will." And yet the human race has kept on procreating boys and girls, in the ratio of about 106 boys to 100 girls, for ages past and will undoubtedly do the same for ages to come.

His conclusions are made from rather slender premises, if one may judge from the following: "From the 23d to the 28th of November, 1892, I attended five births, all of which were females. Forty weeks anterior to this we find the hours covering the retiring time of the masses were *negative*. In the same way, gathering groups of males and tracing back we invariably find the hours covering the same time to be *positive*."

The sexes are divided by the author into *positive*, or males, and *negative*, or females.

If the inhabitants of our villages are influenced in the matter of reproduction by such laws, what would happen in a town like Sandwich, where the tides upon the Buzzard's Bay shore are several hours behind those upon the Massachusetts Bay side? Possibly a race of hemaphrodites might be the resulting product. An ebb tide, with the author, is a *negative*, and a flood tide is a *positive*, phenomenon.

Accurate knowledge in regard to the tides does not appear to have extended so far as Ohio, if one may judge from the author's statement on page 84, since here he seems to pin his faith, not upon the very thorough and extensive publication of the U. S. Government upon the ocean tides, but upon Jayne's Almanac (published by a patent medicine house in Philadelphia), which, he says, "gives the best 'tide table,' of which I know."

The style is much like that of some sixteenth or seventeenth century treatise, such as may often be found in the bookshops of London.

System of Diseases of the Eye. By American, British, Dutch, French, German and Spanish Authors. Edited by William F. Norris, A.M., M.D., and Charles A. Oliver, A.M., M.D., of Philadelphia. Volume III. Local Diseases, Glaucoma, Wounds and Injuries, Operations. With 50 full-page plates, 186 text illustrations, pp. xii; 3 to 962. Philadelphia: J. B. Lippincott Company. 1898.

The third volume of this "System of Diseases of the Eye" will probably prove to be more popular than the two which have preceded it, insomuch as the subject is considered from a clinical standpoint. There are contained in this volume fourteen papers in all, which have reference principally to diseases and injuries of the eyeball and orbit, and the high order of merit which they possess makes it unfortunate that consideration for space prevents careful analysis of each. The paper by Dr. Joseph Schöbel on Diseases of the Retina, which has been very well translated by Dr. Arlt, is the longest and perhaps one of the most valuable. The subject has been very exhaustively treated and so presented to the reader as to give abundant evidence of the personal observations of the writer. Another paper, shorter than the preceding, which bears the title Staphyloma Posticum, and the Relationship of the Condition to Myopia, by Isador Schnabel, translated by Dr. Reed, of Philadelphia, will certainly be read eagerly by those who are interested in the subject of myopia. Priestly Smith has written a very practical and at the same time a very interesting paper on Glaucoma, and although much of the subject matter and many of the cuts recall to the memory an excellent monograph by the author upon the same subject about ten years ago, the present one is well worth careful reading. The paper by Johann Deyl, which treats of Diseases of the Optic Nerve, contains excellent descriptions of the appearances presented by the nerve while undergoing a state of inflammation. Dr. Robert L. Randolph has very thoroughly covered the ground in his paper on Sympathetic Ophthalmia and although he does not commit himself in any particular direction he gives the different theories advanced to explain the origin of the disease all the credit that they deserve. The other papers which go to make up this system are as follows: Diseases of the Orbit, by Dr. Charles S. Bull; Diseases and Operations upon the Eyelids, by Dr. George H. Harlan; Diseases of the Lachrymal Apparatus, by Dr. Samuel Theobald; Diseases of the Conjunctiva and Sclera, by Dr. S. M. Burnett; Diseases of the Iris and Ciliary Body, by Dr. Brailey; Diseases of the Choroid and Vitreous, by Dr. Hill Griffith; Wounds and Injuries, by Dr. Gruening, and a final chapter upon Operations, by Dr. Knapp.

Major William P. Bell, surgeon, 71st New York Volunteers, has been recommended for the brevet of Lieutenant-Colonel of Volunteers for meritorious services in the care of the wounded on July 1, 1898. Only four other officers of this regiment were deemed worthy of brevet by the board which is now at work on this subject.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MARCH 23, 1899.

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THE BEEF INVESTIGATION.

The "embalmed beef" controversy and investigation is now dragging tediously along and no news of importance may be expected before the final report of the Court of Inquiry, of which Major-General Wade is president. To the unbiassed observer, however, acquainted largely through personal experience with the merits of the case, it does not appear to be difficult to anticipate its probable findings.

That fresh meat issued to troops in the tropics had been previously treated with chemical preservatives has certainly not been demonstrated; that a certain proportion of such meat became unavoidably tainted before it could be used is probably true; that canned "roast" beef, really *boiled* beef, is intrinsically bad no one can believe, in the face of the tremendous and general consumption of such canned meat in the past, with no popular criticism of its qualities. Further, the use of canned roast beef in the army is no new thing. For years it has formed part of the "travel ration" issued to soldiers for trips where no facilities for cooking the regular ration were provided, and in such connection it appears to have given full satisfaction. As opposed to the many careful chemical analyses of this tinned beef and its general use under many and varying conditions, it would seem that the general statement, which has been made, that such a preparation contains little or no nutritive elements, is somewhat sweeping. In its actual food value it is probably little, if any, inferior, pound for pound, to the fresh, uncooked article.

It must not be forgotten, however, that an article of food may be eminently well adapted for occasional use in civil life, while totally unfit for military purposes. In general, food must have sufficient nutritive value, must be digestible, must be palatable and be appetizing in appearance. For military use it must have high nutritive value in proportion to its bulk and be also readily transportable. It must not be readily spoiled or liable to deterioration, and must possess, in addition, the important quality of not becoming distasteful to the palate by continued use. While all these qualities are present in the regular ration, such is not the case with regard to the canned roast beef. The latter is an article which has erroneously been considered a finished product and at all times ready for use — which it is not. As freshly opened, it is unappetizing in appearance, mawkish in odor, and some brands being put up with little or no salt, it will usually be insipid in taste. Murky in general consistence, the muscular fibres are coarse and stringy, and for a hot climate it presents far too great a proportion of fats. In hash, or prepared in the form of a stew with onions or other vegetables, it is admirable; eaten from the can with no further preparation it is undesirable, to say the least.

It is recognized that the human organism craves variety in diet — requires it. Not so many years ago the daily papers chronicled the doings of numerous individuals who, for wager, endeavored to eat one quail a day for thirty days. So far as we remember, all failed to accomplish their purpose. The constant presence of quail in the daily diet soon became disagreeable and at length actually nauseating. If for the delicacy, quail, eaten only once a day, there is substituted an unappetizing, greasy, tasteless preparation of meat, in a tropical country where the very soul revolts at heavy, heating food; issuing it without change, variety or addition for three meals a day for a period of about six weeks, it is not surprising that the troops before Santiago often threw it away unused. It is rather surprising that any one at all could be found to eat it under the circumstances. In the Santiago expedition the troops had only hard bread, coffee, occasionally canned tomatoes, and canned roast beef. The first two components of the ration are always acceptable, but the last cloyed the appetite with its deadly monotony, and by its unpalatability failed as an article of food and nullified the intention under which it had been issued. Rather than force down distasteful food many preferred short rations.

The Commissary Department had it in its power to issue canned corned beef or canned salmon in lieu of part or all of the canned roast beef and to so vary the diet of the soldier. It did not do so and in this it was reprehensible. There would have been no beef question had the commissary-general directed that no more than two days' rations of canned roast beef be issued alone, and that on long trips canned roast beef and canned corned beef should be issued on alternate days, and that canned salmon should be issued every fourth day.

It is evident that the Commissary Department failed to appreciate that an article in itself excellent under certain conditions of time and climate might not be acceptable as a constant diet, for considerable periods, in the tropics.

Had any one merely attacked the palatability of the canned beef as unfitting it for part of the ration of the soldier his position would have been unassailable. In impugning the food value and occasional utility of tinned beef, he runs counter to chemical analysis and to the personal experience of a large proportion of our citizens.

◆

THE SANITATION OF RAILWAY CARS.

Dr. Petri[1] publishes an ordinance of the Minister of Public Works of the Russian Government dated April 1, 1898, giving minute directions for the cleansing and disinfection of the railway carriages and waiting-rooms in Russia. These instructions included the following points:

I. (1) The character of the cleansing process; (2) the places and times for its performance (certain stations designated "Stations de nettoyage des trains" were assigned for the purpose); (3) the method of cleansing: (*a*) for carriages of first and second class; (*b*) for those of third and fourth class. Those of the first and second classes and the sleeping coaches containing water-closets, lavatories and upholstery require much more care than those of the third and fourth classes.

II. Disinfection. (1) The time and method; (2) the disinfectants and their preparation. The three prescribed disinfectants: milk of lime (or common whitewash); solution-of-potash soap — 3 parts of soft-soap to 100 of hot water; creolin and water 1 to 100. The carpets and upholstery are to be disinfected by steam at the designated stations.

It appears that the circumstances which gave rise to this order were a series of experiments which had been instituted by Dr. Petri and his assistants, Drs. Kolb and Friedrich, as early as 1892, in consequence of the arrival at Berlin of an unusual number of consumptives who had hurried thither for treatment, upon the announcement of Koch's celebrated discovery of tuberculin.

Cornet's experiments had already demonstrated the infectious character of the dust of ordinary apartments occupied by consumptives; hence a similar set of experiments were made upon the dust gathered from different parts of railway carriages. The small space occupied by each passenger served to intensify the danger, while, on the other hand, the short time of occupancy diminished it. The air, too, is oftener renewed than that of ordinary apartments.

The object of the experiments was to determine: (1) the presence of tubercle bacilli; (2) their relative number; (3) the best method of cleansing and disinfecting the cars.

The dust of the walls, ceiling and furniture of the cars was collected by means of small, slightly-moistened sponges, and guinea-pigs were inoculated with the same. The dust of the floors was deemed to be less dangerous than the fine dust deposited at higher elevations. Collections were made from first, second, third and fourth class cars and from sleeping coaches: 117 animals were inoculated and three of them succumbed to tuberculosis, these having been inoculated with dust from the floor of the sleeping-cars, the source of infection being the sputum upon the floor of the car.

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[1] Mesures contre le danger de la tuberculose dans les wagons de chemins de fer. Dr. Petri: Revue d'Hygiene, January, 1899, p. 19.

The examinations were made immediately after arrival at a terminal station, and 383 compartments in all were examined.

Many other pathogenic germs were also found which also proved fatal to animals employed in the experiments.

Number of Germs. — On the wooden floors germs were found as follows:

In	cars	of the	fourth	class,	12,624	per square	of 100	centimetres
"	"	"	third	"	8,481	"	"	"
"	"	"	second	"	4,347	"	"	"
"	"	"	first	"	2,583	"	"	"

The ceiling contained the least number.

III. Experiments were also made to determine the efficiency of proposed methods of cleansing and disinfection. Three coaches were first infected with different sorts of germs, and were then disinfected with soap and carbolic-acid solutions.

These experiments showed a diminution in the bacilli, and in the case of the material disinfected with steam the disinfection was complete.

The results of the final experiments were summarized as follows:

The system of cleansing, consisting in washing with a potash-soap solution (1 to 100) followed by an abundant rinsing or sprinkling with water, and then by dry rubbing, is sufficient to remove all disease germs from the top, sides and seats of third and fourth class cars (not upholstered), even though badly soiled. A similar cleansing with soap is sufficient to cause a decided reduction in the number of germs upon the floors of such compartment cars.

In the same journal [2] Dr. G. Lepage calls attention to the need of disinfection of hacks, omnibuses and railway cars in Paris, and the absence of such work at present. He urges its adoption by the authorities before the Exposition of 1900, and proposes a commission for this purpose.

MEDICAL NOTES.

The "Relief" Arrives at Gibraltar. — The army hospital ship *Relief* is reported as having arrived at Gibraltar.

Quarantine Station at Havana. — The War Department has decided to devote a sum not to exceed $330,000, to be collected from the tonnage duties at Cuban ports, to the establishment and maintenance of a quarantine station at Havana under the supervision of the Marine-Hospital Service.

Small-Pox and the Arkansas Legislature. — The accompanying item from a daily paper shows that it is possible to convince a legislative body of the value of vaccination, even if the argument has to be a rather forcible one. We note the absence of any "conscience clause" in the vote which was passed. Possibly a similar occurrence in the British Parliament might prove of value to the constituents of that body, by revealing its real state of feeling in regard to vaccination: "Members of the Legislature were panic-stricken yesterday when it was announced that physicians had diagnosed the illness of Senator Lankford as small-pox. After a half-hour's debate the House voted to vaccinate all its members."

The Volunteers to leave Cuba. — It is understood that all the volunteer troops now in Cuba, with the exception of the engineers and the so-called "immunes," are to be mustered out as soon as possible, the rigorous quarantine which is enforced against Cuban ports after May 1st, especially in the South, having largely determined the action of the War Department.

The Regulation of Marriage in North Dakota. — According to the *Philadelphia Medical Journal*, the so called "Creel Bill" to regulate marriage has passed the North Dakota Senate. If it becomes law no marriage license can be granted in that State unless applicants present a certificate from a legally established Board of Examiners showing that they are free from certain diseases, such as tuberculosis and hereditary insanity.

Burial of the Soldiers Killed in the War. — The Secretary of War has issued a call to parents and friends of soldiers who died in Cuba and Porto Rico who desire the remains to be buried at home to send their addresses to the Quartermaster-General, United States Army. To those expressing such desire the remains will be sent by express on their arrival in this country, otherwise they will be interred with all military honors in the Arlington National Cemetery at Washington.

Conditions in Matanzas Province. — As a result of a careful personal inspection of the interior of Matanzas province the chief surgeon of that department reports the existence of a shocking condition of affairs which can hardly be understood or appreciated without being seen. In a detailed report of the conditions existing in forty-five small interior towns visited by him we find that in a total estimated population of less than 85,000 there are at present estimated to be 21,430 reconcentrados, while the number of the totally destitute is reported as 20,570. Many deaths were occurring from starvation. In Sabanilla, a town of 4,000 inhabitants, four to five deaths from starvation occurred daily, while in the little town of Guira it is said that several deaths from this cause are daily occurring among its 800 inhabitants. Many of the towns had no physician to give medical aid, small-pox was prevalent and the number sick was alarming. Estimates furnished the inspector aggregated a total of 12,580 sick in the towns visited. While the United States Government is freely issuing rations to the deserving poor whenever it can reach them, lack of transportation and good roads make it difficult, if not almost impossible, to relieve the suffering in the interior. The male population still living is largely in the Cuban army. The women and children, weakened by disease and privation, without money or farming implements, are unable to till the fields. Want in the cities and along the coast line is now largely relieved, but the isolated interior is still under the scourge of famine and pestilence.

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[2] Revue d'Hygiene, January, 1899, p. 59.

Medical Department of the Regular Army. — It is understood that at present there are 618 medical men serving in the Medical Department of the regular army. Of these only 191, or an even 30 per cent., are commissioned medical officers of previous military experience. The remaining 427 are medical men lately in civil life, temporarily under contract, who are now competently qualified professionally but whose lack of long military experience, and indefinite status, largely render them incapable of satisfactorily coping with the various problems of organization, military sanitation and the control of men. The system of the employment of contract surgeons is, to say the least, unfortunate, and is based upon the popular idea that the civilian becomes the finished soldier by donning the uniform, and that the amateur is as competent as the professional in matters which have been deemed worthy of patient study and effort through many years of service by the latter.

Dr. Bransford's Heroism Recognized.— Passed Assistant Surgeon John W. Bransford, United States Navy, was advanced three numbers by the last Congress for heroism in the naval battle of Santiago. Surgeon Bransford was attached to the converted yacht *Gloucester*, which destroyed the Spanish torpedo boat destroyers, and having no wounded to demand his care he took charge of one of the rapid-fire guns with marked effect, his conduct eliciting the official praise of his commanding officer. Dr. Bransford had served eighteen years as an assistant surgeon in the navy but had afterward resigned and was in civil practice when the war broke out. He promptly offered his services and was given a volunteer commission. A bill to appoint him an assistant surgeon in the navy and place him on the retired list passed the Senate but failed to receive action by the House during the more pressing matters which occupied the latter part of its session.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, March 22, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 48, scarlet fever 18, measles 270, typhoid fever 4.

Bill for Recognition of Osteopathy not Favored. — The Committee on Public Health of the Massachusetts Legislature has reported adversely to C. E. Achorn's petition for authorizing the practice of osteopathy, to the extent of referring the matter to the next general court.

Animal Room at the Health Department Laboratory. — Hitherto the animals used for experimental purposes, chiefly guinea-pigs and rabbits, have been kept at Gallop's Island, and brought to the city only when needed. This has naturally led to considerable inconvenience, and a room has therefore been fitted up at the Sudbury Street laboratory for the accommodation of the animals. This will no doubt add greatly to the efficiency of the laboratory.

A Centenarian. — It is said that the oldest woman in southern Berkshire is Mrs. Almira Milligan, of Alford. She is one hundred and one years old.

NEW YORK.

A Law enforcing Professional Secrecy. — Governor Roosevelt has signed an amendment to the Civil Code which prohibits absolutely a physician from divulging any information concerning one of his patients, either before or after the death of the latter. Up to the present time the insurance law has permitted the physician to testify concerning the physical condition of a policy-holder.

The Board of Health and Antitoxin. — Drs. A. H. Doty, Hermann M. Biggs and John B. Cosby, of the New York Health Department, appeared on March 14th before the Assembly Committee on Cities at Albany in opposition to the Collier Bill, replacing the section of the Greater New York Charter which permits the Board of Health to authorize the sale of all antitoxin and vaccine virus which it collects in excess of the amount required for its own use. It was argued that there was no reliable producer of high-grade diphtheria antitoxin in the State except the New York City Health Department, and that no commercial house would undertake or continuously carry on such experimental researches as were necessary for a maintenance of the efficiency of the antitoxin supplied.

Typhoid Fever at Newark, N. J. — An outbreak of typhoid in Newark, N. J., has followed closely upon that at Paterson, and undoubtedly due also to the pollution of the Passaic River, which furnishes the water supply for both places. Up to March 17th 105 cases had been reported, and this is said to have been the largest number of cases of typhoid ever reported in Newark in the same space of time. On March 15th Health Officer Chandler sent out notices to all physicians in the city inviting them to avail themselves of the opportunity afforded by the bacteriological department of the Board of Health for having the Widal test applied in all suspicious cases of disease.

Death of Dr. James Wood. — Lieut. James Wood, Assistant Surgeon of the 202d Regiment, New York Volunteers, died at Havana Military Hospital No. 2, on March 3d. Dr. Wood was thirty years of age, and before the recent war practised at Newburgh on the Hudson, where he was a member of the local Board of Health and Assistant Surgeon of the Tenth Separate Company, N. Y. National Guard. He was highly esteemed as a sanitary expert, and in Cuba was appointed sanitary inspector at Guanajay and military governor of the hospital there. It is stated that he contracted malarial fever while engaged in his official work at Guanajay.

Death of Dr. John E. Ward. — Dr. John E. Ward died on February 25th at St. John's Hospital, Brooklyn. He was born in Epsom, England, in 1846, and studied medicine with Sir William Gull. He was graduated from the Royal College of Surgeons, and afterwards served on the Staff of Guy's Hospital, London. He then came to New York, where he remained until eleven years ago, when he removed to Coney Island, where he had since practised.

PHILADELPHIA.

A Curious Epidemic. — There is a small epidemic, in the northwestern portion of the city, of what is called spotted fever, but which does not have all the classical symptoms of cerebro-spinal fever. The City Health Board has decided to quarantine the patients, as in the cases of small-pox and scarlatina, pending a report from the pathologist as to the actual nature of the outbreak.

Resignation of Dr. Deaver. — We learn from the *Medical News* that the resignation of Dr. John B. Deaver, as Assistant Professor of Applied Anatomy in the University of Pennsylvania, has been tendered and accepted to take effect at the end of the present academic year. By this resignation the Medical Department of the University loses another eminent instructor and valuable member of its teaching body.

A Hospital Dinner. — The ex-residents and other medical officers of the Pennsylvania Hospital met on Saturday evening, the 11th inst., at the University Club, Philadelphia, and held their annual dinner. Dr. J. M. Da Costa presided and acted as toast-master; Dr. A. J. Scott was Chairman of the Committee. The speakers were Drs. Thos. G. Morton, John H. Packard, Horatio C. Wood, George C. Harlan, Thomas H. Andrews and Francis R. Packard.

Dr. Flexner Goes to University of Pennsylvania. — Dr. Simon Flexner, formerly Professor of Pathological Anatomy in the Johns Hopkins University, is now Professor of Pathology in the University of Pennsylvania. He has just been appointed to this chair, which was left vacant by the resignation of Dr. John Guiteras, who has gone to Cuba. Professor Flexner will enter upon his new duties on the 1st of next September.

Typhoid and the City Government. — Typhoid is moderately prevalent in the city and deaths are occurring every week, as the consequence of the criminal negligence of City Councils which, with a large appropriation at their command (over three millions of dollars) for the express purpose of improving the water supply, obstinately refuse to introduce a system of filtration which has been found so successful in London, Hamburg and other large cities. There is a scheme to lease the water-works to a syndicate, just as the City Gas Works have been recently alienated from public to private control. The prospects of such a syndicate for making money would be excellent.

Illness of Dr. Spencer Morris. — Dr. Spencer Morris, Professor of Medical Jurisprudence and Toxicology in the Medico-Chirurgical College, had an attack of apoplexy with left-sided hemiplegia a few minutes before he should have delivered his final lecture of the course, and was taken into the hospital. It was thought that the attack was induced by nervous excitement, as he was to be the recipient of a testimonial from the class in recognition of his long service to the college.

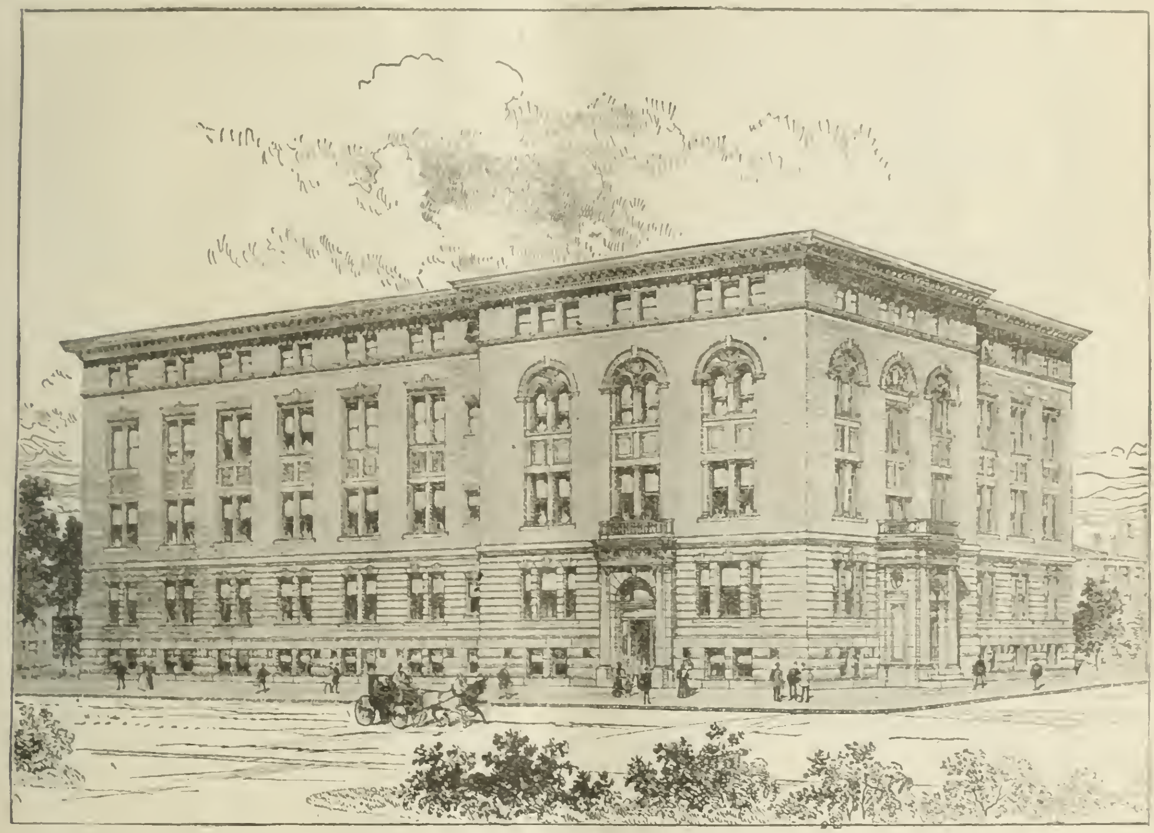
Miscellany.

THE NEW MASSACHUSETTS CHARITABLE EYE AND EAR INFIRMARY.

We have recently called attention to the opening of the new hospital building of the Massachusetts Charitable Eye and Ear Infirmary. The following description and illustrations, for which we are indebted to the superintendent, Dr. Farrar Cobb, will give the reader a clear idea of the general plan of the hospital, and of the details of its construction.

Reference to the basement plan (Fig. 1) shows the scheme of the hospital. It consists of a wing for diseases of the eye and one for diseases of the ear, a central administration portion, and a contagious hospital connected with the main hospital only by underground corridors. The building is absolutely fireproof. It is built of brick and limestone. Its main interior partitions are of brick, in which the heat and ventilating flues run. Its smaller partitions are of expanded metal and wire lathing. The floors are all of expanded metal and concrete, over which the finished floors are laid. The finished floors are, in the main, Terrazzo, save that in the wards and dormitories a wooden floor of seven-eighths-inch hard pine is laid over the concrete. There are no wooden floors in the out-patient department, in the contagious hospital, or in any of the hospital corridors, all being Terrazzo. The kitchen and laundry and service floors are partly asphalt and partly concrete.

The heating of the building is mainly by indirect radiation. The registers in the various rooms open at the height of seven feet above the floor. There is a special arrangement by means of which either fresh, hot or cold air may be obtained through any opening. The entrances and a few isolated points around the building are heated by direct radiation. The ventilation is done by aspiration of a column of hot air in a ventilating chimney, which is ninety feet high. All ventilating flues empty into the conduits which run below the freezing line to the foot of this chimney. At the bottom of this aspirating shaft is a large fan run by an electric motor. This is used as an auxiliary ventilating force. The principles of centralization and economy of hospital service have been satisfactorily worked out, as may be seen from the plans. The isolated building is for treatment of contagious diseases of the eye as well as for isolating any special cases. There are here no wooden floors and no wooden furniture. The walls and ceilings are finished in enamel paint. The soiled clothing, etc., from the building is received into a special corridor, from which it goes through a large steam sterilizer before being taken into the laundries. The laundry is completely equipped with metal washers and with the latest and best machines. Much of the water used in washing the clothing is received from the condensing apparatus of the refrigeration plant, thus utilizing it for a double purpose. The large cold-storage rooms are kept cold from the refrigeration and ice-making plant. This plant is very complete. It was equipped by The William M. Wood Company, of New York. It consists of two ammonia compressors directly connected to a ten horse-power electric motor, with the condensers and receivers necessary. By this machine brine is cooled and properly directed into the cold-storage rooms, and also by this machine what ice is needed in the institution is frozen in the ice-tanks. The kitchen and bake-shop are intercommunicating with the cold supply between them. They are both thoroughly modern.



In the administration part of the basement are the dining-rooms for the officers, nurses and servants, as well as storerooms and the druggist's laboratory.

A unique feature of the hospital is the plumbing. Pipes run entirely open to view, and the fixtures are all of solid porcelain. There is no marble used in the building in any of the sinks or laboratories, nor in any of the operating-rooms or wash-rooms. These porcelain fixtures all set out well from the walls, and in the operating-rooms and surgical work-rooms the walls are protected by plate-glass splash-boards.

The hospital has a thirty-drop local telephone exchange as well as the long-distance service.

A large Sprague electric elevator occupies the centre of the administration portion. It is large enough to accommodate a bed and stretcher at one time. It is equipped with absolute safety devices and automatic floor controllers.

The first floor (Fig. 2) of the hospital proper is given up entirely to the out-patient department. This department does not connect with any other part of the hospital except by elevator. The entrance to it is from Charles Street. It embraces two lecture rooms for medical students, a waiting-room for eye and ear patients and elaborate clinic-rooms and consulting-rooms, as well as two operating rooms, also a drug store and optical salesroom. The ophthalmoscopic dark rooms are equipped with a special new device for the examination of the eyes, consisting of electric lights in special frames and on special brackets. The ventilation of the dark rooms is done by electric fans in ducts, which can be properly controlled by switches in each room. Each clinic- and operating-room has compressed air on tap, drawn through pipes in the walls from automatic water pumps and tanks in the basement. The graded electric current for surgical purposes, for the actual cauteries and surgical engines is obtained from an unique motor generator, mounted on a wheel truck, and these can be (there are two of them) taken to any part of the building and connected with any electric light. They run noiselessly and give a current which can be absolutely graded; but trifling expenditure of electricity, portability and smaller use of electric force are the main features.

The second floor (Fig. 3) of the main building contains the wards for operation cases and the aseptic operating-rooms for both eye and ear disease. The

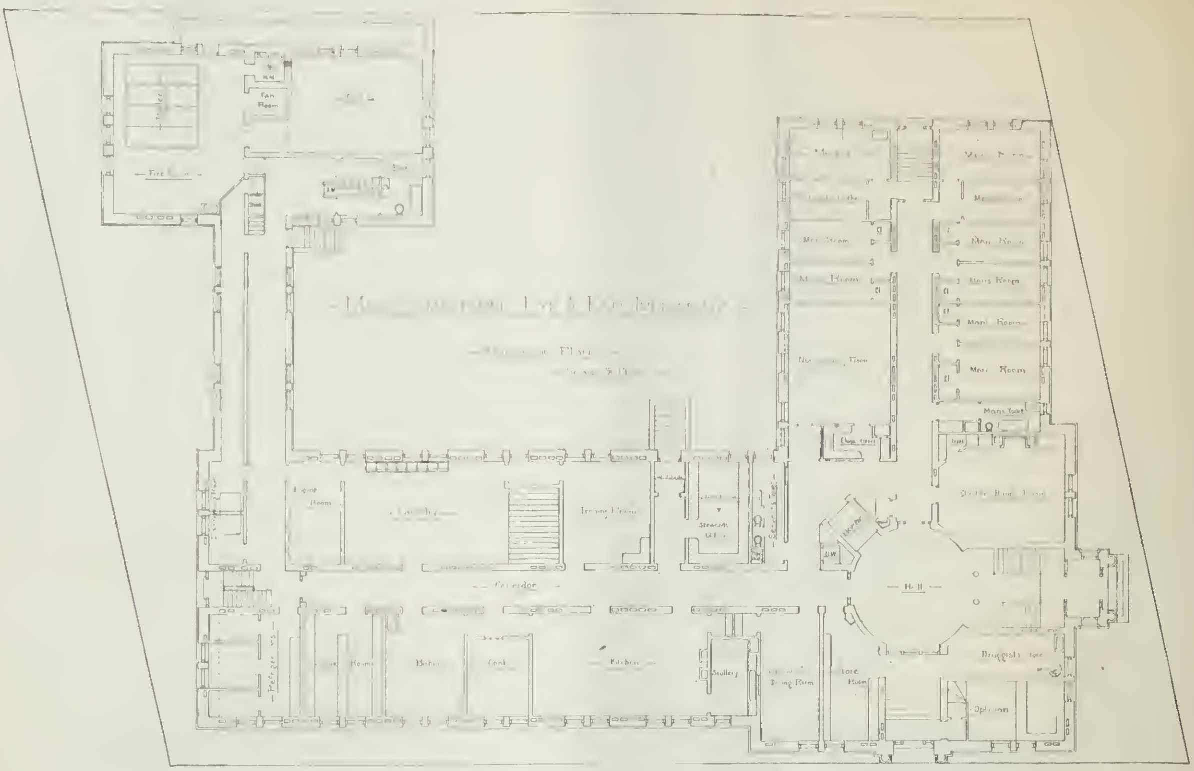

Fan Room
Fire Room
Men's Room
Men's Room
Men's Room
Men's Room
Men's Room
Men's Room
Men's Room
Mens Toilet
Dining Room
Laundry
Ironing Room
Steward's Off.
DW
Elevator
Hall
Corridor
Room
Bath
Cook
Kitchen
Scullery
Dining Room
Store Room
Druggist's Store
Operation

FIG. 1.

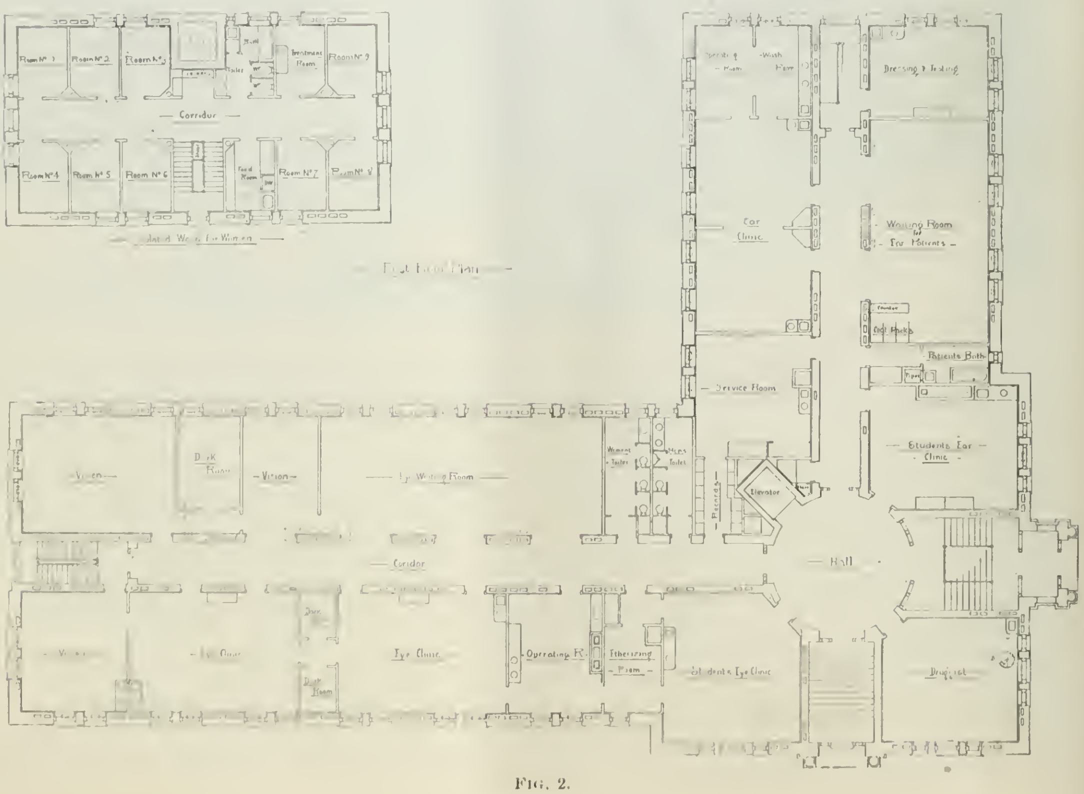

Room No 1
Room No 2
Room No 3
Treatment Room
Room No 9
Toilet
Corridor
Room No 4
Room No 5
Room No 6
Food Room
Room No 7
Room No 8
Isolated Ward for Women
First Floor Plan
Operating Room
Wash Room
Dressing & Testing
Ear Clinic
Waiting Room for Ear Patients
Cold Packs
Patients Bath
Service Room
Students Ear Clinic
Womens Toilet
Mens Toilet
Records
Elevator
Hall
Vision
Dark Room
Vision
Eye Waiting Room
Corridor
Vision
Eye Clinic
Dark Room
Eye Clinic
Operating Room
Etherizing Room
Students Eye Clinic
Druggist

FIG. 2.

diet kitchens and head nurses' administration-rooms are the same on each ward floor of the hospital. The diet kitchen is complete in every way. It has a warming table, a gas stove, marble serving shelves and porcelain sinks; a unique feature of these diet kitchens is the ice-chests lined with solid porcelain. The dishes and utensils in the diet kitchens and for the patients' use all over the hospital are not of crockery or china but of porcelain enamelled steel, different colors being used for each floor and department. On this floor is the surgical sterilizing-room. In it is a Barnstead water still with receiver and sterilizing tank connected. Also two large surgical steam sterilizers, made by the Bernstein Manufacturing Company, of Philadelphia. The walls and ceilings are of Keen's cement, and painted with solid enamel, the corners, including the bases of the floors, being curved everywhere, as also in every other important place in the hospital. The distilled and sterilized water is used in surgical operations, in preparing medicines, and from it also is frozen the ice which is used on inflamed eyes. The two operating-rooms at the end of either wing are almost the same. They are finished in Keen's cement and enamelled as previously described. All the operating-rooms, sinks and wash-bowls have attachments for turning on the water by the foot. These operating-rooms are equipped with a complete assortment of iron and glass furniture. A feature of the eye operating-room is the giant Haab magnet for extracting small particles of iron or steel from the eye.

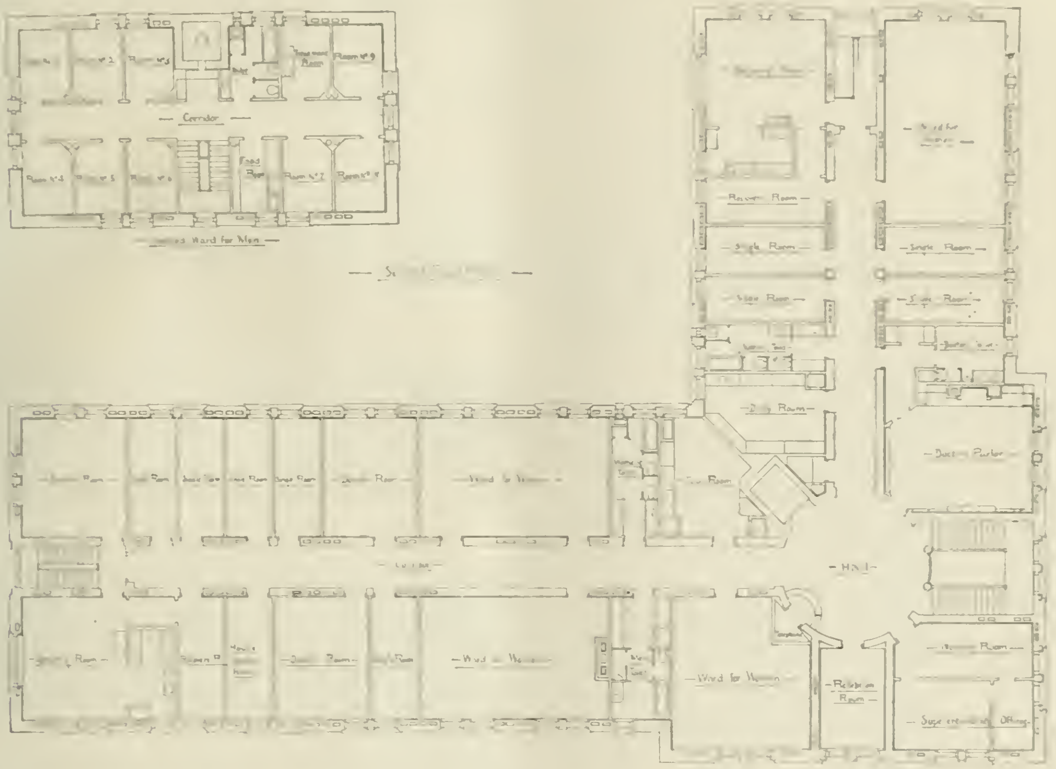


Fig. 3.

The hospital furniture used in the institution is unsurpassable. It is almost entirely of enamelled iron and steel and was obtained from the Bernstein Manufacturing Company, of Philadelphia. Most of it was specially designed by the superintendent.

The toilet- and bath-rooms throughout the hospital are arranged with special care. On each side are a number of ventilated closets, lockers or boxes. These receive the clothing and effects of all patients, who are given a special suit of hospital clothing complete when they enter the wards. The old clothes, in many cases being very dirty and soiled, are steamed, and stored in these lockers. This is a unique feature of hospital management.

On the third floor of the hospital is a special suite for the resident surgeons, three in number, consisting of bed-rooms, parlor, bath-room, closets and trunk-room. This floor has also very large linen store-rooms and sewing-rooms. On this floor are the children's wards.

The fourth floor of the hospital is mainly used as dormitories for the servants and nurses. The entire north wing is given up to a nurses' home. There are twenty-two bed-rooms, each with its own closets. One room is furnished each nurse. In addition there is a nurses' sitting-room or library. In the administration portion of the fourth floor of the hospital is a large and completely equipped pathological laboratory. On this floor also is a suite of rooms for the matron of the hospital. Above this floor on the roof is a large playroom and a sun parlor, with a promenade or veranda outside.

The special features of this hospital may be summarized as follows: It is absolutely fireproof; its construction is, however, perfectly simple and plain. It is lighted throughout by electricity. Its fixtures are all of porcelain, and its furniture modern and aseptic to the last degree. Its heating and ventilation are thorough and practically successful. Its centralization and its economy of service are noteworthy.

METEOROLOGICAL RECORD

For the week ending March 11th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S....5	29.56	47	58	36	98	88	93	E.	S.W.	14	28	R.	O.	.52
M...6	30.01	40	47	33	85	74	80	W.	E.	12	10	C.	C.	
T....7	29.44	34	44	25	98	92	95	N.E.	N.W.	56	12	N.	N.	
W...8	30.02	29	37	21	71	76	73	N.W.	W.	24	16	C.	C.	.44
T....9	30.18	29	36	22	62	77	69	W.	S.	10	6	F.	N.	
F...10	30.28	28	33	23	78	64	71	N.	S.E.	10	8	C.	C.	
S...11	30.24	38	46	29	73	88	80	S.	S.W.	14	15	O.	O.	
☞														.96

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, March 11, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup	Cerebro spinal men.
New York . .	3,438,899	1291	394	6.79	17.56	.77	2.17	.84
Chicago . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	235	72	8.17	21.07	.43	1.72	.43
Baltimore . .	506,389	203	45	5.88	17.15	.49	2.94	.98
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	103	27	8.82	15.68	1.96	.98	—
Washington .	277,000	108	38	9.17	28.42	—	.92	7.36
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	—	—	—	—	—	—	—
Nashville . .	87,754	41	15	12.20	14.64	2.44	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	108,240	26	7	—	—	—	—	—
Fall River . .	95,919	41	—	4.88	34.16	4.88	—	—
Cambridge . .	89,724	20	3	5.00	10.00	—	5.00	—
Lowell . . .	88,641	30	5	3.33	16.66	—	—	3.33
Lynn	66,703	11	2	—	9.09	—	—	—
New Bedford .	66,340	32	9	3.13	—	3.13	—	—
Somerville . .	61.101	12	2	25 00	—	8.33	—	16.66
Lawrence . .	57,263	25	10	4.00	20.00	—	4.00	—
Springfield . .	56,501	17	2	5.88	11.76	5.88	—	—
Holyoke . . .	43,424	11	9	21.42	7.14	—	7.14	14.28
Brockton . .	37,278	7	3	—	14.28	—	—	—
Salem	36,883	13	6	—	13.58	—	—	—
Malden . . .	34,613	9	1	—	11.11	—	—	—
Chelsea . . .	33,168	11	3	—	—	—	—	—
Haverhill . .	32,022	11	—	—	9.09	—	—	—
Gloucester . .	30,589	5	1	20.00	—	—	—	—
Newton . . .	29,716	7	2	—	14.28	—	—	—
Fitchburg . .	29,438	5	1	—	20.00	—	—	—
Taunton . . .	28,167	10	3	—	30.00	—	—	—
Everett . . .	25,338	5	1	—	—	—	—	—
Quincy . . .	23,549	—	—	—	—	—	—	—
Pittsfield . .	22,643	3	1	—	—	—	—	—
Waltham . .	21,812	2	2	—	50.00	—	—	—
North Adams .	20,971	4	1	—	—	—	—	—
Chicopee . .	17,842	3	—	—	—	—	—	—
Medford . . .	16,511	3	—	—	—	—	—	—
Newburyport .	14,915	1	—	—	—	—	—	—
Melrose . . .	14,032	6	1	—	16.66	—	—	—

Deaths reported 2,333; under five years of age 669; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 178, acute lung diseases 445, consumption 321, diphtheria and croup 46, cerebro-spinal meningitis 31, diarrheal diseases 20, typhoid fever 19, scarlet fever 17, measles 16, erysipelas 10.

From typhoid fever New York 6, Pittsburg 4, Boston and Baltimore 3 each, Washington, Nashville and Gloucester 1 each. From scarlet fever New York 14, Boston 2, Salem and Melrose 1 each. From measles New York 15, Pittsburg 1. From erysipelas New York 6, Boston 2, Pittsburg and Nashville 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending March 4th, the death-rate was 21.6. Deaths reported 4,718; acute diseases of the respiratory organs (London) 470, whooping-cough 117, measles 109, diphtheria 96, diarrhea 43, fever 40, scarlet fever 32.

The death-rates ranged from 13.1 in Croydon to 29.8 in Liverpool; Birmingham 20.2, Bradford 19.9, Bristol 16.4, Gateshead 22.0, Hull 17.8, Leeds 20.8, Leicester 14.6, London 22.1, Manchester 29.6, Newcastle-on-Tyne 21.2, Nottingham 19.4, Portsmouth 16.7, Salford 19.8, Sheffield 22.5, Sunderland 23.3, Swansea 16.1.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING MARCH 18, 1899.

W. H. Bell, assistant surgeon, detached from the Naval Hospital, Washington, D. C., and ordered to the "Vixen."

H. D. Averill, assistant surgeon, detached from the "Iowa" and ordered home.

W. H. Ulsh, assistant surgeon, detached from the Naval Hospital, Philadelphia, Pa., and ordered to the "Glacier," April 6th.

R. K. McClanahan, assistant surgeon, detached from the "Richmond" and ordered to the Naval Hospital, Philadelphia, Pa.

D. Kindleberger, medical director, retired, granted leave abroad from April 15th.

CORRECTION.

Through an inadvertence the word *oxygen* was substituted for *nitrogen* in Dr. A. B. Farnham's letter to the Journal printed March 9th. The title should read *Sensationalism in Medicine and Murphy's Treatment of Injecting Nitrogen. Nitrogen* should also be substituted for *oxygen* in the second paragraph from the end.

SOCIETY NOTICE.

Boston Society for Medical Improvement. — The regular meeting of the Society will be held at the Anatomical Lecture Room of the Harvard Medical School, Monday, March 27th, at 8 o'clock.

Readers: Dr. J. H. McCollom, "Scarlatina."

Dr. Wm. T. Councilman, "Tuberculosis." This paper will be illustrated by a complete set of lantern slides.

A. K. Stone, M.D., *Secretary*, 657 Boylston St.

RECENT DEATHS.

Sigismund Waterman, M.D., died at his residence in New York on March 15th. He was born near Erlangen, Germany, February 22, 1819, and came to America in 1840. He was appointed instructor in modern languages in Yale College, and while occupying this position he began the study of medicine. He was graduated from the Yale Medical School in 1848 and afterwards removed to New York. In 1857 he was appointed a police surgeon, a position which he held for thirty years. Dr. Waterman was especially identified with the subject of spectroscopic analysis.

Henry Carey, M.D., of New York, died at Lakewood, N. J., on March 9th. He was one of the organizers of the Anti-Poverty Party, in which he was prominently associated with the Rev. Father McGlynn.

BOOKS AND PAMPHLETS RECEIVED.

Prostatectomy. By Parker Syms, M.D., New York. Reprint. 1899.

The Serum Treatment of Diphtheria. By William Cheatham, M.D. Reprint. 1899.

The Problem of Typhoid Fever in the United States. By William Osler, M.D., Baltimore.

Annual Report of the Board of Health of the City of Worcester for the year ending December 31, 1898.

Twenty-first Annual Report of the Presbyterian Eye, Ear and Throat Charity Hospital of Baltimore, 1898.

Twenty-ninth Report of the Alexian Brothers' Hospital, St. Louis, Mo. Incorporated February 24, 1870.

Transactions of the Luzerne County Medical Society for the Year ending December 31, 1898. Volume VI.

Thirteenth Report of the Lunacy Commission to his Excellency the Governor of Maryland, December 1, 1898.

Annual Report of the Board of Health of the City of Cambridge for the year ending December 31, 1898.

Original Articles.

THE MURDER OF JOHN DEAN — A MEDICO-LEGAL REVIEW.[1]

BY E. O. HOITT, M.D., MARLBORO,
Medical Examiner.

The victim of the murder was John Dean, of Maynard, Mass., a well-to-do farmer, seventy-five years of age. He resided one mile north from the village of Maynard, on the Acton road. He was well known in his locality, having resided there for many years; he was a widower. The remaining members of his family consisted of two unmarried daughters, the three living cosily and happily at their home. One of the daughters was by occupation a milliner in Maynard, the other was employed as book-keeper in the same place. Owing to the fact that the daughters were thus engaged during the day, the father spent most of his time alone on the farm.

The house sets back about twenty-five feet from the road. At the time of the murder there was snow on the ground. The old man's work consisted largely of chopping wood, between his house and barn, a short distance from the house. In the afternoon of December 17, 1896, at four o'clock, he was seen chopping wood at the place mentioned. At five o'clock a teamster in passing saw him coming from the barn towards the back door of the house, having in his right hand a tin milk-pail. I learned it was his custom to do his milking at about that hour.

His daughters returned home that evening at eight-thirty o'clock. Finding no light in the house, one of them entered the kitchen for a lamp; on striking a light, she discovered the mutilated dead body of her father lying on the floor, near the outside door. She gave the alarm to her sister, when the two rushed from the house, going to a neighbor's a short distance away, making them acquainted with the facts.

The neighbor went to the Dean house and finding the old man in the condition described by the daughters summoned the family physician, who responded to the call. In his examination of the wounds of the dead man, he drew the body down from the door about six inches. After making this examination, and without washing his hands, he examined the pockets of the deceased, to ascertain if he had been robbed, as he was known by the daughters to have had quite a sum of money on his person.

A bloody axe stood against the wall in close proximity to the body, which was also examined by the physician.

The local police of the village were now summoned, arriving at ten o'clock. At eleven o'clock of the same date I was summoned by telephone by the police. As no trains were running at that hour, and the highways were nearly impassable by reason of heavy snow fall, I ordered the police to guard the body, house and surroundings, allow no person to enter the house, and nothing to be disturbed until my arrival, which would be at an early hour the following morning.

I viewed the body the following morning, December 18th, at seven o'clock, learning the following facts:

The body was identified by witnesses as being that of John Dean. Because of his having no enemies there seemed no apparent reason for his being foully dealt with, other than for mercenary reasons.

I found the body lying on the back, left arm extended by side, right arm at right angles with body. Near the right hand lay a partially overturned tin milk-pail, spattered with blood, containing about a pint of milk. His cap which he had on when seen by the teamster at five o'clock lay on the right side of the body near the elbow. He was dressed in brown cotton working jacket or jumper, a dark brown vest, dark pantaloons striped with gray, a gray flannel outside shirt and blue ribbed undershirt, felt boots covered with rubber over-shoes, blue woollen stockings, and brown underdrawers.

All garments on the body above the waist line were saturated with blood. Spots of blood were also found on pants. There were a few blood spots on tops of overshoes and none on soles. His head was lying one and one-half feet from the outside door. A pool of blood was around his head and shoulders which extended down to gluteal region on the left side of body. The wall on the south side of the room was spattered with blood, also inside of the outside door. The table-cloth, table-legs and chair standing near showed blood spots.

After a superficial examination of the body, taking careful notes relative to the same, also of the room and surroundings, I summoned a photographer, who furnished me with pictures, which were afterwards presented in court as evidence, and which I am pleased to show you at this time.

I made an autopsy in the presence of the required witnesses. I found the left parietal bone fractured and depressed near its articulation with the frontal bone. The integument was ecchymosed, unbroken and depressed over the line of the fracture. The depression extended backwards and measured one inch wide and three inches long. An incised wound, caused by some sharp instrument, entered the right side of the mouth, and in its passage backwards and upwards severed the tongue, dislodged the anterior molars, cut off the alveolar process of the superior maxillary on the left side, disarticulated the inferior maxillary, severed the left carotid, and all the muscular tissue through the body of the fifth cervical vertebra, and all the tissue and integument on the back of the neck. A second incised wound, on the right side of the face, extending from the angle of the inferior maxillary, to the symphysis, cut off the inferior border of the inferior maxillary, and severed all in its passage to the clavicle, near its articulation with the sternum. The right hand and wrist, though uninjured, were covered with blood. The middle finger of the left hand was nearly severed at the second articulation. The brain showed no indication of having been injured. All thoracic and abdominal organs appeared to be normal.

The stomach contained four ounces of light brown liquid with small particles of undigested food. This organ with its contents was sealed and sent to Dr. Edward S. Wood for examination. I also sent all wearing apparel, the milk-pail and the axe, which was marked in the presence of witnesses.

I gave the body in charge of the undertaker, to be placed in the tomb for further examination, should future occasion demand it.

Now let us turn from this horrible deed to the perpetrator. Lorenzo Barnes was a man thirty-five years of age, height six feet, weight one hundred and seventy-six pounds, single, by occupation laborer, and of intemperate habits. His widowed mother and sister resided in Marlboro. Barnes was of a roving disposition, and had no desire to remain at home with his people, choosing to make his home elsewhere, giving Maynard the preference. He had no regular boarding-place, obtained his meals wherever and whenever he could, slept in barns, sheds or any place which might form a covering. He appeared to be of a good disposition, and faithfully discharged any duty in which he might be employed, his only failing being an over-indulgence in intoxicating liquors. In his general appearance there was nothing indicative of the criminal. He was a frequent caller at the Dean home, and was often employed there.

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[1] Read at the meeting of the Massachusetts Medico-Legal Society, February 1, 1899.

Barnes's conduct after the murder was such as to cause comment and excite suspicion, from the fact that during the evening he called at a neighbor's near the Dean house and asked permission to wash blood from his hands, said he had been assisting in butchering a pig. During that evening and the following day he appeared in better clothes, had plenty of money, the bills being of larger denomination than those usually in his possession. He visited several saloons, spent money freely there.

The morning following, while in a saloon, the account of the murder was read aloud from the morning paper by the proprietor. Barnes appeared to be much interested and requested that he again read it, which he did. Barnes made no comments and seemingly remained unmoved.

The above facts justified the advisability of his arrest, which was accomplished. The officers having him in charge were rewarded in their examination by finding bills, receipts and other papers which were the property of John Dean, and known to have been on his person the morning preceding his death.

The clothes worn by Barnes on the night of the murder were spotted with blood. They were placed in the hands of the State officers, who subsequently transferred them to the charge of Dr. E. S. Wood.

Previous to the execution of Barnes he made a confession that he killed John Dean, but did not state the manner in which he killed him.

From observations and facts gained in the autopsy, I was led to the following conclusions: It was the usual custom of John Dean to do his milking at five o'clock in the afternoon. A teamster in passing the house at that hour saw Dean coming from the barn toward the house with a tin milk-pail in his right hand, and nothing in his left. The body being found by his daughter at eight-thirty o'clock, I am of the opinion that he was killed at five o'clock, upon his entrance at the door; that while he was milking the murderer secreted himself within the house in front of the door and awaited the arrival of his victim.

Owing to the fact of there being no blood on the outside of the door, door-jamb or outside steps, I am satisfied that the door was closed before the fatal blows were struck. Because of the indentations in the cap worn by Dean, the ecchymosed skin and fractured skull, which corresponded to the poll of the bloody axe found against the wall in close proximity to the body, I am of the opinion that he was struck on the head with the poll or back of the axe, which caused him to fall backwards with his head towards the door.

The blood on the inside of the door and on the wall, the direction of the blood spots on the milk-pail, cap and other articles about the body, the direction of the wounds on face and neck, the cuts in the collar of his jumper, all made it very apparent to me that the body was in dorsal position when the chopping took place. Blood stains were found in the pockets of Mr. Dean's clothing, which showed they had been rifled by bloody hands. The four bloody-finger imprints on the part of the axe known as the belly of the handle led me to believe that the prints were made by the fingers of the right hand. This being the case, it gave me positive proof of the murderer's position in the room, his manner of handling the axe, and also satisfied me that he stood on the left side of his victim while doing the chopping.

A few days after my examination it occurred to me that the axe having passed through the neck and collar of the jumper, the blade must have entered the floor. I made State Officer Whitney acquainted with my opinion. He at once examined the floor, found the marks and removed the boards, which were produced in court as evidence.

Barnes was indicted at the February term of the court in 1897; the trial opened in Lowell on May 3d following. The verdict of murder in the first degree was returned on May 7th. The State was ably represented by District Attorney Weir and Assistant District Attorney Geo. A. Sanderson. At the request of District Attorney Weir, I prepared a model of the head and neck of Mr. Dean, which showed the wounds; I also had drawings of the same. When asked by the prosecution to place the model on the floor in a position corresponding to that in which I first saw the body counsel for the defence objected, on the ground that the body had been moved six inches from its original position by the physician first called. The State's evidence was also weakened by the fact that this same physician examined the pockets after having examined the wounds. The point of the objection raised was a question as to who conveyed that blood to the pockets, — whether it was done by the murderer or the physician. Another point of objection raised was the question as to who was responsible for the bloody-finger imprints on the handle of the axe.

The defence tried to prove the insanity of Barnes, with negative results.

The criminal was placed upon the stand and testified that he called at the Dean house on the night of the murder at about six o'clock, that there was no light in the kitchen, and in his attempt to open the outside door it struck against the body of Dean; also that he found two men there and he grappled with one of them and that the other one ran out. When asked by the State in what part of the room this struggle took place he answered, "on the left side of the murdered man." The distance from Mr. Dean's left to the wall was two feet six inches. A pool of coagulated blood extended from the neck to the gluteal region and out from the body towards the wall six inches, leaving a clean floor space of two feet. I was asked by the State if I saw any evidence of the blood having been disturbed, and if in my opinion two men could tussle without the aid of a light, in a space of two feet six inches, without disturbing the coagulated blood.

Barnes was executed only after every means to secure a commutation of his sentence had been tried, both in the courts and before the Governor, with negative results. On the scaffold he was calm in every respect. When he stepped from his cell his gait was steady. He looked down over the official witnesses as if endeavoring to scan some familiar faces. He watched the process of binding his limbs with apparently as much calmness as though he was being measured for a pair of trousers. To me he appeared to exercise a greater degree of self-control than did any of the witnesses present.

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MEDICAL EXPERT TESTIMONY.[1]

BY JOHN C. IRISH, M.D., LOWELL.

This article is offered, in the main, as a defence of the medical expert and of medical expert testimony as it is presented in our courts to-day. It is also offered as a protest against the scathing criticisms that this kind of testimony has so often received of late at the hands of many lawyers, and, I regret to say, of as many members of the medical profession as well. In fact, I am not sure but what these criticisms have come fully as much from physicians as from lawyers. For the last few years the various medical publications have been teeming with articles sharply criticising the character of medical expert testimony, and, at the same time, suggesting various modes of improvement in the securing of this class of evidence. The general trend of this criticism, both by lawyers and doctors, has been to characterize this class of evidence as confusing, misleading, valueless, mercenary and false, and an unbiased reader knowing nothing of the facts in question would be irresistibly led to the conclusion that a large proportion of medical gentlemen, when they were placed upon the stand as experts, become unscrupulous, partisan and oftentimes untruthful contestants in the case. And I especially protest against this misrepresentation coming from members of the medical profession, nearly all of whom, at one time or another, have occasion to be employed as expert witnesses in our courts.

When we recall the high standard of honor by which the conduct of the great mass of our profession is regulated in every other relation of life, through all the cities and villages of New England, and recall, too, the universal confidence and respect reposed in them by the communities in which they live, and that in all matters of business, education and health that engage the attention of public-spirited citizens we find the members of our profession always in the lead, and always active in every movement that makes for the well-being of our citizens at large, it would indeed be very strange if in one single relation this great body of men, so honorable and so honored, should become mercenary and untruthful as medical experts in our courts. The whole fact is that when we sift this vituperation down, and get really at the bottom of the ground for it all, we simply find that it rests upon this one fact, that medical experts very frequently, in the trial of a particular cause, give very different and oftentimes conflicting opinions. Now, we will all agree that in the trial of very many causes, and in fact all those causes that have to do with the physical and mental condition of the litigants, medical expert testimony is a necessity. If we could thoroughly scan that broad realm of medical jurisprudence in which medical expert testimony necessarily plays an important part we would find that many seeming contradictions of the different expert witnesses would be reconciled, and we would see, too, that the irreconcilable conclusions arrived at were in no way inconsistent with the perfect integrity and honestness of purpose of the men who have testified; but the necessarily narrow limit of this article will allow us to cover only a few examples here and there, yet I am sure these will be enough to show that the medical expert is usually unjustly assailed. I do not mean to say that there are no physicians who as medical experts are mercenary and untruthful, but I do maintain that their number is exceedingly small, and that the appearance of such men in our courts, bringing disgrace to medical expert testimony, is of infrequent occurrence.

For the past twenty-two years the Commonwealth has relied, in the main, for its expert testimony in its prosecution of criminals charged with manslaughter and murder upon seventy-two expert witnesses, most of whom are members of this Society, and in the great number of prosecutions during this long time I do not know of a single instance in which one of these experts of the Government, in his statement of facts, or in the giving of his opinion as an expert, has ever been accused, or suspected, of swerving from the exact truth for the aid of the prosecution, or for the harm or benefit of the accused.

Turning now to the civil courts, we come to that broader field of judicial inquiry which requires the aid of the medical expert. Here we encounter in great numbers and endless variety those suits for redress for every kind of personal injury, and in the trial of these cases the medical expert is an indispensable adjunct. Taking as an example one of those suits for personal injury in which the plaintiff is asking for compensation, let us look for one moment at the kind of testimony that is sought from the expert witnesses of both plaintiff and defendant. We find, as a general rule, that the medical experts are giving their testimony in two very distinct directions; that is, we find them testifying both as to matters of fact and questions of opinion. The medical gentlemen called will usually consist of the doctor who has attended the patient and the several medical experts on each side who have also, on one or more occasions before the commencement of the trial, examined the plaintiff. Therefore, all of them are in a position to testify, to a greater or less extent, as to matters of fact.

First, the attending physician presents the facts in the case, giving, for instance, the history of the patient's condition from the time of receipt of the accident, the treatment he received, and his condition as he has gone along, up to the time of the trial; that is, he is asked to give all these facts, and then, as an expert, too, to give his opinion as to the seriousness of the accident, the effect that it has had upon his sufferings up to that time, and also his opinion as to the future damages the patient may sustain. The medical experts on both sides are also asked to testify as to the existing conditions they found upon examination; and there is one thing particularly noteworthy, namely, that in all these questions of fact as to the condition of the patient we find the expert witnesses practically agreeing. When one leg measures in length two inches more than the other, or is that less in diameter, when one knee is swollen to twice the size of the other, a joint anchylosed, muscles atrophied, distorted limbs and tendon reflexes impaired, we never see, on the part of these experts, a disagreement as to the existence and extent of these injuries; that is, it is especially important to note the substantial agreement that we always find in all these things. In short, the palpable, perceptible facts of the case are always stated with the utmost fairness. There is never any disagreement in the testimony of the experts between one side and the other. The attending physician, in spite of all the sympathy and interest that he has in his patient, as you will note, is very faithful in his testimony as to these patent facts in the case.

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[1] Read before the Massachusetts Medico-Legal Society, February 1, 1899.

But the moment the scope of inquiry changes from the lesions which the patient presents, and which are patent to our eyes and our touch, and passes on to matters of opinion, then wide differences become apparent. Not only will the opinions oftentimes be very different but absolutely conflicting. It is simply that the witnesses have passed from a field of exact knowledge into one more or less involved in conjecture and theory. For instance, the plaintiff may come before the experts presenting no physical signs of injury whatever. There has been no injury of a limb; no scar of any wound on the body; no evidence of any injury of the spinal column; no paresis of any muscles; no fault of tendon reflexes; in short, no lesion upon which we can place our fingers. Still, the patient has received a fall, or a concussion; shows anemia, a lowered vitality, complains of severe headaches, loss of memory, fault of vision, pains in the back, weakness of muscles, loss of sleep, and numerous other symptoms (frequently inconsistent with each other) that the neurasthenic often presents. To the one physician, this imaginary patient of mine presents a typical case of concussion of the spinal cord. He is perfectly certain that such an accident is possible and that it has happened in this case, and he may even go so far as to believe and explain that at the time of the accident there occurred a disturbance of the ultimate molecules of the spinal cord, and that the present condition of the patient is absolutely typical of such an accident, and that her future recovery is a matter of very great doubt. Believing this, he will probably go on and explain to the jury that this aforesaid disturbance of the ultimate molecules has actually occurred, and if he believes this theory at all he will be very certain of the correctness of it, although, of course, there is not one iota of evidence that such a thing did occur, or ever can. While to another expert, this same patient, without the slightest evidence, from the crown of her head to the soles of her feet, of having ever received any injury, so far as her physical examination goes, presents simply the type of the hysterical woman, and, in view of the circumstances surrounding the case, in his mind is probably a malingerer.

Between these extreme and irreconcilable opinions as to the character of the case will be presented perhaps as many others as there are different men to express them, the latter less radical, but as inconsistent with each other as the two that I have indicated. As we candidly and impartially consider this case, no one of us would doubt for a moment that this conflicting and irreconcilable testimony was given by the various medical experts perfectly honestly and conscientiously. In fact, these differences of opinion, so far as they show anything, tend to establish the absolute good faith and integrity of the witnesses, and really, who in the world can say, in the midst of these differences, where the truth lies? Is there any diagnostician among us of such wisdom and such experience that he can aid the jury in elucidating the exact truth? While it is very desirable to the cause of justice that this snarled skein of fact and theory should be unravelled and the truth separated from the error, yet there is no source from which this assistance can come. The fact is that justice is asking an exact opinion from a very inexact science, and the medical experts have given all of knowledge they have and all of theory that they have constructed to elucidate the complex conditions that surround the case. They have simply given the best they had, and that is very far from any precise conclusions.

In support of my contention, a very eminent lawyer and judge of New Hampshire, with many years of experience in court and on the bench, expresses himself in the following terms:

"This bias, or inclination, in favor of the party by whom the witness is employed is probably the most frequent complaint of all against the expert witness, and the inclination, or partiality, is often characterized by terms indicating dishonesty and corruption. But it is my belief, resulting from the observation and experience of many years, that there are few instances in which the scientific witness permits himself to testify, or to be engaged on a side contrary to his convictions derived from a careful examination of the case."

I suppose another cause for these irreconcilable differences of opinion may be found in the mental characteristics of physicians, themselves, as a class. For the most part, they are men of strong convictions. They are much in the habit, in the absence of exact knowledge, of framing theories and tracing back causes from effects, or following out effects from causes. An endless field of speculation is presented to them in the study of the influence of the mental and moral conditions upon physical disturbances, but most of all in the study of the functional deviations of the nervous system from the standard of health. This opens a very wide field for speculation and theory, which is very little guided by actual and precise knowledge. Physicians are, therefore, very prone to form all sorts of theories, and, when once formed, they adhere to them with a pertinacity that would even do credit to members of the clerical profession. Hence, when we descend to the practical arena of the court room, these pet theories of ours are sure to come out and stand forth in clashing inconsistency with each other, and the strict honesty of the experts simply emphasizes the contradictions that appear. It is just this condition of things that is complained of in the matter of medical expert testimony.

Now, is it certain that the cause of justice would be promoted if we could all agree in our theories instead of having different ones? Is it at all certain that an agreed theory would bring the jury any nearer to a just appreciation of the case than they have now reached in sifting the conflicting testimony as it has been presented? It is true that this condition of things is unsatisfactory to court, lawyers and physicians themselves, but is there any remedy for it? It seems to me that the character of the testimony asked for and the characteristics of the men giving it make these differences inherent and irremediable. A supposed remedy, however, has been suggested, and that is that in the trial of these causes the judge should appoint some disinterested and capable expert to testify in the case, while allowing the litigants to call their respective expert witnesses, as is now done. This course of procedure seems to me to be open to some very grave objections. In the first place, we have no reason to suppose that the physician, or surgeon, so selected, would be markedly more competent than other experts who would be employed, while the known fact that he was thus selected to instruct the jury would give his theories in the case almost the weight of judicial authority. Yet, as a matter of fact, he would be quite as likely to be wrong in his theories and conjectures as the other experts employed. So, while he *might* further the cause of justice, there would still be a very great danger, on account of the weight of authority that would thus be given his opinions, that he might work far greater injustice to either defendant or plaintiff than would be the case with the present procedure. That is, simply his official position in the court would give to his opinions a weight and importance that could in no way justly attach to them. Were it possible to select a single man so markedly above his *confrères* in experience and ability that his testimony in a given case would be entitled to the greater authority the court would give him, this selection might be a remedy for the difficulties we are considering. If the man selected were not superior in ability and judgment to his *confrères* in the case, his testimony would acquire a fictitious and unjust importance. Therefore, I believe that the selection of such an expert in such a manner would be a hindrance to the cause of justice rather than a remedy to the conditions complained of. For the best selection possible of such an expert to be made, it would have to be made by our profession. When made by the judge it is a selection of a layman, so far as the medical profession is concerned, and it would be just as absurd in case some lawyer were to be appointed to the bench, to leave the selection of that lawyer to medical men, as it would be to have a member of the legal profession, even if he were a judge, select the most competent expert from among physicians. Now, personally, if I were going into court asking justice for some injury received, I would go about among my professional brethren and select those experts who entertained the same opinion as to the extent of my injuries, the amount of damage I had received and was going to suffer, as I believed myself, and I would call these men as medical experts. On the other hand, I should expect the defendant corporation to select those experts who entertained the view of my condition that accorded with theirs, who, in short, believed exactly as they did, and we would present our case before the jury. I certainly should seriously object to an expert employed by the court testifying in this case of mine, simply because I should feel that his testimony would acquire a weight and importance to which the ability of the man would not entitle it, and I believe that the jury, listening to the testimony of my experts on the one side and that of the defendant corporation on the other, would be more likely to reach a just conclusion in the case without, rather than with, the assistance of the court expert.

In conclusion, I will say that in this matter of the employment of expert testimony I do not believe there is so very much to correct. I hold that the great mass of medical experts, which includes our entire profession, are conscientious and honest, with very rare exceptions, in the evidence they give, and that, so far as the testimony of experts in regard to fact is concerned, they always agree, and in so far as their testimony is an expression of opinions, they will often very widely disagree, and there is no remedy for that. And whatever improvement the future may have in store for this kind of evidence must simply come through the medical profession itself. The greater advances we make in science, the greater our ability, the better we understand the laws that govern the mental, moral and physical natures of our being, the less erratic and the more uniform and reconcilable our theories will become. And outside of this advancement there is no remedy for the faults of medical expert testimony, if to any great extent such difficulties now exist.

A CASE OF DOUBLE HOMICIDE: ITS MYSTERY.[1]

REPORTED BY O. J. BROWN, M.D., NORTH ADAMS,
Medical Examiner.

August 7, 1897, about 12 o'clock, noon, I received notification of a probable homicide at No. 10 Webster Avenue, a narrow alley off Holden Street, North Adams, a locality thickly populated, near the centre of the city. Arriving inside the house at 12.15 P.M., I found two deputy sheriffs, the chief of police, four patrolmen, and several physicians and newspaper reporters. The officers had excluded all others. Several hundred people stood outside in apparent awe and excitement. The house measured 37½ x 16½ feet and a small ell extended it to the rear; it was old, and one story high; it had five rooms, a pantry and a closet on first floor, three rooms and a small closet on the second floor.

Upon request, two physicians (selected for official witnesses) and four officers remained with me inside; all others were excluded. We found the interior of the dwelling in the utmost disorder; everything had been left exactly as found, awaiting my arrival. Upon the bed in a room, 9½ x 10 feet 4 inches, off the kitchen, lay the body of Henry F. R., aged fifty-five, a bachelor, a powerful, muscular man, 5 feet 11 inches tall, weighing about 230 pounds. Rigor mortis was strongly marked. There was still some warmth in the body, in the abdominal region. The body lay on its back, the head to the north, nearest to the right hand side of bed and near the door into the kitchen. It was covered in a careless manner, first by a cotton sheet, then a woollen blanket and a bedquilt, while on top lay two white bedspreads folded into sixteen thicknesses. The head was covered with a pillow, which with its pillow-case was saturated with blood on its under surface where it touched the head. This pillow was covered by the bedquilt. The head rested on a pillow at the end nearest the centre of the bed, in a pool of blood. A portion of the sheet was stained with blood. The body was clothed in a gauze undershirt and an ordinary white bosomed shirt, with its right sleeve unbuttoned at the wrist. The arms lay with the forearms flexed enough to bring the hands to a level with the umbilicus. The hands were six inches apart and rested on the abdomen. The fingers of the left hand were slightly flexed, while those of the right hand were closed tightly upon and grasping the quilt over the body. The first finger of the right hand was spattered with blood. The left thigh was flexed at an angle of about 45°. The leg was flexed at a right angle to the thigh and the whole limb was slightly inverted, bringing the knee nine inches from the right side of the bed. The right leg was nearly extended. The foot protruded six inches from the side of the bed, and was uncovered. The position of the limbs was that of a person starting to get out of bed.

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[1] Read before the Massachusetts Medico-Legal Society, February 1, 1899.

The general expression of the face was one of horror. In the mouth was a gag, made of heavy canvas sacking, so forcibly crammed in that I extracted it with some difficulty. There was a slight blood stain upon the gag; after its removal the mouth remained widely open.

Upon turning the body on to its left side blood oozed from the mouth, the left ear and the nostril. Underneath there was a sheet, a thin bedquilt, light mattress and a wire spring. The blood had soaked through these to the wire spring. There were evidences of urine upon the thighs and bed-clothing. There was a blood-spatter 10 x 4 inches on the headboard, about six inches from where the head lay. Its appearance indicated that it came from an artery spurting.

Autopsy, August 7th, at 6 o'clock P. M.

External Examination. — Directly over, around and upon the right eye was a crushing injury, that is, a contused wound of nearly circular outline. Through the upper portion of the right eyebrow it gaped a little, and for the distance of one inch extended to the bone. Below the right eye the skin was also broken through. The right malar bone was fractured. There was a contused wound over and around the left eye, very similar to that over the right, but giving the circular outline in more marked degree, and not breaking through the skin to any great extent.

On the left side of the head one and one-half inches above the left eyebrow was a wound one inch long, with ragged edges, in depth extending to the bone. At an acute angle with this wound, and nearer the median line, was another, one inch long, very similar to one last described, penetrating to the bone.

Just back of the left ear was a crushed condition of the scalp and above this, on the left parietal region, was still another contusion, also penetrating to the skull. This wound was three inches above the left ear, and was one and one-half inches long. The left malar bone was fractured.

Internal Examination. — Upon removing the scalp considerable clotted blood was found directly beneath the two wounds just described as being at an acute angle to each other. At this same place the bone was denuded over a portion the size of a nickel. There was also a fracture here, causing a slight indentation. Upon removal of the calvaria (which was unusually thin) the dura was found congested and dotted with blood. The whole lower half of the left hemisphere was covered with clots. The same condition existed on the right side, but to a more marked degree.

Upon removal of the brain six drachms of soft clots and fluid blood were found in the base of the skull. Fractures had detached the upper portion of both orbits.

There was an extensive fracture extending through the base of the skull in the left middle fossa. Three inches above the left ear I found still another *small* fracture.

There was some hypostatic congestion of the lungs. The heart was normal; both the right and left sides of the heart were empty; the valves were normal. The pleuræ were normal.

There was a thick layer of fat over the abdominal organs. There was still some animal heat in the abdomen. The stomach contained about eight fluid ounces of partly digested food, of semi-solid consistency, made up of potato, meat fibres and cucumber seeds; this food had been in the stomach at least four hours before death, and probably longer. The stomach was healthy, and the kidneys, liver, spleen, pancreas, intestines and all the other organs were normal. The bladder contained about two fluid ounces of urine.

The cause of death was crushing injuries to the head.

We found another victim of the tragedy in the person of Mary J. R., a maiden lady aged sixty-eight, housekeeper and sister to Henry F., the two having lived together for a number of years. Her body was found on the second floor of the house, lying nearly flat, face downward, across the threshold of the doorway between the middle and the west rooms. The breasts were on the threshold. The head lay on its left side, facing southerly. It was four feet from the top of the stairway in the middle room and lay in a pool of blood about three by four feet in extent.

The body was well nourished, was five feet six inches in height, and weighed about 115 pounds. It still had some warmth. Rigidity was well marked. The right arm and forearm were extended at a right angle to body, and the forearm was so much pronated that the palm of the hand was upward. The fingers on this hand were slightly flexed. There were two rings on the third finger. There was dried blood on the inside of the right hand and wrist. The left arm was by the side, at an angle of nearly 45° with the body. The left forearm was flexed at an angle bringing the left hand under the stomach. The thighs were parallel and close together. The right leg was a little flexed, and slightly everted from the line of the body. The left leg was extended so that the top of the right foot lay against the left heel.

The body was dressed in an old ragged gray waist and skirt, which was not fastened but lay loose in front, looped over the left forearm. A portion of this skirt extended as high as the lower border of the scapula. Against the right side near the waist, as if the body might have fallen on it, lay a broken accordion, bloody, and stuck with blood to a piece of brown wrapping paper which was on the floor.

The skirts in front were wet with urine. There was no evidence of violation.

Autopsy. — The autopsy was held on the same day, August 7th, at 6 o'clock P. M.

The head and face were nearly covered with dried blood. Four separate bullet wounds were found in this region, one in the right temple, midway between eye and ear. The ball passed inward and slightly downward. There were powder-marks two inches below this wound. The lobe of the right ear was of a purple color and showed powder-marks. The right auditory canal and both nostrils contained blood.

A bullet had passed through lobe of the right ear. This ball, entering upon the external surface, passed upward, backward and out from the internal surface on a line parallel with auditory canal.

A third wound was on left shoulder, the ball entering one inch below the point of the shoulder, passing just beneath the skin downward toward the elbow, and out two and one-half inches below point of entrance.

The other bullet wound entered over the larynx. This was surrounded by powder-marks to the extent of two and one-half by one and one-half inches. This bullet passed inward, slightly downwards and to the left of the trachea; near the thyroid cartilage it glanced to the left, passing inwards and downwards through the deep muscles of the neck, and lodged near the centre of the left scapula, fracturing that bone.

The tongue protruded one-half inch through the teeth (false teeth), the mouth was open one-half inch, the eyes were bulging and suffused, the left side of the face was flattened by pressure from the weight of the head resting upon it after death.

Upon removal of the calvaria a large clot was found in the right temporal region. The bullet which entered here passed inwards, very slightly downwards and backwards, lodging in the base of the skull, causing a fracture at the place of lodgment. The base of the brain on the right side was engorged with blood.

The pericardium, heart and lungs were practically normal. The heart was empty, aside from one-half drachm of liquid blood in the left ventricle, the aortic valve was slightly atheromatous; pleuritic adhesions were extensive and strong upon the right side.

The stomach was in healthy condition and contained two fluid ounces of reddish liquid material; the spleen was rather small, the uterus was atrophied, the bladder was empty; liver, the pancreas, kidneys and all the other organs were normal.

The cause of death was "pistol-shot wounds of the head and neck."

With a stenographer, a descriptive inventory was taken of all the rooms in the house. This inventory covers seven large typewritten pages. Only such a portion of it is inserted here as will give a general idea of the *topsy turvy* condition of everything in the house, and may have some relation to the homicides:

In the kitchen, at the right hand side of the door leading to R.'s bedroom, stood a piano-stool, on which was a carpenter's mallet, with blood on both heads, handle toward bedroom.

In the corner by the open door leading out of doors stood a box, apparently used as a receptacle for foot apparel and odds and ends; on this lay a pair of trousers with suspenders, a vest, an old shoe, two blacking-brushes and a box of old nails; the trousers pocket contained a penknife and a small amount of money in coin. The vest pockets contained a watch (running), a spectacle case, a notebook, and a mileage book, together with four dollars in bills. Other clothing was hanging in the bedroom, but the garments upon the box in the kitchen had the appearance of being last worn.

In the bedroom opposite the bed where R.'s body lay was a combination desk, with the top drawer pulled out eight inches. This drawer contained many articles, among which were hair brushes, opera glasses, several watch chains and two watches. The second drawer contained envelopes, paper and a 32-calibre revolver with five chambers, in which were four loaded and one discharged cartridge. The quantity of dust upon it precluded the theory of recent use. In the bottom drawer were eighty-five watches, most of them cheap in value. Next to the desk stood a bureau filled with clothing, books, bundles and cloth. In a rocking-chair near the bed was a quantity of clothing and a truss for double hernia (it was found that R. had hernia). A small closet at the foot of the bed and to its left contained clothing for both ladies and gentlemen. A thick layer of dust covered the clothing. Between the head of the bed and the kitchen door was a small stand, upon which were two diamond rings, a jack-knife, several bottles, two bunches of keys, watch chain, two old padlocks, screws, a box of receipts and other promiscous matter.

The other rooms on the first floor were filled chiefly with unused furniture, organs and pianos.

Up a narrow stairway we found the chamber-floor divided into three rooms: The *middle room*, at the top of the stairs, one chamber *east* and another *west* of the middle room. Miss R. occupied the west room, over the kitchen; her body lay in the doorway between this and middle room. The door was off its hinges, and stood between the doorway and her bed. Upon her bed were two quilts, three pieces of quilts, an old woollen blanket, two skirts, three pillows, a bundle of rags, pieces of new cloth, mattress, and three feather beds. Another feather bed lay on the floor. The bed had the appearance of having been occupied by some person lying crosswise. This room contained also a gasoline stove, zinc, considerable earthen and tin ware, a barrel filled with jugs and bottles; books, old pails, papers, bonnets, a box containing feathers, a clothes-rack, bed ticking, some stovepipe, a rocking-chair, two cane-seated chairs, a marble top stand, a tin boiler, a trunk packed with books, clothing and cloth; an accordion, a bag of carpet warp, a snare-drum, a clock, a wash-bowl, a chamber vessel, a lamp shade, a broom, etc.

This elaborate and detailed description, along with the record of the view and autopsies, was filed at once with the court and district attorney. Photographs were taken showing arrangement of rooms, position of the bodies and location of the wounds.

Three officers were detailed from the State Detective Force who visited the premises and were working upon the case within a few hours. The Mayor of the city gave the case his constant personal attention; he employed a special detective. The city offered the liberal reward of $1,000 for the finding of the perpetrator of the crime. Eighteen months have now elapsed and notwithstanding the vigorous and untiring work of experts and officials, striving to unravel the mysteries this case involves, as yet all efforts of city and State authorities have been entirely unavailing.

Mr. R. was a money-lender and often took mortgages upon personal property. He dealt somewhat in musical instruments, sewing machines, watches, jewelry or whatever came in his way. While sharp at a bargain, he was considered kind-hearted, reliable and worthy. He was seen upon the street as late as 9 o'clock the night of his death. He was not wealthy and was not supposed to have large sums of money on his person. He was temperate, social and attentive to business. His sister was somewhat eccentric and a *very* slovenly housekeeper, but she was honest and inoffensive, affectionately attached to her brother, and had no enemies. What the motive could be for taking either of these lives is an unsolved mystery. One family, occupying a house only twenty feet from R.'s, was up nearly all night the night of the homicide, but heard no pistol shots or other unusual sound. Another house, only seventeen feet distant, was occupied by the owner alone, and he heard no disturbance.

The temperature of the bodies and the contents of the stomachs in semi-digested condition lead us to believe that the homicides occurred at an early hour, August 7th, probably between 1 and 3 o'clock. How one or more persons could enter this home and with some instrument (probably the blood-stained mallet) slay one victim, seek the chamber and fire at least four shots into another, escape, and leave no clue, seems a mysterious problem.

A SIMPLE METHOD OF LOCATING SOME FOREIGN BODIES BY MEANS OF THE FLUORESCENT SCREEN.

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

SEVERAL methods have been suggested for determining the position of certain foreign bodies by x-ray examinations, some of them so complicated as to confuse rather than assist the surgeon. A method. which I devised about three years ago, in which the fluorescent screen is used instead of x-ray photographs, I have found so successful in a number of cases that I think it will commend itself to others. I will therefore quote from the Medical and Surgical Reports of the Boston City Hospital, January, 1897.

Let me describe the method pursued in one of the simplest practical uses of the x-rays[1] namely, that of locating a bullet, whether in the head, body, or extremities. If unable to walk, the patient is brought in on a stretcher, which is placed directly on the supports attached to the static machine table (all the hospital stretchers are of the same size and fit the grooves in the supports), and the Crookes tube is placed underneath. If the physician has just come into the dark room from bright daylight he must wait until his eyes accustom themselves to the darkness; the machine is then started, and the spark-gap adjusted to the length most suitable to the condition of the tube, this length being determined by examining the patient through the fluoroscope.

Everything being now in readiness, the fluoroscope is placed directly on the thigh (let us suppose the bullet is there), and the examination is begun. After looking a moment the spark-gap may be changed a little in order to increase or diminish the light, as by means of this variation more can be seen, certain things showing better in a bright light and others in a less brilliant one. With a bullet it is generally well to use a considerable amount of light. After the fluoroscope has been moved about a little the shadow of the bullet is found, and the spark gap may again be changed, in order to get as clear a shadow as possible. The physician, while still looking through the fluoroscope, then makes with the pencil[2] already described a mark over the place where the bullet seems to be, and directly under the fluoroscope; he then makes a corresponding mark on the side of the thigh nearest the Crookes tube, over the shadow of the bullet, and draws 1 and 1 by the side of each of these two marks. Then, while still looking through the fluoroscope, the Crookes tube should be moved horizontally a few inches to and fro in order to learn how deeply the bullet is imbedded, for if the shadow of the bullet moves considerably in the fluoroscope the bullet is some distance away. If it moves very little it must be near the fluoroscope and the surface of the skin. If far from the surface its shadow will, of course, be ill defined; if near, it will be very sharply defined. Next, the patient should be turned so as to allow the physician to look through the thigh in a direction about at right angles to that first taken, and, as before, a mark should be made with the pencil over the place where the bullet seems to be, both when the point of the pencil is held directly under the fluoroscope and on the side of the thigh nearest the Crookes tube. These points should be marked 2 and 2, and the bullet will be found at the point where the line from 1 to 1 intersects that from 2 to 2.[3] I have used this method for locating bullets in different parts of the extremities, and in the neck, thorax, back and abdomen, and usually the situation of the bullet is readily determined by this means. The first bullet I located in this way was in April, 1896.

Clinical Department.

TWO CASES OF ECLAMPSIA SUCCESSFULLY TREATED BY VENESECTION AND INTRAVENOUS INFUSION OF SALT SOLUTION.

BY CHARLES N. CUTLER, M.D., CHELSEA, MASS.

THE first case was a primipara, twenty-five years of age, at full term of pregnancy, confined October 13, 1898; labor normal, duration of second stage about one and one-half hours. The first convulsion came on during the delivery of the head, and was repeated somewhat regularly with fifteen or twenty minute intervals. The administration of ether was immediately resorted to, and one-eighth grain pilocarpine with one-half grain morphine given hypodermatically. Consciousness did not return after the first interval. Pulse 125, temperature not noted. The patient had five convulsions up to the time of receiving the intravenous injection. Total suppression of urine.

With the assistance of Dr. George C. Hall, the median basilic vein was opened and about eight ounces of blood allowed to escape, followed by the introduction of about one quart of normal salt solution.

Ten minutes after completing the operation the pulse fell to 108, later to 104; consciousness returned in half an hour.

The catheter was introduced directly after the injection and two ounces of urine obtained, which became solid when subjected to the heat test. Three hours after the injection twelve ounces of urine was obtained by catheter.

Two hours later, on introducing the catheter, but two or three ounces of urine was obtained, showing a returning suppression; this was very soon followed by a convulsion very much milder in form than those which preceded it. Three convulsions followed at hourly intervals. The secretion of urine then began to increase; fourteen ounces was secreted in the three hours following the last convulsion. Consciousness again returned and the patient recovered rapidly without incident.

Twenty-four hours after the cessation of convulsions the urine showed only a slight trace of albumin.

The second case occurred in the practice of Dr. W. G. Bond, of Revere. A multipara with her second child, eight months pregnant, was attacked with a convulsion at 12 A. M., January 24, 1899.

Premature labor was induced by Dr. Bond and completed about 4 A. M. Prior to this the patient had three convulsions, notwithstanding the free exhibition of chloral, potassium bromide, morphine, pilocarpine and the administration of ether.

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[1] A Study of the Adaptation of the X-Rays to Medical Practice, by Francis H. Williams, M.D.

[2] The pencil may be made of a crayon suitable for marking on the skin, enclosed in a small metal tube. The metal casts a shadow on the fluorescent screen, and the position of its point is thus readily seen.

[3] To prevent rubbing out the marks when the skin is washed for operation they may be made more permanent with tincture of iodine applied by means of a small brush with a fine point, or the skin may be touched with a small point of nitrate of silver.

After delivery the convulsions ceased for eight hours. From 12 o'clock January 24th until 2 o'clock A. M. January 25th she had eleven convulsions, increasing in severity, frequency and duration, the patient not regaining consciousness in intervals between the last three convulsions.

At 2 A. M. January 25th one-half ounce urine was drawn by catheter, which showed over one per cent. albumin.

At 3 o'clock A. M. January 25th the median basilic vein was opened and from twelve to sixteen ounces of blood allowed to escape, after which the canula was introduced and two quarts salt solution injected. The pulse rapidly fell from 130 to 88 per minute. Consciousness returned as soon as the patient recovered from the anesthesia.

The patient was catheterized at 4 o'clock A. M., one hour after the introduction of the solution, and fifteen ounces of urine were drawn; again at 7 o'clock six ounces; at 9 o'clock three ounces, at 12 o'clock twelve ounces.

In the twenty-four hours following the operation forty ounces of urine were secured.

At 12.30 o'clock A. M. of the 27th the second suppression of urine began; between this and 3 P. M. only nine ounces were secured. At this time, sixty-one hours after the last convulsion, a partial convulsion occurred, followed by delirium, and it was thought best to subject the patient to another infusion. Accordingly the vessel was opened and eight ounces of blood allowed to escape, followed by the introduction of two quarts salt solution. This entirely overcame the delirium. Urinary secretion commenced in earnest, and sixty-four ounces were secreted in the following twenty-four hours, and as much each day until the urine became normal in quantity as well as quality.

Circumstances surrounding the first case rendered it impossible to preserve a more detailed record. Like the second case, it clearly proved the tendency in these cases to a secondary suppression of urine, which must be promptly met by a second intravenous injection. Whether a second bleeding was indicated remains a question of some doubt.

Normal salt solution introduced into the vessels becomes so rapidly eliminated through the kidneys that no harm can be done by repeated large injections at five or six hour intervals if needed. It seems probable had this plan been followed in these cases the secondary suppression would not have occurred.

It should be noted that each of the three injections was followed by a large flow of urine, complete relief of coma and convulsions.

Assuming that eclampsia is caused by irritation of the nerve centres from retained elements in the blood, it becomes evident that any effort of nature or art which will lessen this irritation will in some degree bring about the desired results. The rapid abstraction of a quantity of this surcharged blood partly accomplishes this end, the introduction of a large quantity of normal salt solution dilutes the remaining portion and at the same time, by overloading the vessels, becomes an active and prompt diuretic. This diuresis has been very often observed after intravenous injection given for the relief of surgical shock.

A careful search of current literature fails to discover any detailed report of cases treated by venesection and intravenous infusion of salt solution. An article written by Dr. Lanphear,[1] of St. Louis, advocates this method very strongly but does not report individual cases.

In a treatise on the subject of Eclampsia by Dr. Charles W. Townsend[2] occurs the following: "Copious bleeding, followed by intravenous salt-solution injections, would seem to promise good results." Subcutaneous injections of salt solution with venesection have been recommended by several authorities whose reputations warrant special notice. Notably among these we find an article written by Dr. Ferre[3] in which he very strongly advocates the subcutaneous method and calls attention to the prompt diuresis which almost immediately follows.

Believing that the detailed report of these two cases will be of interest to the profession, this paper is submitted with the hope that it may lead to further investigation with more favorable results in the treatment of this too fatal complication of pregnancy.

Medical Progress.

RECENT PROGRESS IN PUBLIC HYGIENE.

BY SAMUEL W. ABBOTT, M.D., BOSTON.

(Concluded from No. 12, p. 283.)

THE WATER SUPPLIES OF GREAT CITIES.

The city of Birmingham, Eng., is now constructing an aqueduct to bring water from the rivers Elan and Claerwen in Mid-Wales, eighty miles distant. This water will be of very good quality, since it is to be taken from a comparatively uninhabited region. The mean annual rainfall of the district comprising the water-shed is about sixty-eight inches per year, which will easily furnish an ample supply of at least 75,000,000 gallons daily. Liverpool takes its water from the Vyrnwy reservoir in North Wales, sixty-six miles from the city, and there is a possibility that London may in the future take its supply from South Wales, at a distance of one hundred and seventy miles, in accordance with the plan devised by Sir Alexander Binnie. The deficiency of supply was painfully evident last year, especially in the east end of London; but the opposition of the water companies now supplying the city from the River Thames and the Lea has thus far succeeded in preventing the introduction of a general supply from a distance and from a pure source. It remains to be seen whether the plans of the London County Council or those of the existing water companies are likely to prevail.

The Water Supply of Paris.

The growth of Paris has compelled the authorities to search for a more abundant supply of water, and the necessity of providing against the possibility of a water-famine during the coming international exhibition is forcing itself upon their attention.

The daily consumption of water is 121,000,000 gallons, or 28½ gallons per head of the present population. It is estimated that the population of the city will have increased in 1930 to three and one-third millions. Only 55,000,000 gallons of the daily supply are available for domestic use, and this would be sufficient were it not for the excessive waste. A portion of the water comes to the city through three conduits, respectively 64, 108 and 82 miles in length. Several projects are proposed to increase the supply: (1) to bring the water from Lake Geneva, 310 miles distant, at a cost of $125,000,000. This was rejected as impracticable. Another plan, involving the construction of an immense storage reservoir, has been abandoned, and it is now considered preferable to increase the supply by conducting the water of certain springs at the sources of the Loing and Lunain. It is also intended to filter the river water through beds of sand. In brief, the plan is as follows: The aqueducts from the Loing and Lunain are to be finished in two years. Filtering beds are to be made, increasing the quantity of filtered water per day from 11,000,000 to 14,300,000 gallons. A reserve of river water equal to 28,600,000 gallons per day is to be provided. Plans are to be further prepared for bringing a fresh supply of 35,200,000 gallons of spring water per day to Paris, and works are to be constructed for its distribution.[30]

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[1] Texas Medical Journal, August, 1895.
[2] Boston Medical and Surgical Journal, March 4, 1897.
[3] La Obstetrique, November 15, 1896.

Filtration of Surface Water in German Cities.[31]

After the last cholera epidemic in Germany the Government insisted upon the importance of filtering the water of such supplies as were drawn from the surface. Koch and Piefke laid down certain rules which were generally accepted by experts. They stated that filtration should be conducted within definite rates of speed, and proposed the limit of 100 cubic decimetres per square metre per hour. Special attention should be given to the cleaning of the sand. Its depth should never be less than 30 centimetres. The first effluent of a recently cleaned basin should be rejected, and not used for drinking. Great importance is attached to the bacteriological examinations, which should be conducted daily for each filter. When the water of a filter contains more than 100 bacteria per cubic centimetre it should be rejected as drinking-water.

The author publishes a statement descriptive of the filtration plant of each of the 26 principal cities in Germany which take their supplies from streams and lakes, including the large cities of Berlin and Hamburg. All of the essential details are presented for each establishment very much after the plan pursued by the Massachusetts State Board of Health in its special document of 1890 upon the "Examination of Water Supplies." These give the date of construction and additions, the daily consumption, the sources, the number of filter-basins covered or uncovered, their area — depth of sand, its character, methods of washing and cleansing it, with many other important items.

In the last part of the report a statement of the progress made in the three years 1894–1896 is presented, especially in the line of reduction of the rapidity of filtration.

A series of diagrams and tables is also presented, in which the results obtained in the different establishments may be compared.

The Normal Chlorine of the Waters of Jamaica.

Richards and Hopkins[32] examined the natural waters of the Island of Jamaica and confirmed very conclusively the researches of the State Board of Health of Massachusetts in its examinations of the natural waters of Massachusetts, to the effect that the ratio of chlorine in the unpolluted waters of the State diminishes with remarkable uniformity from the sea-coast inwards, and this ratio of chlorine forms a valuable index or standard of comparison for any given region.

The authors present a table, and a map of the Island of Jamaica with isochlorine lines, ranging from a maximum at the sea-coast to .30 per 100,000 parts as a minimum in the inland regions of the island.

A Comparison of deep Well and Filtered River Waters with Reference to the Prevalence of Typhoid Fever among Consumers.

Dr. H. Smee, medical director of a large life insurance company, publishes an array of figures[33] to show that the people using filtered river water enjoy a much greater immunity from typhoid fever than those who use the water drawn from wells in limestone regions, or from swampy districts.

The following cities, which draw their water from wells in chalky strata, had a typhoid mortality per million inhabitants in 1896 as follows: Hull, 280; Norwich, 193; Epsom, 190; Portsmouth, 153.

Cities taking surface water from mountainous or marshy districts: Belfast, 560; Dublin, 453; Liverpool, 322; Glasgow, 223; Leicester, 203.

Cities using filtered river water: Hamburg, 58; Cologne, 49; Frankfort, 42; Altona, 41. London, which had a mixed supply (filtered river water and wells in chalk), had a typhoid mortality of 137 per million.

Discharge of Crude Sewage into Tidal Waters.

H. B. Nichols, C.E.,[34] presents a list of places on the coast of England which discharge their sewage into the sea, or into tidal rivers, with a brief table stating the method of disposal. He concludes that, "only where there is a rapid seaward current is it permissible to discharge crude sewage into tidal waters, and then only in receding tides. Where float experiments, over a lengthened period, show that there is a likelihood of sewage returning to the point of outlet, or being carried on to the foreshore, it is advisable for the sewage to be treated. In the majority of instances clarification is all that is necessary, and this can be accomplished by precipitation in tanks, or on the biological principle as adopted at Exeter. To ensure perfect immunity from danger, however, the outlets should always be carried to points where the currents tend seaward."

The Liernur System of Sewerage in Amsterdam.[35]

The Liernur system has been in successful operation in certain quarters of Amsterdam since 1870, and in December, 1879, the authorities decided that in all newly-built houses drainage arrangements were to be made for this or for some equivalent system of sewage disposal. These regulations have led to a great extension in the Liernur plant, and in 1896 there were 5,038 building-blocks with 86,907 inhabitants in 37 districts dealt with on this plan. Each of these districts is provided with a reservoir, usually situated at the intersection of two main streets. The reservoirs may hold from 2,860 gallons to 3,960 gallons, and they each receive the contents of eight lines of sewers, communicating with the house-connections on either side of the streets. The reservoirs are coupled with the vacuum cylinders with a capacity of 1,377 cubic feet, and by the opening of the valves the sewage collected in the various reservoirs is brought to the central station. Here the fecal matters are lifted pneumatically into two high-level tanks and then run into settling basins. The solids are converted into manure, the liquid matters are mixed with milk of lime, and the effluent is evaporated, the expelled ammonia being fixed by means of sulphuric acid. Details are given of the lengths of sewage and air-pipes, cost of construction and treatment, and annual cost of the system per head of the population. The average volume of sewage dealt with weekly is 417,000 gallons, and of this one-eighth goes to the solid manure heap, one-eighth consists of lime sludge, and three-quarters are evaporated to expel the ammonia. At the beginning of 1897 the works were again extended, and the city authorities will shortly have to face the difficult question of whether the Liernur system will have in the future to take all the domestic waste-water, or whether a second system of sewers will have to be provided for the fouled water from the new quarters of the town.

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[30] The Surveyor, London, January 6, 1899.

[31] Pannwitz, in Arbeiten aus dem Kais. Gesundheitsamte, 14, p. 153, 1898.

[32] The Technology Quarterly, December, 1898, p. 227.

[33] British Medical Journal, June 25, 1898, p. 1667.

[34] Journal of Sanitary Institute, January, 1899, p. 603.

[35] Glasers Annalen f. Gewerbe und Bauwesen, March 1, 1898, p. 93.

The Shone Separation System in Arad, Hungary.[36]

Gärtner recently visited Arad, and took this occasion to inspect the Shone system of drainage, introduced in 1885–1896, which has been in successful operation since August, 1896. The town includes a total population of about 50,000 inhabitants, and this system is in use for a thickly populated district comprising 829 houses, occupied by about 20,000 persons in all. The ejector-stations, air-compressors and pipe-system have been designed for a population of 30,000, with a view to extension. A main sewer, constructed of best stoneware pipes, 21,653 yards in length, with a fall varying from 1 in 50 to 1 in 200, with 1,600 connections to house drains, 168 man-holes or lamp-holes, and 41 self-acting flushing tanks, conveys the sewage-water to five of the deepest points selected for ejector-stations. Owing to the sharp fall, and the small diameter of the pipes (the average size being about seven inches), the sewers are self-cleansing and free from obstructions. No stoppages have at any time occurred. The five ejector-stations are sunk in iron-lined shafts from 23 feet to 24½ feet in depth. At each point the ejectors are in duplicate, in case of injuries or stoppages. They vary in size from 250 gallons in capacity down to 100 gallons. The air is compressed from 1.5 to 1.7 atmospheres. The sewage-water, which reaches the ejectors by gravitation, is forced up through rising mains, from three inches to five inches in diameter, to the irrigation plots, which are very rudely laid out. The total daily working cost, excluding interest and sinking fund on the sum expended on the construction of the works and plant, is 25s. The authorities are satisfied with the system and intend to extend it.

Industrial Sewage.

Wilson[37] specifies the following trade-liquids as requiring special treatment: (1) The suds from mills in the wool and silk trades, and especially from the process of wool-washing; (2) the discharge from certain classes of mills in the wool trade, which contain much fibrous waste; (3) the waste from tanneries; (4) the waste from breweries; (5) the waste from paper-mills.

Arsenic in Sewage.

Arsenic in sewage prevents the growth of bacteria, and hinders the processes which depend on bacterial action. Experiments by the State Board of Health of Massachusetts show that the arsenic can be completely removed by a filter of coke-breeze or iron-filings.[38]

FOOD AND DRUG INSPECTION.

The Use of Food Preservatives.

Dr. James Niven, Medical Officer of Health of Manchester, presented to the Town Council a report[39] upon the use of food preservatives, July, 1898, the general tone of which is opposed to their use. With reference to the extent of their use he says:

Mr. Ernest L. Fleming, who has given special attention to the use of boric acid and borax in the preservation of foods, estimates the total annual amount of these materials at present used throughout the world for preserving food at 6,000 tons, of which the United States will use 2,000 tons.

Considerable amounts are also used in England, Norway, Denmark and France. The largest amounts are employed in curing meat, ham and bacon.

Sanitary Control of the Milk Supply in Copenhagen.

In an excellent paper before the Sanitary Institute of Great Britain[40] Dr. James Niven quoted the principles which govern the Copenhagen Milk Supply Association, which are as follows:

(1) The milk is brought from well-managed farms, where the strictest cleanliness is exacted in cowshed and cow.

(2) The cows are frequently and regularly inspected by a staff of veterinary surgeons attached to the company.

(3) Infectious disease is guarded against by a most liberal system of dealing with farmers and employees when infectious disease occurs in their families.

(4) The taste and quality of the milk are ensured by prescribed and well-considered modes of feeding the cows.

(5) Injurious changes in the milk are averted by a well-planned system of cooling the milk from the time it leaves the cow till it reaches the consumer.

(6) Fraudulent tampering with the milk is guarded against by ingenious and effective precautions.

(7) The utmost *régime* of cleanliness is exacted in all milk vessels, dairies, etc., while the milk is carefully filtered clear of all impurities.

The final article is thus rich, fragrant, clean, and free from danger.

An equally successful company on the same lines exists at Berlin, and a similar company is being inaugurated in Manchester.

The following resolution was also proposed by Dr. Niven: "That all public institutions, hospitals, asylums and public services ought to obtain milk from herds guaranteed free from tuberculosis by a competent veterinary surgeon."

Dr. Niven also quotes a report of Dr. E. W. Hope, of Liverpool,[41] relative to the milk supply of that city, to the effect that "144 samples of milk from the city cowsheds and 24 samples taken at the railway stations were distributed to four bacteriologists of eminence. Of the former 2.1 per cent., and of the latter 29.1 per cent., were found to contain tubercular infective matter.

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[36] Deutsche Vjs. f. öff. Gesundheitspflege, vol. xxx, 1898, p. 229.

[37] Journal of Sanitary Institute, April, 1898, p. 17.

[38] Senate Document No. 4, Massachusetts, 1897, p. 79.

[39] The British Food Journal, February, 1899.

[40] Journal of the Sanitary Institute, January, 1899, p. 550.

[41] Journal Sanitary Institute, January 1899, p. 538.

"The milk from nineteen tuberculous cows in Manchester cowsheds was sent to Professor Delépine, who found, on examination, that five samples contained the tuberculous infection, all of them from tuberculous udders.

"Since that investigation was made 93 samples of milk taken at random at Manchester railway stations have been submitted for examination to Professor Delépine, and of these no fewer than 17, or over 18, per cent. contained tubercular infective matter. Now, if it is true that milk is only virulent when derived from tuberculous udders, then the farms from which these milks were derived ought to contain cows with tuberculous udders. Accordingly, the Sanitary Committee of Manchester instructed Mr. King to request the farmers to permit him to examine their cows. Sixteen out of the seventeen farms were examined, and on fourteen of these at least one cow was found with an indurated udder. It thus appears that at present an enormous stream of infectious milk is pouring into our cities, and that the matter is truly one of urgency."

Kanthack and Sladen[42] report the results of a study of the effect upon the spread of tuberculosis produced by the various milk supplies to the different colleges of Cambridge, Eng. In the experimental observations six guinea-pigs were used daily, two being inoculated on two successive days with each sample of milk. It was found that of ninety animals inoculated twenty-three died from tuberculosis — 25.55 per cent. Of these twenty-three thirteen were inoculated with the creamy layer and ten with the sediment. Of sixteen dairies examined the milk of nine caused tuberculosis. These figures are little less than startling, and, while it is probable that not all who ingest tuberculous milk are infected, the risk is one not to be invited or considered lightly. The remedy nearest at hand is thorough sterilization of the milk; but apart from the fact that every one can not or will not use such milk, the correct solution of the difficulty consists in suppressing the sale and use of the milk from tuberculous animals, or, even better, preventing the sale or use of any milk that is not certified as being derived from cows known to be free from tuberculosis. Of the necessity of some such precaution further evidence is afforded by the detection, by a number of trustworthy observers, of tubercle bacilli in butter.

The Present Condition of Bovine Tuberculosis in Europe.

Professor Coun[43] has recently published under the foregoing title an excellent *résumé* of his investigations during a year's sojourn in the principal countries of Europe. The following are his conclusions, some of which are quite as applicable to American conditions as to those which exist in Europe:

(1) The passage of tuberculosis from man to animal or from animal to man must be regarded as not a common method of dissemination. Bovine tuberculosis and human tuberculosis, though produced by the same bacillus, represent two separate problems.

(2) Bovine tuberculosis has assumed alarming proportions in regions of Northern Europe, more than half the animals being infected.

(3) The only efficient method of combating the disease among cattle is by separation of healthy from infected animals, either by isolation or slaughter.

(4) To determine whether any cattle in a herd are infected and ought to be isolated from the others, it is necessary to resort to the tuberculin test. This test should be used to aid the farmer in building up a healthy herd, but not to condemn all reacting animals to slaughter.

(5) The history of tuberculosis in European herds will be the history of our own herds, unless our farmers wake up to the necessity of battling with the disease at once.

The Sale of Meat and Milk of Tuberculous Cattle

The Royal Commission upon the "Administrative Procedures for Controlling Danger to Man through the Use, as Food, of the Meat and Milk of Tuberculous Animals" presented its report to Parliament April 19, 1898. Its recommendations deal with the following topics: (1) the regulation of slaughter-houses; (2) the qualifications of meat-inspectors; (3) tuberculosis in animals intended for food (what carcasses or parts of carcasses should be condemned); (4) milk (disease of the udders in cows); (5) sanitary regulations of cowstables; (6) the elimination of bovine tuberculosis and the use of tuberculin.

Meat-poisoning.

Basenau[44] says most cases of meat-poisoning are traceable to the flesh of animals slaughtered *in extremis*, and cites the following figures, which show the greater proportion of cases of injurious meat obtained from animals slaughtered *in extremis*, as compared with those which are killed in the ordinary way at Baden:

	Out of 1,000 slaughtered in the usual way.	Out of 1,000 slaughtered *in extremis.*
Cattle . . .	1.6 cases.	128 cases.
Calves . . .	0.4 case.	4.9 "
Sheep . . .	0.2 "	20.2 "
Pigs	0.3 "	63.4 "

Poisoning by Canned Food — Its Variety and the Extent of the Business.[45]

The German law forbids the use of the tinplate which contains more than one per cent. of lead or more than ten per cent. in the solder. The soldering should be on the outside of the can. The date of canning should be stamped on each can.[46]

Food Preservatives.

The *Lancet*, August 27, 1898, justifies to a limited extent the use of such mild antiseptics as borax as a food-preservative. But the consumer should be notified of its use, and limits should be imposed by the State.

Papers used as Food-wrappers of Food-preparations.

The *Com. Cons. d'Hygiène publique*, of France, has made an examination of papers used as food-wrappers in France, such as newspapers, circulars, leaves of large books, and concludes that (1) printed newspapers, prospectuses, leaves of books, etc., ought not to be used as food-wrappers; (2) also old registers and commercial papers.

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[42] Lancet, January 14, 1899, p. 75.

[43] Bulletin No. 19, February, 1899, of the Storrs Experiment Station of Connecticut.

[44] Arch. f. Hygiene, 32, 3.

[45] See Journal Sanitary Institute, April, 1898, p. 58; see also article entitled "Die Nahrungscontrole in Hamburg," Dunbar: Hyg. Rundschau, Berlin, February 15, 1899, p. 161.

[46] Gesundheitsbüchlein, Berlin, 1895, p. 140.

SCHOOL HYGIENE.

Dr. Schäfer,[47] of Strasburg, divides the hygienic precautions requisite for the public schools into two classes — general and specific; the former dealing generally with the air, soil and water, by which infection is usually conveyed, and the latter with infectious diseases common among school children. The precautions necessary to prevent the spread of infection are the immediate recognition of the first case, its isolation and oversight, and the disinfection of the infected articles.

Essential regulations in regard to school hygiene are as follows: (1) General school hygiene as a basis of all prophylactic measures; (2) exclusion of pupils from school; (3) closing of school; (4) disinfection; (5) medical supervision of schools; (6) criticism of the regulations in force.

Under Section 3 he presents the following statement with reference to the number of times that schools were closed in Schleswig-Holstein in the four years, 1879–1882, and the causes for which they were closed:

Cause for closing.	Number of closures.	Cases in which schools were closed on acount of illness in teacher's family.
Measles . . .	82	18
Scarlet-fever . .	99	23
Diphtheria . .	52	22
Whooping-cough .	6	1
Typhoid fever . .	3	3
Dysentery . . .	1	1

In the case of measles, schools occasionally were closed for want of sufficient scholars to attend them.

Fizia presents a similar list in support of the foregoing observations. With reference to districts where the faulty custom prevails of housing the teacher's family in the school-house: if the cost of disinfection after convalescence and the loss of instruction borne by the district are considered the material loss is great. Medical supervision is essential to the physical health of the scholar, even though one is satisfied with a single thorough examination of all the children at the beginning and end of the school year. Constant medical supervision could not be accomplished in small country districts by a single physician. If the duties of a school physician are performed after the manner of Hermann Cohn a physician would be needed for almost every school. Von Reuss proposes to give the general supervision to a medical officer and the detailed work to ordinary physicians. He deems the teacher's aid most valuable, however, since, like the mother, she will detect illness in the child with whom she has become familiar by constant daily intercourse sooner than the physician, who, under the most favorable circumstances, sees the children only once a day.

Air Moisture in School-rooms.[48]

Medical Inspection of Schools.[49]

HYGIENE OF INFANTS.

Establishment of Crèches.

Marbeau founded the first *crèche* in Paris, in 1844. He proposed a law that every parish in which there were one hundred women at work away from their homes and every factory in which more than one hundred women are employed should furnish a *crèche*. Such a law is in force in Portugal.

Paris now has nearly one hundred *crèches*. The city proposes to erect a large city *crèche*, where training courses may be had for mothers and young girls who have children to care for.

Nursing-bottles.

The *Com. Cons. d'Hygiène*[50] in its last annual report, 1898, p. 17, recommends (1) that the local authorities should forbid the use of nursing-bottles with long tubes; (2) that a nurse who uses such bottles shall not be entitled to pay; (3) that the local authorities should distribute gratuitously to indigent nurses bottles capable of easy cleansing; (4) that these authorities should exercise a rigorous supervision over the articles used for feeding infants.

The Effect of Rest during Pregnancy upon the Infant.

Professor Pinard[51] presents an array of facts in support of his proposition, that women who pass a considerable period in repose before the time of confinement produce larger and better developed children.

Briefly stated, his proposition is "that pregnancy is more likely to be of a normal character, and the ovum is more likely to be developed naturally, in so far as the mother is placed during pregnancy in a favorable environment. On the contrary, a woman exposed to fatigue is liable to premature delivery.

In support of this proposition he presents the following groups of observations upon 4,455 pregnancies, part of which were made at the clinic Baudelocque, and a part at the Maternity of Furcoing.

In general they demonstrate with "mathematical certainty that repose or fatigue during pregnancy has a definite effect on the weight of offspring, and that the weight of a new-born infant of a mother who has been at rest during the two or three months before delivery is greater by at least 300 grams (about two-thirds pounds) than that of a child whose mother has worked in the upright position up to the day of delivery.

The following are the principal figures presented in support of the foregoing statements:

	Mean weight of child in pounds at delivery.	
	Primiparæ.	Multiparæ.
Women who had worked in the upright position up to time of delivery	6.45	4.64
Women who had worked upon textile fabrics in upright position	6.57	6.85
Housewives and seamstresses of the maternity	6.67	5.11
Women who had worked in the sitting position up to delivery	6.81	7.27
Sewing-machine workers who had worked up to delivery	6.49	7.04
Women who had been at rest for 2 or 3 months	7.24	7.60
Women who had been at rest for more than 3 months	7.16	7.60
Women who had been at rest, time not stated	7.16	7.60

The mean age of the primiparæ was about twenty-two years and that of the multiparæ about twenty-seven years.

The author sustains the view of Dr. Bachimont.[52]

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[47] Deutsche Vierteljahrschrift f. öff. Gesundheitspflege, 30, 4, p. 617, 1898.

[48] Connecticut School Document No. 13, 1898, p. 27; see paper by S. H. Woodbridge on School Hygiene.

[49] Kolle of Wiesbaden: Vierteljahrschrift f. öff Gesundheitspflege, 3, 433, 1898.

[50] Paris, 1899, Baillière et fils; see also chapter 4 of Gillet's Formulaire d'Hygiène Infantile, entitled Hygiène des Crèches, also paper entitled "Ueber Mortalität und Morbidität in Säuglings-Spitälern und deren Ursachen," Dr. H. Finkelstein, Zeitschrift. f. Hygiene u. Inf. Krankheiten, 28, 1, 125, 1898

[51] Revue d'Hygiène, December, 1898, p. 1072.

[52] Dr. F. C. Bachimont: L'histoire de la puericulture intra-utérine, Paris, 1898.

who concludes a valuable paper on the same subject in the following language: "From the point of view of humanity, from that of increase of the population, and the evolution of the French race, it is necessary that the public authorities should take action to protect the mother during pregnancy, and the fetus during the last three months of intra-uterine life."

CAUSES OF INFANT MORTALITY IN MASSACHUSETTS, FIVE YEARS, 1892–96.[53]

The following are the specified causes from which infants under two years of age died in Massachusetts during the five years, 1892–1896, the total number of such deaths being 66,805:

Causes.		Under 1 year.	1–2 years.
1. Whooping cough		942	339
2. Cholera infantum		11,708	1,663
Diarrhea		1,467	198
Enteritis		3,005	502
3. Diphtheria and croup		562	1,276
4. Tubercular diseases:			
Tabes mesenterica		4,344	444
Phthisis		624	311
Hydrocephalus		1,090	563
5. Pneumonia		3,741	1,720
Bronchitis		2,826	8'9
6. Cephalitis		2,831	1,284
Convulsions		2,754	683
7. Heart disease		741	42
8. Infantile diseases		843	5
Premature birth		5.064	2
Atrophy and debility		5,493	149
9. Violence		805	206
From suffocation:			
Under one	628		
One to two	9		
10. Unknown		589	57
11. All other causes		5,438	1,678
Total		54,867	11,938

Estimation of Carbonic Oxide in Atmospheric Air.

Maurice Nicloux's [54] method of estimating traces of carbonic acid in the air is founded on the fact that, at a temperature of 150° C., this gas reacts with anhydrous iodic acid, with formation of carbon dioxide and liberation of iodine.

The amount of iodine thus set free can be determined by Rabourdin's process, which consists in dissolving it in chloroform and comparing the color of the solution with the color of chloroform containing a known quantity of iodine. The general arrangement of the apparatus is described. It is necessary to free the air from hydrogen sulphide and sulphur dioxide, which also have the property of setting free iodine under similar conditions. The method is capable of detecting one part in 50,000, and not more than three litres of air is required. When the apparatus is first set up several blank experiments should be made.

The Effect of Temperature upon the Mortality from Phthisis.

Observations extending over a series of years, and embracing many thousand deaths from phthisis in Massachusetts, show that the greatest number of deaths from this disease occur in April and the least number in July. Messrs. Buchan and Mitchell [55] stated with greater accuracy that the maximum death-rate from the same disease in London occurred in the eleventh week (March), and the minimum death-rate in the thirty-seventh, thirty-eighth and thirty-ninth weeks of the year (September).

The monthly curve for phthisis is more uniform than that of almost any other disease, except cancer. Dr. Longstaff says, "It would appear that the inexorable diseases, phthisis and cancer, keep their victims alive, so to say, till they have finished with them, jealously resenting any interference. Of course the very chronic character of these diseases to a great extent explains this.[56]

A very good illustration of the effect of temperature on the death-rate from phthisis is afforded by comparing the monthly mortality curve of this disease, in any district or country in the north temperate zone, with a similar curve drawn from the mortality figures for a community living in the south temperate zone. For this purpose we have constructed the accompanying table and diagram from the statistics of the deaths from phthisis in Massachusetts [57] and in Buenos Ayres.[58]

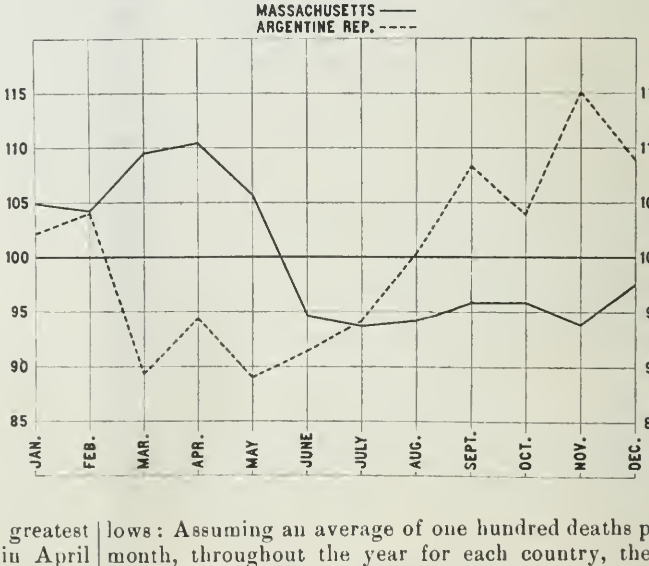
Monthly Mortality from Consumption in North and South Latitudes Compared.

Figures of Massachusetts and Argentine Republic.

	Centesimal Ratio.			Centesimal Ratio.	
	Massachusetts.	Argentine Republic.		Massachusetts.	Argentine Republic.
January.	104 9	102.1	July.	93.7	94.2
February.	104.2	104.0	August.	94.2	100.3
March.	109.5	89.3	September.	95.8	108.3
April.	110.4	94.4	October.	95.8	104.0
May.	105.6	89.0	November	93.8	115.2
June.	94.6	91.4	December.	97.5	108.9
			Mon. av'ge.	100 00	100.00

In the foregoing table comparison of the figures for the two latitudes is made possible by reducing them to a centesimal ratio; the table should be read as follows: Assuming an average of one hundred deaths per month, throughout the year for each country, there were in Massachusetts 109.5 deaths from consumption in March, and 89.3 in the Argentine Republic in the same month, etc.

RELATION OF MORTALITY FROM TUBERCULOSIS TO CLIMATE.



In this table the errors due to unequal length of the months are eliminated: The deaths from which this table was calculated were 112,837 from consumption in Massachusetts during twenty years (1876–1895) and 11,889 from the same cause in the Argentine Republic in the nine years (1889–1897).

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[53] From Journal of Massachusetts Association of Boards of Health, December, 1898.

[54] Comptes rendus de l'Académie des Sciences, Paris, vol. cxxvi, 1898, p. 746.

[55] Journal of the Scottish Meteorological Society, July, 1875.

[56] Statistical Studies, London, 1891.

[57] Twenty-eighth Annual Report of State Board of Health of Massachusetts, p. 771.

[58] La Tuberculosis en Buenos Ayres, Dr. Ramirez, Annales del Departmento Nacional de Higiene, Buenos Ayres, September, 1898, p. 567.

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Reports of Societies.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

J. A. MEAD, M.D., SECRETARY.

The Society met at 19 Boylston Place, Boston, Wednesday, February 1, 1899, the President, Dr. B. H. Hartwell, in the chair.

Dr. E. G. Hoitt, of Marlboro, read a paper on

THE MURDER OF JOHN DEAN.[1]

Dr. E. S. Wood: Mr. President, I have very little to say in regard to the blood stains; of course that is the point on which I am asked to discuss the case. I received from the State officer all of the clothing belonging to the defendant, Barnes, which appeared to have any blood stains upon it, and the important part of the blood work consisted in the detection of many of the blood stains. It was alleged by Barnes that the blood on his clothing came from himself in the tussle with his supposed assailants; but the direction of many of the stains showed that this was absolutely impossible, and that they were thoroughly consistent with the stains coming from the head of the victim, as it lay upon the floor of the room, as shown in the photographs. There is one point in regard to the photographs which Dr. Hoitt did not lay stress upon, and that is the mark on the sideboard, showing where the head struck the sideboard and made a different kind of a stain, on account of brushing marks of the clotted hair.

Barnes's rubber boots were brought to me at the time; these he had replaced on the evening of the murder with a new pair, and had thrown the old pair over the bridge, supposedly into the river; but it so happened that the river was frozen and the blood stains on the boots were not washed off, so they were intact when handed to me. On the right rubber boot there were eight quite large spatters. One important one was on the inside of the leg of the boot, eight inches from the top, and over one inch long, and had a direction from the front backward, showing it had been probably against the inside of the upper surface of the right foot from a point nearly at the same level as the middle of the boot leg, and it was at a point eight inches from the top of the ordinary rubber boot. There were seven other spatters upon the boot, and I counted small spatters on the front of the leg, mostly on the inside, and some showing a direction from above downward, others showing a direction downward and backward, and others directly backward, as though some of the blood struck the boots as it was falling over directly against the boots on a level. On the left boot there were not so many, although there were a great many blood stains on the front, and particularly about the instep on the inside and on the outer instep. The trousers had three stains upon the right leg, not of any great importance. One was a rubbed stain, which occupied a position corresponding to the one at the top of the rubber boot which had a rubbed stain upon it. The left leg had two stains upon it, not of any very great importance. The jacket, of brown mackintosh cloth, had three stains on the right sleeve, and on the left front two stains, and on the left sleeve four spatters, one up near the shoulder, the other three down near the edge of the sleeve.

I would state in reference to all of the blood stains examined, in order to determine the question as to its human or animal origin, that the diameter of the red blood stains averaged between $\frac{1}{3200}$ and $\frac{1}{3300}$ of an inch, and therefore was consistent with the belief that it was made by human blood, and that was not disputed, as the prisoner stated that the blood came from himself in the struggle.

There was another blood-stained object that was of a good deal of importance, and that was a milk-pail which had fallen somewhere near the victim, and it left spatters both upon the inside of the cover (that is, the half-cover of a milk-pail), and the spatters were in such a position that it would have been absolutely impossible for the blood to have come from Barnes in any struggle with the alleged assailants. That was one of the principal items in his defence — that the blood stains came from his nose-bleed, or from himself, in his struggle; there was no wound upon him, therefore the only place from which he could have bled was the nose, and the direction of the stain on his boots showed that they could not come from his nose-bleed; also the direction of the stains on the milk-pail showed that the stains came from the direction of the head of the victim, in the position that the milk-pail was upon the floor, and not in a position to come from one struggling near the place.

There is one other thing which I forgot, Mr. President, and that is in reference to the finger-print marks on the axe-handle; I did not think of it when speaking, because the investigation is not complete. If I had thought of it I would have brought a most excellent photograph of the prints upon the axe-handle. I have not had the time to work it up as to whether these were the finger prints of Barnes or not. I have most excellent photographs of every print of Barnes's fingers, and think I shall be able to compare with each finger the prints that were made on the axe-handle. This subject is still being worked up, though the case, so far as law is concerned, is ended.

Dr. O. J. Brown, of North Adams, read a paper entitled

A DOUBLE HOMICIDE — ITS MYSTERY.[2]

Dr. Quimby: I would like to ask about one matter, and that is the obtaining of photographs: is that expense attended to by cities and towns, or the district attorney?

Dr. Brown: In my case, and in cases I have had before, Mr. President, I have attended to the expense myself, and presented the bill to the county commissioners; they have always audited the bill without asking any questions. I do not know whether this is the general practice, but it seemed to me a feasible way of doing it.

Dr. Hough: I would like to ask why the reader did not feel absolutely positive that the mallet found was the weapon with which the man was killed.

Dr. Brown: While I do feel morally certain that that was the instrument used, from the position in which I found it lying, and from the fact that it fitted so nicely the wounds made, perhaps I could not say I was positively sure; if I was asked by the Court I should say, yes, that it was my opinion that it was the instrument used. There is a probability of that being the instrument used, beyond a reasonable doubt.

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[1] See page 297 of the Journal.

[2] See page 301 of the Journal.

Dr. Draper: I want to say, in regard to the question, that I do not think it quite a proper one. I do not believe in a capital trial it would ever be asked of a medical witness, "Is that the weapon that made those lesions?" The question would be "Could a weapon like the one in evidence make the lesions you found?"

Dr. Hough: I was prompted to ask that question in regard to the mallet from some experiments which I made in regard to skulls of some animals. It would be impossible, unless you saw the deed committed, to say that such and such a weapon was used. I simply asked the question to see if others felt as I did. The same axe may produce a great variety of incisions; because that axe fits the dent it is no reason why that axe, instead of one similar to it, produced the wound.

Dr. Brown: The gentleman in this same case might say that this mallet may be placed over the wound already made, and that blood was placed upon it and left there for the purpose of misleading the officers.

Dr. Hartwell: I would like to mention one point in regard to the essay, and that is the position of the powder-mark in regard to the pistol-shot in the ear. Dr. B. D. N. Fish read a very excellent paper showing that, where powder-marks were made on the skin, they were invariably above the point wounded — above as regards the top of the pistol. This essay appears in the *Transactions* of this Society, in Volume I, and is very valuable, and of practical use to every medical examiner.

Dr. Draper: The characteristic position of the powder-burn on the skin was thought to be due to the recoil of the pistol. The explanation is set forth in Dr. Fish's paper. I do not think he laid so much stress on the powder-marks alone as upon the burning or brand, indicating just how the hammer was placed. If the hammer were up the brand would be above the bullet-mark; if the hammer were reversed and down the brand would be below, due to the recoil of the weapon; if the weapon were held in a vise, and fired in that position, the brand would not appear.

Dr. Hoitt: I read with a great deal of interest the paper alluded to; I made some experiments with powder, and there is no question but that powder-marks owe their situation with reference to the bullet-mark to the recoil. I had occasion a year or two ago in testing, to see the distance that flesh would be scorched by powder, and used common black powder; I tested the recoil of a single-barrelled gun or pistol. When the gun was made fast in a vise and fired the test was to see, when the powder was burning, whether the gun could burn over a certain quantity of powder, and I found that if one used more than a certain amount the excess was unexploded and wasted.

Dr John C. Irish, of Lowell, read a paper on

MEDICAL EXPERT TESTIMONY.[3]

Dr. Hough: The greatest difficulty that I have seen in this question of expert evidence comes in this way: The lawyers want experts who will look after the case the same way they do, strictly as partisans, not anticipating either truth or justice, but wanting to make the best possible showing for their side. The man who is conscientious or careful, or who refuses to be led into statements, and is not willing to agree to supply his own lawyer what he wants, will not be called by choice, although he may be called when absolutely necessary. In very few cases have I seen any difficulty about the agreement of experts. If the experts of the two sides can be brought together, and amicably discuss the case (I have very frequently been able to bring that about), the results so far as they concern conservative statements and answers to hypothetical questions, and avoidance of conflicting statements on the witness-stand, have been satisfactory.

In the important matter of traumatic neurasthenia, I think we all now agree fairly that there is such a thing. I have had occasion to follow up a few cases (only three or four) of so-called chronic neurasthenia after the legal part had been settled one way or the other, and as far as such a small number of cases goes I feel that there is a real neurasthenia case, and genuine chronic neurasthenia, for patients have the elements of neurasthenia for an indefinite time after the settlement of the case, and it makes no difference whether the case is settled out of court or in court.

As for the mode of using expert testimony, whether it is open to improvement or not I do not know. I think many of us, who have read a good many foreign papers, will agree that they do things better in France and Germany than here. It is a question of national disposition, whether our juries will be properly impressed by the report of a scientific committee on the course or examination of a medical case. I think anybody would be inclined to think that in examining medical experts anything would be better than the present mode of procedure.

Dr. Draper; I want to say at the outset that I am in substantial sympathy with the views of the reader of the paper, and in accord with his very just ideas as to the conscientious work on the part of the members of our profession. It seems to me that the difficulties in regard to expert testimony may be brought down to two classes. One of the difficulties arises from the fact that, although we are all honest, we are all human, and when called into court, as we ordinarily are, by lawyers, not by judges, we go there with an unconscious and inevitable bias of partisanship, which is developed by the manner in which cases are prepared. As the reader in his supposed case put it, a person seeks for redress by damages, and for the purpose of substantiating his side secures the aid of medical expert evidence. He has no use for candid persons, but wants to go before the jury with witnesses who will help him to accomplish his end. The expert goes into court so handicapped with prejudgment of the case that he cannot keep that poise which is so indispensable for strict administration of justice. Another difficulty arises from the rules of law and the limitations imposed on medical men by the judicial usages and methods under which they are examined. Questions are asked requiring categorical answers, without the full statement of the opinion which the witness has in his mind, and without any candid expression, which would be understood before his own professional brethren, about the case in hand. These two kinds of obstacles include nearly all that is objectionable in the prevailing system. In regard to the practicability of reform, I admit that my views have changed considerably in the past fifteen years. I know there is very strong objection to any change, and we shall look in vain for help from the Legislature; lawyers object to any reform that will bring about a new method of using experts, because they insist on having control of all the evidence that will be favorable to their side. So I think we can unhesitatingly say that lawyers will oppose effectively any attempt on the part of physicians to bring about reform.

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[3] See page 299 of the Journal.

There are two ways left to us as physicians that will help, in my opinion, in improving medical evidence. One, which is often suggested, is that in every case which is brought into litigation there shall be full examination of the plaintiff by medical experts on both sides, that the patient shall be examined in the presence of all, so that there shall be agreement as to the facts and objective data of the case. And, in the second place, it is important that every one of us shall try to equip himself with the utmost honesty and candor of which he may be master, thus trying to overcome, as far as possible, the difficulties which are so apparent to every one of us when we go into court.

Dr. Hough: I should like to ask Dr. Draper his experience in answering questions in court, whether the judges are not willing to allow him the greatest possible latitude in explaining his answers to these questions. Lawyers are extremely anxious to pin us down to "yes" and "no," but I find judges different, allowing physicians to explain, with as many qualifications as they desire, and never compelling them to limit the answer to plain "yes" or "no."

Dr. Draper: In my own experience, they want categorical answers, but will let explanations come later. I have been repeatedly required to answer plain "yes" or "no," and then, if I wanted to qualify the answer, I could do so, but I sometimes found it was then too late, and that a wrong impression had been made by the arrangement of the elements involved in the reply.

Dr. Hough: This must be peculiar to individual judges. It has not been uncommon, in answer to questions, that the lawyer wanted "yes" or "no"; but it is impossible to say definitely "yes" or "no"; the answer must oftentimes be a qualified one, and the judges have always upheld me.

Dr. Abbott: The suggestion in the last part of Dr. Irish's paper struck me as feasible — placing the hired expert above the plane of partisanship.

It does seem to me that the very existence of this Society has had its effect on the courts. I think, if we follow the trials that have taken place in the last ten years, less men of disrepute are employed than were employed twenty-five or thirty years ago, and I have no doubt that this is due to the existence of a society like this, which has done its best to elevate this function of the profession.

Dr. Hough: One other question I should like to mention in regard to the medical expert witness. I have heard lawyers say that a wonderful thing about the medical expert witness was that he apparently knew everything, and whatever was asked him he could give a fairly positive answer. I think, if the man would recognize that fact, and not try to give answers to everything. that not infrequently lead to his being tripped up, and if he does not know positively about a thing say so frankly, he will take away from the lawyers, who seem to dislike us so much, one of their sharpest weapons.

Dr. Hartwell: I believe that neither the courts nor the public are fully prepared for any change in our methods of expert testimony before the courts. I have heard judges say that they did not like hypothetical questions. I believe if these could be done away with (those requiring categorical answers) our position would be very much stronger than at present.

One point is certain, and that is that we are changing in our method of giving expert testimony; and I think it is also true that we are getting more real experts on medical and surgical cases, men whom we look to in matters of judicial cases. But I believe, nevertheless, that the testimony of the good old family physician, given with so much honesty, is the testimony upon which the courts are bound to rely. I believe there is a great power, with the jury, in the old family physician, and that his opinions, stamped with honesty, have very great weight. And, as we become very generally educated, this honesty shall enforce itself, because we shall base more upon fact and knowledge than we shall upon theory.

Dr. Irish: I have nothing to say in addition, except that, so far as the discussion has gone, it so well agrees with me that the improvement in this matter of medical expert testimony rests with the profession and the professional man, and the agreement in this Society that the great mass of physicians, who are all experts in our courts, are honest men.

Recent Literature.

Essentials of Materia Medica, Therapeutics and Prescription Writing. Arranged in the form of Questions and Answers for Students of Medicine. By Henry Morris, M.D., Fellow of the College of Physicians of Philadelphia. Fifth edition. Philadelphia: W. B. Saunders. 1898.

This book is a useful question compend for the study of materia medica and therapeutics. It is not and does not pretend to be more than this.

In the arrangement of the materia the author has attempted to classify the drugs upon the basis of their therapeutical uses. The adoption of a definite method of classification in place of the old system of arranging the drugs alphabetically certainly makes the compend more useful to the student.

The choice of a therapeutical method of classification is on the whole, we think, a wise one. The physiological method is the scientific one, but in the present state of our knowledge concerning the physiological action of many of our therapeutically important drugs it is doubtful whether such a method can be used with advantage.

The Refraction of the Eye. A Manual for Students. By Gustavus Hartridge, F.R.C.S., Senior Surgeon to the Royal Westminster Ophthalmic Hospital, etc., with 104 illustrations. Ninth edition. Pp. 267. London: J. & A. Churchill, Philadelphia: P. Blakiston, Son & Co. 1898.

This exceedingly useful little handbook has been reviewed in these columns several times before as the succeeding editions have appeared and it is not again necessary to add words of praise for this most practical and useful book of its class.

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ANNUAL REPORT OF THE BOARD OF REGISTRATION IN MEDICINE.

THE fifth annual report of the Board of Registration affords considerable food for reflection. The one idea most forcibly impressed upon us in looking through its pages is that such a board is eminently needed, and that the more rigid its examinations become within certain limits the more benefit will result to the community at large. What we require, and what our Board of Registration is trying to establish, is a standard of efficiency which will represent the best results of a broad-minded medical teaching. An examination on the general principles of the theory and practice of medicine is the means to this end.

Since the publication of the last report, a year ago, 492 individual examinations have been held; of these, 134 applicants were refused registration because of unsatisfactory examination. Owing to a certain looseness in the interpretation of the law it has been possible for rejected applicants to appear again and again at the succeeding examinations, without the requirement of an additional fee. The Board holds that this is demoralizing to the individual, as it certainly is to the system at large. The Board, therefore, recommends that but one re-examination be allowed without additional payment.

To prevent the possibility of favoritism each applicant is required to designate his papers, not by his signature but by a number, and he must attain a general average of 70 to be allowed to pass. As to the general character of the examination, "the law requires that the examination shall be of an 'elementary and practical character, and shall embrace the general subjects of surgery, physiology, pathology, obstetrics and the practice of medicine'; but, inasmuch as the law also requires that the examination shall be 'sufficiently strict to test the qualifications of the candidate as a practitioner of medicine,' the Board could not discharge its duty fully should it limit its list of questions to the particular branches mentioned. A thorough knowledge of anatomy is indispensable. Without it no one can be considered qualified to practise medicine."

In the pamphlet which the Board has sent out is given a list of the questions asked at the last examination and some of the answers given to these questions, with the orthography unchanged. Noticeable in these answers is not only the lack of accurate medical knowledge, but, what is almost as much to be deplored, the striking lack of ordinary common-school education. There could be no stronger argument for a required preliminary course leading up to the study of medicine. We quote a few of the answers given by those who failed in the examination as a whole:

Q. Describe connective tissue and state its function.

A. The connect all tissue of the body consist of connective cells as blood vessels and carry nutrition to all the parts of the body.

Q. State diagnosis and treatment of acute arthritis of the knee.

A. I make diagnosis by the presence of swelling, pain in walking, by the presence of pain in the other joints, by the albumen in the urine and diminished urea. Is differentiated from gout by the absence of the involvement of the meta-tarso phalangeal joint of the great toe.

Q. Give the symptoms of puerperal septicemia.

A. Tonic and clonic convuelsion there is headache principly of one side — ringing in ears flashes of light before eyes pupils dilated — nassua and vomiting Chill and fever they may come out of one spasm and seam to be all right then suddenly the muscles of mouth begin to twich there head rolls from side Verry violently and the conscience is entirely gorn as they do not know after the recover what they have been through only as they may have bitten the tongue there may be muttering delirium albumen is found in the urin.

These are three of a large number given in the report. We entirely agree with the view of the writer that "the necessity for such an examination is clearly shown by the fact that 38 per cent. of the class taking it were refused registration. It is further stated that seventy of the class were graduates from medical schools considered reputable, nearly all being recognized by the American Medical Association; nineteen of them were rejected as unqualified to offer their services to the public as physicians and surgeons.

The tabulation of statistics shows that Harvard University sends the largest contingent; of 94 examined but one failed. Tufts College is second on the list, with 40 examined and 11 failures. Of medical schools out of Massachusetts, the largest number came from the University of Vermont; of 29 who applied there were 5 failures.

On the whole, the statistics are of value in showing the general conditions of medical education, though, as from all statistics, conclusions should not be hastily drawn.

A NEW OPERATING THEATRE AND WARD. — A new operating theatre and ward is to be erected shortly at the Soldiers' Home, Washington, D. C., at a cost of $65,000.

THE PASSING OF THE ARMY CANTEEN.

Misguided energy on the part of a certain well-intentioned but extremely unpractical element in civil life has finally resulted in the enactment of a law by the last Congress, much to the disgust of the army at large, prohibiting the sale, by any person, of any intoxicating drinks or liquors "in any encampment, fort or premises used for military purposes by the United States."

To take the place of the vicious system of post-traders, abolished some years ago, the Government established the post exchange, better known as the canteen, which, in addition to the usual assortment of goods carried by a general store, was authorized to sell beer and light wines to the soldiers — the sale of distilled liquors being prohibited. The profits of this institution, which were chiefly limited to the sales of beer, tobacco and confectionery, were from time to time divided up among the several organizations serving in the post, according to their numerical strength, and were of material assistance in building up the company funds and so increasing the comfort of the men themselves.

Following the establishment of this system there was at once noticed a marked improvement in the moral and physical condition of the command. The canteen being constantly under military espionage and control the soldier rarely permitted himself, or was permitted by his comrades, to indulge in the milder beverages obtainable to the point of intoxication. The men consumed a moderate amount of an excellent quality of beer, for which they paid a reasonable price, and the low drinking resorts which had marked the outside limits of the military reservations, with their high-priced and sophisticated whiskey and brothel annexes, were largely forced out of existence. Drunkenness, immorality and disability as a result of alcoholism markedly diminished. The men were better fed, from the increased company funds, and, being able to buy their glass of beer in the post, they were better contented to remain in its more moral atmosphere. From the very outset medical officers were unanimously in praise of the canteen as judged by its results, and their first impressions were deepened into convictions with longer experience. Medical statistics for the three years, 1889–1891, show beyond possibility of doubt that the establishment of the canteen relieved our military posts of one-third of the cases of alcoholism that had previously tended to the demoralization of the individual; the loss of his services, from time to time, to the Government; infractions of discipline; assaults, injuries and death. During the three years named the canteen system was gradually replacing the old post-traders, and it is interesting to compare the annual admissions to hospital for alcoholism, per thousand of strength:

	1889	1890	1891
All posts with canteens . . .	42 95	41.76	39.82
All posts without canteens . . .	54.78	61.04	60.50

In 1889 the post of Willet's Point, N. Y., with no canteen, presented a rate of 272.97 for alcoholism, the highest in the army. After the establishment of a canteen at that post the rate for alcoholism fell to 157.50 in 1890 and 70.46 in 1891. At Fort McIntosh, Tex., the establishment of a canteen brought the annual admissions from alcoholism from 100.77 in 1889 to 30.77 in 1890 and 13.88 in 1891. Of the sixteen posts in which canteens had been started prior to 1891 not a single one failed to show a marked decrease in alcoholism. According to the last annual report of the surgeon-general the admissions for alcoholism during the past year, under the canteen system, were only 27.86 per thousand, or less than half the rate given eight years ago by the fourscore army posts in which there were no canteens.

In the face of figures like this, fortified by the ample experience of those who, like the medical officers, are in a position to see the beneficent workings of the institution, the House of Representatives voted without discussion even to revert to the old order of things.

We fully appreciate and deplore the misery and suffering due to alcohol, and are in earnest sympathy with any measures calculated to limit its use; but it is difficult to consider as anything but fanatics the short-sighted individuals who, like those who caused the repeal of the British Cantonment Acts, do not appear to realize the advisability of controlling and curtailing an evil which no legislation can ever prevent.

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MEDICAL NOTES.

The United States Army Hospital Train. — This train has recently been discontinued, the necessity for its maintenance no longer existing. Organized in June last, this train has been of great value in removing sick from the great military camps to the various general hospitals of the army.

Patriotism of Medical Men. — As illustrating the patriotism of the medical men of this country it is interesting to note that, since the beginning of the war with Spain, more than 10 000 physicians have offered their services to the Surgeon-General of the Army, over 4,500 of them within ninety days after the declaration of war.

Tropical Conditions and Army Supplies. — The tropical conditions under which a large part of our troops must for some time serve necessitating a reorganization of the supply table of the Army Medical Department have led to a general order convening a board of medical officers to meet in Washington, for the purpose of making recommendations in connection therewith.

Mortality at Camp Thomas, Chickamauga. — The Adjutant-General of the Army has recently issued a statement compiled from the muster-rolls of all the organizations which were stationed at that camp from its establishment in April to its abandonment in about the middle of September, including the two battalions which remained there as guard until January 1, 1899.

This statement shows that during the six months of occupancy there were 341 deaths from disease, or less than half of one per cent.

A School of Nurses for War.—It is announced that Princess von Hohenlohe, daughter of the German Chancellor, has organized a corps of nurses for the care of the sick and wounded in case of war. The nurses, at present about twenty in number, are all from the highest society. The instruction is at first theoretical, but is followed by courses in accident wards and in garrison hospitals.

Drs. Nancrede and Vaughn Honored.—Brevet commissions, in recognition of their valuable services under fire in the care of wounded in the action of Aguadores, near Santiago, while serving with the 33d and 34th Michigan Volunteers, have been recommended for Maj. Victor C. Vaughn, brigade-surgeon, U. S. Volunteers, professor of hygiene at the University of Michigan. and Maj. Charles B. Nancrede, brigade-surgeon, U. S. Volunteers, professor of surgery at the University of Michigan.

Camp Meade and a Hospital to be Re-established. — In anticipation of the early muster out of the volunteer forces now in Cuba the re-establishment for that purpose of Camp Meade, Pa., is announced by the War Department. Orders have been issued directing Maj. William R. Hall, surgeon United States Army, to at once proceed to that point and establish a hospital in anticipation of the arrival of troops. It is understood that this hospital is to have a capacity of 100 beds, and that the intention is to transfer to the civil hospitals in Philadelphia all cases which appear liable to require any extended treatment.

Effect of the Naval Personnel Bill. — The naval personnel bill, which passed the last Congress, gives the rank and pay of rear-admiral to the chief of each bureau, including that of medicine and surgery, promoting Dr. Van Reypen, the present incumbent of that grade. This bill also increases the pay of the medical officers of higher rank, but works to the disadvantage of those occupying the lower grades, the newly commissioned naval surgeon now having the rank and pay of a second lieutenant of infantry, where his *confrère* in the army begins his military career with the rank and pay of a first lieutenant of cavalry.

To Study Tropical Diseases.—The Johns Hopkins University is about to send a special commission to Manila, to spend a number of months in the study of tropical diseases. The party sailed from Vancouver on March 27th, and expects to return in the early autumn. They carry with them all the appliances for the furtherance of their work. The party includes Dr. Simon Flexner, professor of pathological anatomy and resident pathologist of the Johns Hopkins Hospital, and Dr L. F. Barker, associate professor of anatomy and assistant resident pathologist at Johns Hopkins Hospital. Two medical students at the University will accompany them as assistants.

Sixth International Otological Congress, 1899. — This Congress is to be held in London, from August 8th to 12th, under the presidency of Dr. Urban Pritchard. Mr. Cresswell Baber, 46 Brunswick Square, Brighton, Eng., is secretary-general of the British Organization Committee. The meeting will be held at the Examination Hall of the Royal College of Physicians of London and Royal College of Surgeons of England. The official languages of the Congress are English, French, German and Italian. The subject chosen for special discussion is "Indications for Opening the Mastoid in Chronic Suppurative Otitis Media," which will be introduced by Prof. W. MacEwen, of Glasgow; Dr. H. Knapp, of New York; Dr. Luc, of Paris; and Professor Politzer, of Vienna.

Cold Storage at Manila. — The War Department is arranging proposals for bids for the construction of a Government cold-storage plant at Manila. The plant will be opened and operated entirely by the Government and will have a capacity for the storage of 2,000 tons of beef and an equal amount of chickens, vegetables or anything else requiring refrigeration. It will be operated on the ammonia system, and will be able to manufacture twenty-four tons of ice daily. Heretofore the meat supplied to the troops at Manila has been kept on board the refrigerator ships in which it was brought from Australia, as there was no way by which it could be preserved on shore. This necessitated paying demurrage on the vessel as long as she was detained in port, and this so materially increased the cost of the meat that it has been decided to be economy to build a refrigerating plant on shore. The cost of the establishment will probably be about $150,000.

Brevet Rank for Army Medical Officers. — As a result of the action of the committee appointed to recommend deserving officers for brevet commission, the following medical officers of the United States Army were recommended by the President for advancement by brevet of one grade: For meritorious services to wounded under fire, Majors Havard, Wood, Robinson, Kilbourne, Crampton, Ebert and McCreary; Captains Gandy, McCaw, Banister, Wales, Clarke, Fisher, Brewer, Ireland, Hallock, Straub, Newgarden; Lieutenants Kennedy, Godfrey, Kirkpatrick, Fauntleroy and Fuller. Lieutenant Quinton was brevetted for "distinguished public service in the presence of the enemy," and Captain McVay for "excellent service in attending the wounded under fire." Of these, Major McCreary and Captains McVay and Brewer died during or shortly after the campaign from disease there contracted, while a number of the others have since been incapacitated for duty by illness contracted in the service.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, March 29, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease:

diphtheria 36, scarlet fever 27, measles 193, typhoid fever 7.

Boston Society of Medical Sciences. — At a meeting of the Society held Thursday, March 21, 1899, Dr. Charles Harrington gave the results of examinations, in conjunction with Dr. R. M. Pearce, of a number of proprietary disinfectants. He found in general that their germicide power was not as represented, and that but two were uniformly successful. Of these two, one contained phenol, and the other was a one-per-cent. solution of formaldehyde. Dr. J. H. Wright demonstrated microphotographs of malarial parasites, and spoke briefly of the theory of photography as applied to stained microscopic objects. Dr. R. M. Pearce read a paper on The Bacteriology of the Accessory Sinuses of the Nose in Diphtheria and Scarlet Fever. In thirty-nine cases of diphtheria the bacillus of diphtheria was found in the antrum in nearly all. In diphtheria associated with measles or scarlet fever the antrum was also frequently involved. Of four cases of uncomplicated scarlet fever the antrum was infected in three. Histological changes of varied character were found, from slight inflammatory conditions to definite false membranes. Dr. A. L. T. Schaper demonstrated microscopic slides prepared after modern methods of fixing and staining. Dr. C. H. Williams described test types for examination of railway employees, and discussed methods of overcoming attempted deception on the part of those examined.

NEW YORK.

A State School of Public Health. — On March 21st the Assembly at Albany passed the bill introduced by Dr. Nelson H. Henry, of New York, establishing a State School of Public Health at the New York University for the purpose of giving instruction in the various departments of sanitary science. It provides for the appropriation of $25,000 for the founding and equipment of the school, and an additional $25,000 for carrying on its work during the first year.

A Result of Notoriety. — As a result of the Adams inquest the firm engaged in manufacturing the quack medicine known as "Kutnow Powders" has been forced into bankruptcy. It will be remembered that the cyanide of mercury, which is believed to have killed Barnet at the Knickerbocker Athletic Club, was mailed to him in a bottle of this powder, and in consequence of the unfavorable notoriety into which the article was thus brought its sale fell completely off.

A Bill to abolish Coroner's Juries. — Another result of the inquest has been the introduction in the Legislature of a bill abolishing coroner's juries. This would certainly be a step in the right direction, for, while the coroners themselves are as a rule men totally unqualified to properly conduct the examinations coming before them, they usually have as their assistants physicians of considerable ability. It is hardly likely, however, that the bill will become a law, as the old "coroner's quest" system seems to die very hard.

Legislation Affecting Medical Charities, etc. — Among other bills recently passed by the Assembly were the following: Placing all free dispensaries in the State under the jurisdiction of the State Board of Charities, and also prohibiting free dispensaries in drug stores; extending the time in which graduates of veterinary colleges may register as veterinary surgeons to July 1, 1899; authorizing the Health Department of New York City to hear and audit all claims arising out of the destruction of cattle affected with tuberculosis within the city limits, and fixing the rates of compensation.

Hart's Island Unsuited for a State Hospital. — On March 23d Hart's Island, which, with its various buildings and plants, was in 1896 transferred for five years to the State for the use of the Manhattan State Hospital for the Insane, was formally transferred back to the city. The reason for this retransfer two years before the expiration of the allotted time was that Dr. MacDonald, superintendent of the Manhattan Hospital, found that the island could not be utilized with advantage for the purpose designed. He reported that the island was sometimes inaccessible for two weeks together in winter, and that the buildings on it were unfitted for the proper accommodation of the hospital patients. In the month of February all the inmates were sent to the country branch of the Manhattan Hospital, at King's Park, Long Island.

Execution of Mrs. Place. — The execution of Mrs. Martha Place, the first of her sex to die in the electric chair, seems to have been carried out in a very decent and satisfactory manner, and to have been entirely free from any suspicion of sensationalism. A woman attendant was with her, and a female physician from Troy was also among the few persons present.

Death of Dr. Van Arsdale. — Dr. William W. Van Arsdale, of New York, died at Atlantic City, N. J., on March 17th, in the forty-fourth year of his age. He was a son of the late Dr. Henry Van Arsdale, an old New York physician, and was graduated from Leipsig University in 1883. He devoted himself, with success, to surgical work, and at the time of his death was surgeon to the Good Samaritan Hospital and Dispensary, and assistant surgeon to the General Memorial Hospital, formerly the New York Cancer Hospital.

Typhoid Fever, Newark, N. J. — Up to March 25th 260 cases of typhoid fever, with 15 deaths, had been reported in Newark, N. J., since the beginning of the month. The health officials were of the opinion that the outbreak was diminishing, as at that time a much smaller number of new cases than previously were developing each day. It would appear that the water of the Passaic River, the undoubted source of the trouble, was utilized by the water department only from February 13th to February 18th, when the extreme cold weather caused a deficiency in the ordinary supply of the city. Up to 1892 Newark obtained its water supply from the Passaic, but since that time has used pure water brought from the Pequannock valley. The old Passaic pumping-station and pipes were, however, allowed to remain, so that they might be used in case of emergency, and the February blizzard seems to have given rise to such an emergency.

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Miscellany.

A TREATMENT FOR HYDROPHOBIA.

The arrival in New York of a Frenchman, named Paille, for the purpose of enlisting governmental aid in the promulgation of a plan for treating hydrophobia, recalls the curious fact that more than ninety years ago the Legislature of New York made an appropriation for carrying out an apparently very similar method. M. Paille proposes first to endeavor to get an appropriation from the State Legislature, and, failing in that, to appeal to Congress. His remedy is said to consist of an internal medication, the basis of which is the pulverized bone of a rabid dog's tail, which is mixed with a diluted tincture of laudanum, and other ingredients which he keeps secret. The French philanthropist will probably be astonished to learn that his "pulverized-dog-bone" remedy is a very old one in New York. In the early part of the century a New Yorker by the name of Crous, after failing to secure the co-operation of Major De Witt Clinton for the municipal sanction of a similar "cure," successfully applied to the State Legislature, and the following is the official record of the transaction:

State of New York, Comptroller's Office.
March 25, 1806.

Pursuant to the direction of an act entitled, "An Act for granting compensation to John M. Crous for discovering a cure for canine madness," passed the second day of February, 1806, I do hereby certify the said John M. Crous hath this day deposited in this office a certain writing purporting to be the remedy used by him with certain success for more than twenty years past for the cure of hydrophobia, or canine madness, which writing is in the words and figures following, to wit: (then follows a description of the remedy and the method of administration). The ingredients consist of one ounce of the pulverized jaw-bone of a dog, the dried and pulverized "false tongue of a newly foaled colt," and one scruple of the "verdigrisse which is raised on the surface of old copper by lying moist in the earth." The details of administration having been given, the record goes on to say: "If after-symptoms appear, a physician must be immediately applied to to administer the following, namely: Three drams of verdigrisse of the kind before mentioned, mixed with half an ounce of calomel, to be taken at one dose. This quantity the physician need not fear to administer, as the reaction of the venom then diffused through the whole system of the patient neutralizes considerably the powerful quality of the medicine. Secondly, if in three hours thereafter the patient is not completely relieved, administer four grains of pure opium or 120 drops of liquid laudanum."

This document is duly attested by Elisha Jenkins, comptroller, after having been sworn to before Chief Justice James Kent. Governor Lewis not only signed the bill but showed that he personally approved of it by writing several letters to friends praising Mr. Crous as a public-spirited benefactor. There is no record extant, however, of how many people this wonderful treatment cured or killed.

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Correspondence.

THE PATHOLOGY OF PHLEGMASIA DOLENS.

2257 Washington St., Boston, March 24, 1899.

Mr. Editor: — I presume some of your readers may have been as much surprised as I was to read the somewhat crude and indefinite statements of Prof. J. M. Da Costa in the Journal of March 23, 1899, on the Pathology of Phlegmasia Dolens following Typhoid Fever.

My first astonishment was caused by reading "that owing to the left common iliac vein being crossed by the right iliac artery the flow of blood is not so free as in the right." When I studied anatomy *both* common iliac veins were crossed by the right common iliac artery and united just above it to form the inferior cava. I hardly think the disposition of these vessels can have changed any in the last thirty-five years.

Coming to the pathology of the malady, he says: "The general view is that it means a phlebitis." I do not know what the general view may be in Philadelphia, but this certainly has not been the general view in this neighborhood, since the time of the famous controversy between O. W. Holmes and C. D. Meigs on the nature of puerperal fever. I think I am right in saying that Boston physicians have always regarded phlegmasia dolens as a septic, or infectious, disease.

But Dr. Da Costa says, "the disease is primarily, I believe, a venous thrombosis, . . . secondarily, a phlebitis may happen. . . . Most generally the thrombus is gradually disintegrated without serious symptoms, and the phlebitis, if any have occurred, slowly yields, or an adhesive inflammation results, and a collateral venous circulation is established. Cases have, however, been recorded in which pyemia resulted from the disintegrating thrombus."

How can pyemia result from a disintegrating thrombus without a definite purulent infection? Dr. Da Costa is simply reciting the obsolete doctrines of Virchow, whose knowledge of thrombosis, according to our present light, was small. It is a strange thing to see a great and world-renowned clinical teacher like Professor Da Costa still toiling in the worn-out ruts of a bygone generation.

But the worst consequence of such errors is the false inferences they lead to as regards prognosis and treatment. Dr. Da Costa says that the vast majority of cases recover and that he has only seen one fatal case. I merely know that the only case I ever saw of phlegmasia dolens as a complication of typhoid fever cost me the life of a very dear friend.

Then, as to treatment, Dr. Da Costa recommends firstly and chiefly the elevation of the limb. Common-sense would say that nothing would be more likely to cause a disintegration and dislodgement of the clot than this. "Purgatives," says Da Costa, "only when the bowels are constipated, and rarely necessary." I should suggest a gentle but thorough evacuation of the bowels with mercurials, salines or castor oil as the only efficient method of intestinal antisepsis. Immobility of the limb, moderate bandaging, and the free use of alcoholic stimulants, the only reliable internal antiseptics which we know of, are also indicated.

I am sorry to have to make these criticisms on an able and generally instructive paper, but false teachings, especially when weighted with the authority of a great name, are dangerous to the community, and ought never to be allowed to pass unchallenged.

Respectfully yours,
Edward T. Williams, M.D.

THE HOME MODIFICATION OF MILK.

MEDFORD, March 25, 1899.

MR. EDITOR: — The number of the BOSTON MEDICAL AND SURGICAL JOURNAL for March 23d contains a paper by Dr. Charles W. Townsend "On Infant Feeding, with Special Reference to the Home Modification of Milk"; also the remarks of Dr. Morse on the same at the meeting of the Boston Society for Medical Improvement, in which Dr. Morse, speaking of a case seen in consultation, says:

"The grandmother of the child remarked incidentally that she had always had great success in feeding babies and had often succeeded where physicians failed. As we expressed interest, she volunteered to tell us her method. She then produced a card which she had received from a physician in Paris about forty years ago, on which was given a method for home modification based on top milk, ordinary sugar and water. The modifications varied both as to quantity and quality according to age. I figured out several of these modifications and found that they corresponded very closely to the mixtures we now use for babies of various ages."

As at that time, "forty years ago," I was young in the practice of medicine and especially anxious for help in this direction, the proper method of preparing cow's milk for infant feeding, I read with great pleasure and profit an article in the *American Journal of the Medical Sciences*, for July, 1858, by William Henry Cumming, M.D., of Williamstown, Mass., on "Natural and Artificial Lactation," in which he recommends setting milk for four or five hours, then taking the upper third, or, as a still better way of obtaining the same result, using the latter half of the milk furnished by the cow.

Dr. Cumming gives a schedule in tabulated form running from three to ten days, ten to thirty days, one month, two months, and so on to eighteen months, giving for each the quantity of milk, always 1,000 parts, and the variable parts of water and sugar; he also gives the proper amount for each age, and calls attention to the fact that weight and development are important factors in deciding quality and quantity.

I wondered in reading of the card from Paris whether the ideas of the French doctor might not have been of Yankee origin "about forty years ago."

While we are very familiar with the names of many noted men who have done much to advance our knowledge of infant feeding by their laboratory work, their hospital work and their published writings, I have often wondered that the name of Dr. William Henry Cumming did not appear as one of the pioneers and possibly, like that of Abou Ben Adhem, lead all the rest.

J. HEDENBERG, M.D.

METEOROLOGICAL RECORD

For the week ending March 18th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...12	29.77	56	65	46	86	86	86	S.W.	S.W.	12	12	O.	F.	.05
M..13	30.12	41	50	32	60	49	54	W.	N.E.	18	10	O.	O.	
T...14	30 51	29	32	26	94	88	91	N.	N.	10	10	N.	O.	
W..15	30.11	35	41	29	75	96	86	S.E.	S.E.	12	22	O.	R.	.12
T...16	29 83	34	47	21	72	45	58	W.	N.W.	18	14	C.	C.	.63
F...17	30.25	23	31	15	42	38	40	N.W.	N.W.	18	8	C.	C.	
S...18	29.96	26	33	18	53	97	75	S.	E.	4	3	N.	R.	.29
☞	30.08	36	43	29	69	71	70							1.09

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 18, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup
New York . .	3,438,899	1222	422	8.32	20.80	.90	.64	2.72
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	520	127	16.72	11.02	2.85	8.36	2.28
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	195	62	8.16	19.89	.51	.51	6.12
Baltimore . .	506,389	197	58	5.61	15.81	1.02	.51	2.55
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	112	45	6.30	15.30	4.50	4.50	—
Washington .	277,000	103	21	.98	—	.98	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	60	12	1.67	25 05	1.67	—	—
Nashville . .	87,754	58	14	10.32	17.22	3.44	—	—
Charleston . .	65,165	30	8	—	—	—	—	—
Worcester . .	108,240	29	13	17.25	27 60	6.90	—	—
Fall River . .	95,919	30	12	10.00	33.33	6.66	—	—
Cambridge . .	89,724	27	4	—	11 00	—	—	—
Lowell . . .	88,641	33	12	3 03	33.33	—	—	—
Lynn	66,703	18	3	5.55	16.66	—	5.55	—
New Bedford .	66,340	29	10	6 90	10.35	3.45	—	3.45
Somerville . .	61,101	18	6	—	22.22	—	—	—
Lawrence . .	57,263	22	9	8.30	16.60	—	4.15	—
Springfield . .	56,501	23	6	4.35	13.05	—	4 35	—
Holyoke . . .	43,424	9	4	11.11	11.11	—	—	—
Brockton . .	37,278	6	3	16 66	33.33	—	—	16.66
Salem. . . .	36,883	14	2	7.11	7.14	7.14	—	—
Malden . . .	34,613	4	—	—	—	—	—	—
Chelsea . . .	33,468	11	1	9.09	—	—	—	—
Haverhill . .	32,022	11	6	18.18	18.18	—	—	18.18
Gloucester . .	30,589	6	—	—	—	—	—	—
Newton . . .	29,716	5	3	—	20.00	—	—	—
Fitchburg . .	29,438	5	2	—	20.00	—	—	—
Taunton. . .	28,167	13	4	15.38	15.38	15.38	—	—
Everett . . .	25,338	7	2	—	—	—	—	—
Quincy . . .	23,549	5	1	—	—	—	—	—
Pittsfield . .	22,643	8	—	—	25 00	—	—	—
Waltham . .	21,812	5	1	—	40.00	—	—	—
North Adams .	20,971	6	1	16.66	16.66	16.66	—	—
Chicopee . .	17,842	7	3	—	14.28	—	—	—
Medford . . .	16,511	1	—	—	—	—	—	—
Newburyport .	14,915	5	—	—	—	—	—	—
Melrose . . .	14,032	2	—	—	50.00	—	—	—

Deaths reported 2,879; under five years of age 880; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 261, acute lung diseases 498, consumption 366, diphtheria and croup 62, typhoid fever 62, diarrheal diseases 44, cerebro-spinal meningitis 35, scarlet fever 21, measles 17, erysipelas 12, whooping-cough 6, malarial fever 1, small-pox 1.

From cerebro-spinal meningitis New York and Philadelphia 11 each, Nashville 4, Baltimore and Worcester 3 each, Boston 2, Holyoke 1. From scarlet fever New York 18, Philadelphia, Boston and Lowell 1 each. From measles New York 14, Boston 2, Philadelphia 1. From erysipelas New York 8, Philadelphia 2, Boston and Chelsea 1 each. From whooping-cough Philadelphia and Boston 2 each, Fall River and Lawrence 1 each. From small-pox New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending March 11th, the death-rate was 22.2. Deaths reported 4,853; acute diseases of the respiratory organs (London) 529, measles 114, whooping-cough 111, diphtheria 90, diarrhea 40, scarlet fever 32, fever 22.

The death-rates ranged from 13.5 in Cardiff to 30.4 in Halifax; Birmingham 17.4, Bradford 21.9, Gateshead 13.7, Hull 19.1, Leeds 20.5, Liverpool 28.0, London 22.4, Manchester 27.8, Newcastle-on-Tyne 23.9, Nottingham 17.6, Oldham 29.7, Sheffield 27.1, Sunderland 18.3.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING MARCH 25, 1899.

C. G. HERNDON, surgeon, detached from the "Richmond" and ordered to the "Prairie."

C. T. HIBBETT, surgeon, ordered to the "Baltimore" *via* the "Glacier." Orders of March 18th revoked; ordered to the "Baltimore" *via* steamer of April 12th from "San Francisco."

G. F. FREEMAN, assistant surgeon, detached from the "Vermont" and ordered to the Washington Naval Hospital.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING MARCH 23, 1899.

Williams, L. L., passed assistant surgeon. To report to Surgeon C. E. Banks, Chairman Board of Examiners, Washington, D. C., for examination to determine fitness for promotion to the grade of surgeon. March 11, 1899.

McIntosh, W. P., passed assistant surgeon. To report to Surgeon C. E. Banks, Chairman Board of Examiners, Washington, D. C., for examination to determine fitness for promotion to the grade of surgeon. March 11, 1899.

Perry, J. C., passed assistant surgeon. To assume temporary command of Service at Port Townsend, Wash., during absence of Passed Assistant Surgeon C. H. Gardner. March 14, 1899.

Gardner, C. H., passed assistant surgeon. To proceed to Seattle, Wash., and assume temporary command of Service, relieving Acting Assistant Surgeon Eagleson, upon being relieved by regular officer of the Service, to rejoin station at Port Townsend, Wash. March 14, 1899.

Thomas, A. R., assistant surgeon. To report to Surgeon G. W. Stoner, Chairman Board of Examiners, Stapleton, Staten Island, N. Y., for examination to determine fitness for promotion to the grade of passed assistant surgeon. March 13, 1899.

Wickes, H. W., assistant surgeon. To report to Surgeon G. W. Stoner, Chairman Board of Examiners, Stapleton, Staten Island, N. Y., for examination to determine fitness for promotion to the grade of passed assistant surgeon. March 13, 1899.

Cumming, H. S., assistant surgeon. To report to Surgeon G. W. Stoner, Chairman Board of Examiners, Stapleton, Staten Island, N. Y., for examination to determine fitness for promotion to the grade of passed assistant surgeon. March 13, 1899. Relieved from duty at Washington, D. C., to take effect March 31, 1899. Directed to rejoin station at New York, N. Y. March 13, 1899.

Hastings, Hill, assistant surgeon. Relieved from duty at Washington, D. C., to take effect March 31, 1899, and directed to proceed to Cleveland, O., and assume temporary command of Service. March 13, 1899.

Fricks, L. D., assistant surgeon. Assigned to duty as sanitary inspector on U. S. transport "Sedgewick." March 16, 1899.

Richardson, T. F., assistant surgeon. To report by letter to Surgeon J. H. White for duty at the Immigration Depot, New York, N. Y. March 10 1899.

King, W. W., assistant surgeon. To report to medical officer in command, Detroit, Mich., for temporary duty and assignment to quarters. March 10, 1899.

Thornbury, F. J., assistant surgeon. To report to medical officer in command, Stapleton, Staten Island, N. Y., for duty and assignment to quarters. March 10, 1899.

Ramus, Carl, assistant surgeon. To report to medical officer in command, Cape Charles Quarantine, for duty and assignment to quarters. March 10, 1899.

Foster, S. B., acting assistant surgeon. Granted leave of absence for twenty days from March 10, 1899. March 11, 1899.

Maguire, E. S., hospital steward. Upon being relieved by Hospital Steward C. H. Miller, to proceed to Evansville, Ind., and report to medical officer in command for duty and assignment to quarters. March 15, 1899.

Miller, Charles, hospital steward. Upon being relieved by Hospital Steward G. H. Brock, to report to medical officer in command, Detroit, Mich., for duty and assignment to quarters. March 15, 1899.

Stearns, W. L., hospital steward. Granted leave of absence for thirty days from April 12, 1899. March 11, 1899.

Kolb, W. W., hospital steward. Upon being relieved by Hospital Steward F. H. Peck, to proceed to Norfolk, Va., and report to the medical officer in command for duty. March 15, 1899.

Peck, F. H., hospital steward. Upon being relieved by Hospital Steward C. G. Carlton, to proceed to the Tortugas Quarantine Station and report to the medical officer in command, for duty and assignment to quarters. March 15, 1899.

Carlton, C. G., hospital steward. To proceed to Egmont Key Detention Camp and report to the medical officer in command, for duty and assignment to quarters. March 15, 1899.

Beck, J. E., hospital steward. To report to medical officer in command, New Orleans, La., for duty and assignment to quarters. March 15, 1899.

Godfrey, John. To proceed to Port Huron, Mich., for special temporary duty. March 21, 1899.

Mead, F. W., surgeon. Granted leave of absence for ten days from April 1, 1899. March 17, 1899.

Banks, C. E., surgeon. Detailed as inspector of unserviceable property in the purveying division at Washington, D. C. March 21, 1899.

Williams, L. L., passed assistant surgeon. Relieved from duty at Washington, D. C., and directed to assume charge of the Immigration Inspection Service at New York, N. Y. March 22, 1899.

Cobb, J. O., passed assistant surgeon. To proceed to Savannah, Ga., for special temporary duty. March 22, 1899.

Smith, A. C., passed assistant surgeon. To proceed to Savannah, Ga., for special temporary duty. March 22, 1899.

Eager, J. M., passed assistant surgeon. Relieved from duty at Washington, D. C., and directed to proceed to Cleveland, O., and assume temporary command of Service. March 22, 1899.

Wickes, H. W., assistant surgeon. Granted leave of absence for two days from April 3, 1899. March 21, 1899.

Hastings, Hill, assistant surgeon. Order of March 13, 1899, to proceed to Cleveland, O., revoked, and directed to proceed to Seattle, Wash., and assume command of Service. March 22, 1899.

Grubbs, S. B., assistant surgeon. Detailed as quarantine officer for the port of Cienfuegos, Cuba. March 17, 1899.

Von Ezdorf, R. H., assistant surgeon. To report to medical officer in command, South Atlantic Quarantine Station, for temporary duty. March 18, 1899.

McAdam, W. R., assistant surgeon. To report to medical officer in command, Tortugas Quarantine, for temporary duty. March 19, 1899.

BOARDS CONVENED.

Board convened to meet at Washington, D. C., at 11 A. M., March 13, 1899, for the physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Surgeon C. E. Banks, Chairman; Surgeon J. H. White and Passed Assistant Surgeon G. T. Vaughan, Recorder.

Board convened to meet at Washington, D. C., at 9 o'clock A. M., March 14, 1899, for the examination of officers of the Service, to determine their fitness for promotion to the grade of surgeon. Detail for the Board: Surgeon C. E. Banks, Chairman; Surgeons J. H. White and P. M. Carrington, Recorder. March 10, 1899.

Board convened to meet at the U. S. Marine Hospital, Stapleton, N. Y., Wednesday, April 5, 1899, for the examination of assistant surgeons of the Service to determine their fitness for promotion. Detail for the Board: Surgeon G. W. Stoner, Chairman; Passed Assistant Surgeons L. L. Williams and W. P. McIntosh, Recorder.

APPOINTMENTS.

Oliver Stewart, of Michigan, appointed acting assistant surgeon, for duty at the port of Port Huron, Mich. March 11, 1899.

Julius E. Beck, of Ohio, appointed junior hospital steward. March 11, 1899.

DISCHARGE OF VOLUNTEER MEDICAL OFFICERS.

General Orders, No. 46, dated March 13th, honorably discharges the following medical officers of the volunteer army, to take effect on the dates set opposite their names, their services being no longer required:

Chief Surgeons. — Lieut.-Col. Robert M. O'Reilly, May 12th; Lieut.-Cols. Alfred C. Girard, Timothy E. Wilcox and Jefferson R. Kean, April 12th.

Brigade Surgeons. — Major Nathan S. Jarvis, April 12th; Majors Paul Clendenin, James D. Glennan, Peter D. McNaughton, John R. McDill, George B. Bunn, Elmer E Heg, William S. Bryant, William F. DeNiedeman, Francis C. Ford, John L. Macumber and Robert Burns, May 12th.

APPOINTMENT.

Geo. W. Gay, M.D., has been appointed senior surgeon at the Boston City Hospital. Dr. Gay has held the position of visiting surgeon at that institution for twenty-seven years.

SOCIETY NOTICE.

Suffolk District Medical Society, Surgical Section.— The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, April 5, 1899, at 8.15 o'clock.

"Pyloroplasty: Three Cases, with Exhibition of Patients," by Dr. M. H. Richardson.

"Defective Postures in Children, with Resulting Deformities," illustrated with stereopticon views, by Dr E. G. Brackett.

Presentation of patients by Dr. F. B. Lund: "A Case of Kocher's Operation for Radical Cure of Hernia." "A Case of Osteomyelitis of Femur."

The presentation of instruments, specimens, etc., of surgical interest is invited.

Paul Thorndike, M.D., *Secretary*, 244 Marlborough St.

RECENT DEATH.

Frederick H. Schaake, M.D., city physician of Lawrence, died of blood poisoning March 27th. He is believed to have been infected by cutting himself while performing recent operations on patients at the city almshouse. He was appointed city physician in 1896, and had during three years practised medicine in Lawrence and New Bedford since graduating from the Harvard Medical School. He was thirty-four years of age.

Original Articles.

THE CLASSIFICATION OF EPILEPTICS.[1]

BY W. N. BULLARD, M.D., BOSTON.

Epilepsy is not a disease; it is properly a symptom. Various classifications of epileptics have been proposed, and are used to a certain extent among the writers of treatises on epilepsy and kindred subjects, but none of these has yet become a recognized or standard form. In the very beginning we are confronted by the fact that there are two distinct matters submitted to us, and that the classification of epileptics may be considered from two very different points of view. There is, in the first place, the clinical classification of epileptics — that made according to the type and stage of the disease; the form of classification which should be used in describing or writing about the affection. On the other hand, there is the practical classification of epileptics in institutions, which, so far as it is made at all, has to be made on wholly different grounds.

The clinical classifications of epileptics may be made in various ways, and different elements may be taken as the bases therefor. Before, however, we discuss these we must obtain a clear understanding as to what we mean by epileptics. The word "epilepsy" may be used in a wide or in a narrow sense. In the one case it is synonymous with the so-called essential or idiopathic epilepsy. In the broader sense it is used to comprehend essentially all cases in which epileptic or epileptiform attacks occur more than once, or more than a few times. Some writers exclude from the term "epilepsy" certain conditions, as those, for example, in which well known organic lesions of other portions of the body than the intracranial contents form the starting point or basis of the affection, and as some authors include more and others fewer of these conditions, the word "epilepsy" in its broader sense has at the present time ill-defined limits. For our purposes, however, it will be best to include under this signification all cases of persons suffering from epileptic or epileptiform convulsions, in which these are to be considered either as idiopathic or as due to primary intracranial conditions. By this definition we exclude epileptiform convulsions directly due to cardiac or renal disease.

The usual methods of classifying epileptics clinically are (1) according to etiology; (2) according to symptoms.

The etiological classification is undoubtedly the most scientific, and is, on the whole, the best form of what I have termed "clinical classification." The principal objection to this method is its lack of certainty. In the first place, there are many cases in which, although a definite cause can be detected, either post mortem or at some time during the life of the patient, nevertheless this cannot be detected or learnt at the time when the patient is under observation. Moreover, there are many cases in which the existence of the epilepsy is falsely attributed by the patient or his relatives to a supposed cause. As in almost all cases, some of the traumatic excepted, we have no physical signs on which to rely we are obliged to depend on the history of the case and are largely at the mercy of the narrators. Again, there is a large class, the so-called idiopathic epilepsy, in which even with our best methods in post-mortem examination we can find no organic lesion which will account for the symptoms For these reasons, the etiological classification is in the present state of our knowledge often difficult, occasionally impossible. While fully recognizing that epilepsy itself is a symptom of some abnormal intracranial condition, we are frequently at a total loss to know (*a*) what that condition pathologically is; (*b*) what has produced that pathological condition. Macroscopically, at the autopsy, we can discover nothing, and even microscopical examination of the brain tissues gives us no satisfactory information.

In spite, however, of these objections, which are practically set aside as far as possible, by placing all cases in which no definite etiology appears in a class by themselves, this is the most convenient and the most scientific method of classification for clinical purposes. In this system we essentially divide all epileptics into the two classes of (1) idiopathic or true epilepsy, where no definite cause for the affection can be detected; (2) all other forms of epilepsy for which definite causes exist. Class (2) contains a number of definite divisions:

(*A*) Traumatic, where the epilepsy is directly due to injury. In this division should be included not only the cases (*a*) in which the brain or its members are torn or otherwise injured, or where the epilepsy is the result of an intracranial hemorrhage, but also (*b*) those in which there is a continued increased pressure on the brain and meninges, as by depressed bone, and lastly (*c*) those more obscure cases, in which epilepsy directly follows a blow on the head, although no organic lesion can be detected either during or after life. In some of these latter cases it is probable that the signs of the injury have disappeared; in others it is possible that no visible permanent signs existed; in many we have no opportunity for intracranial investigation.

(*B*) The second subdivision of epilepsy is the toxic. The common type of this form is the so-called alcoholic. It is generally admitted that a form of epilepsy exists which is primarily due to the abuse of alcohol. I must confess that I have never myself seen a case in which, after due consideration, I am now convinced that this cause alone produced epilepsy, but it must be mentioned here, as the vast majority of writers acknowledge its existence. On the other hand, there is no doubt that epileptic convulsions are caused by absinthe, the essential oil being here the prominent factor. In certain other cordials, also, the essential oil causes the same results.

Lead may also be a cause of epileptic convulsions, but it is a rare one, and usually as a result of definite lesions. Convulsions from lead indicate a very severe poisoning and suggest a fatal termination.

(*C*) Organic epilepsy is frequently the result of non-traumatic lesions of the intracranial contents. These lesions may be due to more or less localized causes, as, for example, to hemorrhage from some of the intracranial vessels, or to embolism, or thrombosis in one or more of them. It may be and not rarely is caused by neoplasm in the brain or meninges, and it not infrequently, especially in children, is found in connection with cerebral sclerosis. Its occurrence in paralytic dementia, another form of sclerosis, is too well known for me to do more than to mention it here, and state that in this affection it may be due to various lesions, the results of endarteritis, cerebral hemorrhages, or possibly the sclerosis itself.

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[1] Read before the New England Psychological Society, March 10, 1898.

Another form of organic epilepsy is seen in that occurring in tubercular meningitis, where the convulsions may be due apparently to more or less diffuse conditions (meningitis) or to localized ones (tumor, collections of miliary tubercles in brain or meninges).

(*D*) Perhaps the most important form of epilepsy of which we know the cause is the syphilitic. In this we can often find at autopsy some definite lesion which may be looked upon as the cause. The most common is the syphilitic endarteritis with its results; much more rarely it occurs from gummata; it is not common from uncomplicated meningitis. On the other hand, there are undoubtedly a certain number of cases of epilepsy due to syphilis in which lesions are not found post mortem. How large this number is we can only surmise. Clinically many cases of epilepsy are presented to us in which the question of syphilitic origin has arisen, but cannot be determined. In cases due to tumor, in cases where the attacks have come on suddenly and in considerable numbers, and where other syphilitic manifestations or a syphilitic history is present, we can often readily make the diagnosis, but where these conditions are not found, where a single attack occurs without known cause, unaccompanied by any other special symptoms and not followed by other attacks perhaps for months, the diagnosis is often extremely difficult, very often impossible. Specific treatment is sometimes, but not often, of value.

These are the principal classes of epilepsy divided according to etiology. Other forms are recognized, which, however, can easily be arranged in the proper category. In some cases we have apparently rather an exciting than the determining cause and we must exercise care in distinguishing between these. In persons who for any reason are predisposed to epilepsy an attack may be induced by exciting causes which would not suffice to produce any objective result in a perfectly sound body. Such probably are many at least of the cases called reflex, in which the apparent existing cause is a continued irritation of some peripheral nerve or nerves. I recollect well that Brown-Sequard in one of his lectures in Boston referred to a case which was, in his opinion, caused by some chronic irritation of one toe,— I believe an in-growing toe nail.

Another form of clinical classification of epileptics is the symptomatic. This is exceedingly simple, and is much used as being the easiest and readiest method. It has, however, two objections. One is a very serious one. It is that it is totally unscientific, and so far as it implies, in the case of certain symptoms, any essential difference in the nature of the affection would seem to be wholly fallacious. The nature of the affection remains the same, whether it manifests itself for the time being as petit mal, as grand mal, or as a condition of automatic action. On the other hand, there are certain symptoms about the nature of whose cause we are in doubt, which may be due to the same condition which forms the basis for the grand mal or petit mal, or may be due to other conditions. Some of these symptoms or symptom-complexes may be independent, that is, they may occur by themselves without connection, so far as can be seen, with any other symptom-complexes, and the question then naturally arises as to whether they are metabolic or substitutive forms of epilepsy. Others occur not alone in connection with epilepsy, but are also concomitant with other affections, as chorea, insanity or allied troubles. The second objection to this form of classification is that it has not yet been decided by general medical opinion whether certain symptoms and symptom-complexes should be classed under epilepsy or not. This is at present done, or not done, according to the personal views of the observer, and sometimes may cause difficulty in the comparison of statistics.

The essence of the classification of epileptics by symptoms (symptom-complexes) consists in taking certain prominent symptoms as the bases and in placing all those patients in whom one of these symptoms predominates in its respective class.

The three primary classes in which epileptics should be arranged according to this classification are (1) that in which grand mal is the prominent feature; (2) that in which petit mal is the prominent feature; (3) that in which automatic actions are the prominent feature. Each of these classes may have numerous subdivisions according to the pleasure of the observer. Thus we may divide the cases of grand mal into those in which an aura exists, and those in which it is not found. We may divide the automatic actions according to their character, as running, walking, or more elaborate and complicated actions.

As said before, however, all these subdivisions are futile, spurious and artificial. They should be abolished, and this form of classification ought to fall into disuse.

The practical classification of epileptics in an institution established for them rests, however, upon entirely different principles. The arrangement to be adopted in any given institution will naturally depend to a considerable extent upon the size and number of buildings to be occupied by patients, and upon the size, number and position of the various dormitories and rooms. For our present purpose we will imagine a theoretically perfect institution, and assume that any desirable arrangements can be made. In all institutions there are divisions which must always be made. These are determined by practical considerations. First and most obvious is the division by sex — males and females. Next to this, as we assume our institution to take all classes of epileptics, must a division be made into the sane and the insane. There will always be a considerable number of patients who will stand close to the border line of these divisions, and there will be in any large institution of this character many whom we shall feel it best to move from time to time from one of these divisions to the other. Thus not only will the exact limit of these divisions from the point of view of the superintendent be somewhat indefinite, but also the numbers in each division with only the same patients in the institution will be constantly fluctuating. Considering now only the insane epileptics we shall find that they must be divided roughly into several groups: (1) the criminal; (2) the habitually violent; (3) the temporarily violent; this third class includes those persons who are habitually either mildly insane, or in such condition as not to be dangerous to themselves or others, but who are in the habit of having violent outbreaks for a comparatively short time, from which they return to their usual condition; (4) the mild, or non-violent, non-criminal ones.

Among the mild insane epileptics another division may be made according to the degree of insanity. We may roughly divide them into three classes: (1) the much demented and helpless; (2) the moderately demented, harmless epileptics, able to get about somewhat, and perhaps to do light work; (3) those who are but slightly demented or essentially sane between the attacks, who, as a class, can do moderately heavy or regular heavy work; if men, heavy laboring work.

We have also the sane epileptics, who are to be considered in this connection, many of whom can not only do ordinary heavy laboring work, but among whom we shall find skilled mechanics, and those who have learned and practised various trades. These persons are still able to practise, often with good success, their former occupations, if only the opportunity be given them.

Epileptics in an institution must also be classified to a certain extent clinically, according to the number and character of their attacks. Patients having frequent attacks of petit mal often need considerable supervision, and cannot be entrusted with dangerous machinery or tools. Those much affected with grand mal are even more to be guarded, and cannot be allowed alone without aid in any place where a sudden fall would be dangerous.

There are certain executive considerations in arranging for epileptics in any institution which receives all persons suffering with this affection. One which is of practical importance, and which applies to both the sane and insane, is the question of expense. Our theoretical institution must receive not only those patients who are supported at the expense of the State, county or town, but also private patients who may pay any price up to fifty dollars a week.

As many of our patients are supposed to be capable of work, they may be classified for statistical purposes in regard to their abilities in this division. This may be an important consideration in regard to their location and arrangement in the institution, especially when taken in connection with other factors.

I offer these considerations, gentlemen, as a basis for discussion and information in regard to the best practical divisions for epileptics in institutions.

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JUSTUS'S TEST FOR THE DIAGNOSIS OF SYPHILIS.

BY RICHARD C. CABOT, M.D., BOSTON,
Physician to Out-Patients at the Massachusetts General Hospital,

AND P. S. MERTINS, M.D.,
Of the Harvard Medical School.

In two papers[1] published in 1895 and 1897 respectively a new test for the diagnosis of doubtful cases of syphilis was described by Justus, an assistant in Schwimmer's clinic at Budapest. The test depends upon the sensitiveness of the red blood corpuscles in syphilitics to the action of mercury exhibited by inunction, or by subcutaneous or intravenous injection. This sensitiveness, which is said by Justus to be greater in syphilis than in any other disease, is shown by a sudden sharp fall in the percentage of hemoglobin during the hours immediately following the administration of the drug. Later the hemoglobin gradually rises to a point above that seen before the injection. Such a sharp fall of 10 to 20 per cent. in the hemoglobin following the use of mercury was observed by Justus in over 300 cases of syphilis, and the absence of any such fall in non-syphilitic cases was attested by "very numerous" control experiments.

The sign was observed in all untreated cases of the secondary, tertiary or congenital form of the disease, and in 13 out of 16 cases in which only a fresh chancre and inguinal adenitis were present. "Latent cases," so called, showing no lesions, and cases in which the lesions have passed their acme and were subsiding, either spontaneously or under treatment, do not react characteristically to the test. The three cases of fresh chancres above mentioned were in the stage of subsidence — nearly healed. It is therefore in florid cases with advancing lesions of whatever type that the test is positive. This includes relapses of all kinds so long as the lesions are in an active condition.

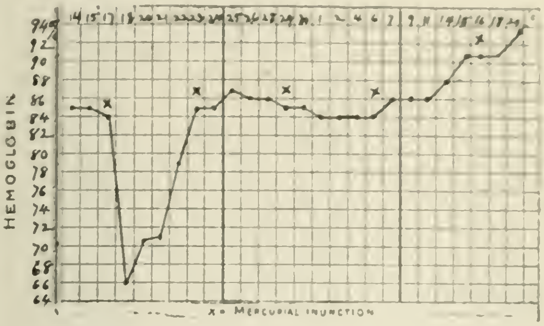

CHART I.

The amount of the fall in hemoglobin after a given dose of mercury depends, according to Justus, on the severity of the disease and the condition of the patient.

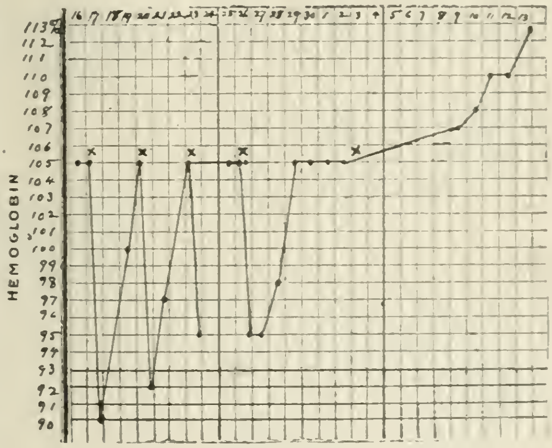

CHART II.

The same conditions determine how soon the blood shall return to its formal condition.

If a subcutaneous or intravenous injection is given the characteristic sharp fall in hemoglobin usually follows each of the first three or four doses (see Chart I), while if the method of inunction is used the hemoglobin falls only after the first inunction. If the drug is given by mouth no effect on the blood is to be observed. Intravenous injections act so rapidly that *within an hour* a loss of 15 per cent. of coloring matter has been noted. Microscopic examination of the

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[1] Justus: Virchow's Archiv, vol. 140, p. 91, 1895; also vol. 148, p. 533, 1897.

No.	DIAGNOSIS.	HEMOGLOBIN %. Before inunction.	HEMOGLOBIN %. After inunction.	LOSS.	REMARKS.
1	Active syphilis.	111	88	23%	Chancre and sore throat. No rash.
2	" "	97	63	34%	Chancre 18 mos. ago. Now sore throat, gastric symptoms, debility and headache.
3	" "	102	87	15%	Chancre 10 mos. ago. Now adenitis, mucous patches and debility.
4	" "	92	82	10%	Stubborn tertian symptoms. Throat much eaten away. Corrosive was injected subcutaneously.
5	" "	108	88	20%	Headache, rapid alopecia.
6	" "	96	86	10%	Chancre, eruptive sore throat, adenitis.
7	" "	100	65	35%	Specific eruption, adenitis, and joint pains.
8	Inactive syphilis.	95	90	5%	Said to have had syphilis 4 years ago. Now headache and indigestion.
9	Inactive syphilis.	85	87		Under treatment 3 mos. No active lesions.
10	Inactive syphilis.	90	87		Had syphilis 4 years ago. No signs of it now.
	CONTROL CASES.				
11	Phthisis.	87	90		
12	"	90	85		
13	"	85	80		
14	"	87	82		
15	"	85	80		
16	"	90	92		
17	"	85	85		
18	Chlorosis.	85	85		
19	"	45	32		
20	Diabetes mellitus.	85	80		One month later: before inunction 87 %, after inunction 85%.
21	Diabetes mellitus.	90	85		
22	Diabetes mellitus.	100	95		
23	Chronic nephritis.	85	85		
24	Malaria.	92	95		
25	"	95	85		Patient had a chill just after the inunction. This probably accounts for the fall in hemoglobin.
26	Lumbago.	90	95		
27	"	95	97		
28	Valvular heart disease.	85	90		
29	Valvular heart disease.	95	97		
30	Acute rheumatism.	85	90		
31	Gonorrhea.	105	102		
32	Sarcoma.	85	90		
33	Typhoid.	85	82		
34	Debility.	97	95		
35	"	95	95		
36	"	85	90		
37	"	87	87		
38	"	85	90		
39	Pharyngitis.	82	85		
40	Constipation.	90	92		
41	Bronchitis.	97	97		
42	"	85	82		
43	Neurosis.	80	80		

blood *immediately* after an intravenous injection of mercury (corrosive sublimate 1 to 6 millegrammes, in from 1,000 to 3,000 parts of normal salt solution) showed evidences of destruction of red corpuscles, with hemoglobinemia and an increase of urobilin in the urine. This is *very* transitory, however.

As an example of the value of the test in differential diagnosis Justus quotes a case of advanced pulmonary tuberculosis in a man who had had syphilis nine years before. An ulceration of the larynx exists, and experts differed as to whether it was a syphilitic or a tubercular ulcer. Justus's test was negative, and was confirmed by the results of the autopsy, which showed a tubercular and not a syphilitic process.

The charts indicate the daily changes in the hemoglobin in two typical cases published by Justus.

Chart I shows the course of the hemoglobin in a case of syphilis treated by inunctions, the crosses marking the times at which the drug was given. The sharp initial drop followed by a gradual rise is well shown.

Chart II shows the effect of intravenous injections of corrosive sublimate (one to six milligrammes, diluted 1,000 to 3,000 times). Here not only the first administration of the drug but the three succeeding ones are followed by considerable losses in hemoglobin, and it is only after the fifth injection that a steady rise takes place.

PERSONAL EXPERIENCE.

In the summer of 1898 at the Out-patient Department of the Massachusetts General Hospital we tried this test in 78 cases of undoubted syphilis, 4 cases suspected of being syphilitic, and 33 control cases of various other diseases, a total of 44 cases. Inunctions were used in all cases, from 15 to 40 grains of the unguentum hydrargyri being given to each patient, with directions how to apply it.

The hemoglobin was tested before the inunction and then, twenty-four hours later, the tests being all performed by the same observer with the same instrument and under similar conditions, a change of less than 10 per cent. was not counted as a positive reaction.

In a general way our results certainly tend to confirm the statements of Justus. All the syphilitic cases reacted strongly and characteristically, and in 33 control cases there was but one genuinely positive reaction. The results on these 44 cases are shown in the accompanying table.

It will be seen that the 7 active *syphilitic cases lost an average of 21 per cent. of hemoglobin after one inunction.* This is surely not accounted for by errors in technique and is in very marked contrast with the figures obtained in the control cases. Of these only 2 out of 33 showed any considerable change after the inunctions. Slight gains and slight losses are recorded by all within the limit of error except 2 cases. One of these was a case of tertian malaria in which a chill occurred just after the inunction. This is sufficient, we think, to account for the loss of 10 per cent. of hemoglobin. The other was a case of chlorosis; in this a typical positive reaction was obtained with a loss of 13 per cent. in hemoglobin. So far as it goes, this case certainly tends to diminish the value of Justus's test. No evidence of syphilis was present and no history of it.

Results. — (1) Positive reactions in 7 cases of syphilis; (2) negative reactions in 32 control cases of other diseases; (3) positive reaction in 1 case of chlorosis.

STARCH DIGESTION IN THE STOMACH.[1]

BY A. E. AUSTIN, A.M., M.D., BOSTON.

It has been usually supposed that the diastatic digestion of starchy food in the stomach is interfered with by the hydrochloric acid of gastric juices within a short time after each meal. Not being able to find any definite statements based on actual experiments, however, I have undertaken to make a systematic research on this important physiological function.

More than two-thirds of the human daily food consists of starchy food, and it will be very interesting as well as important to learn how and where this starchy food is digested.

In carrying out this investigation, human as well as dogs' stomachs were utilized to determine the actual condition of digestion that is going on; and for the purpose of studying the relative functions of starch and diastase, the product known as "taka-diastase" was used, for its amyolytic power is remarkably strong as well as stable. On the other hand, it was found that the diastatic power of saliva easily deteriorates in keeping, and, besides, is liable to change from hour to hour, and day to day, even in one person.

Taka-diastase is an isolated diastatic ferment obtained from the growth of microscopic plants. A certain class of fungi has the property of generating diastase during its growth, on the similar principle that diastase is formed in barley during the process of germinating or malting.

The plant used for this purpose is called "Eurotum oryzæ," or "Taka-moyashi," which is cultivated under artificial conditions with scientific precision. The pure culture of the spore of this plant is sown on moist sterilized wheat bran and allowed to grow at a proper temperature and humidity. The diastase thus generated on the bran is extracted with water and precipitated with strong alcohol. The product is a yellowish-white odorless powder, possessing a nutty taste. It is non-hygroscopic, yet readily soluble in water, with little or no sediment, and has a remarkably strong diastatic power, converting over one hundred times its own weight of starch into sugar within ten minutes.

The experiments were carried on to investigate the following points:

(*a*) The digestion of starch by taka-diastase in a neutral medium, the relative amount of starch and diastase, and also the time required for complete digestion.

(*b*) The action of free hydrochloric acid on the digestion of starch by taka-diastase.

(*c*) Action of free organic acids on starch digestion by taka-diastase.

(*d*) The effect of free hydrochloric acid on starch digestion in the presence of albuminized hydrochloric acid.

(*e*) Influence of hydrochloric acid on starch digestion in the presence of albuminoid foods — both animal and vegetable albuminoids.

(*f*) The action of hydrochloric acid of dog's gastric juice on starch digestion in a dog's stomach in the normal digestion with a dose of taka-diastase.

(*g*) Influence of hydrochloric acid of human gastric juice on starch digestion in the human stomach both with and without taka-diastase.

(*a*) THE DIGESTION OF STARCH BY TAKA-DIASTASE IN A NEUTRAL MEDIUM AND THE RELATIVE AMOUNT OF STARCH AND DIASTASE; ALSO THE TIME REQUIRED FOR COMPLETE DIGESTION.

For this purpose a quantity of three-per-cent. starch paste, or clyster, was made by pouring into 1,800 c. c. of heated distilled water 60 grammes of pure potato starch, suspended in 200 c. c. of water, with constant agitation until the mass acquired a translucent appearance, and then cooling to 40° C.

Twelve glasses of a capacity of about 200 c. c. were carefully graduated and marked with a file at the 100 c. c. point. Into each glass the starch clyster was poured, up to the 100 c. c. mark, representing 3 grammes of starch in each. The glasses were numbered, and in the order in which they were numbered were put into a large shallow pan containing water at 40° C.

Three grammes of taka-diastase was dissolved in 100 c. c. of distilled water (1 c. c. = 0.03 grammes) and different volumes of this solution, varying from 0.3 c. c. up to 9 c. c., were added and stirred simultaneously — noting the time. At this stage it was observed that the speed of the liquefaction of the starch jelly was proportionate to the quantity of diastase used; that is, the more diastase present the quicker the liquefaction. In cases like Nos. 7, 8 and 9 the liquefaction took place almost instantaneously.

Number of the glasses.	Cubic centimetres. 3 per cent. starch jelly.	Grammes of starch in each glass.	Cubic centimetres. 3 per cent. taka-diastase solution.	Grammes of taka-diastase in each glass.	Ratio of taka-diastase to starch.	Number of minutes when achromatic point was reached.
1	100	3	0.3	0 009	1:333	63
2	100	3	0.4	0.012	1:250	50
3	100	3	0.5	0.015	1:200	40
4	100	3	1	0.03	1:100	27
5	100	3	2	0 06	2:100	25
6	100	3	3	0.09	3:100	20
7	100	3	4	0.12	4:100	18
8	100	3	5	0.15	5:100	15
9	100	3	6	0.18	6:100	13
10	100	3	7	0.21	7:100	10
11	100	3	8	0.24	8:100	7
12	100	3	9	0.27	9:100	5

At an interval of every minute or two a drop of the liquid was taken out of each glass and dropped on a white porcelain plate, and to each of these drops a drop of a weak solution of iodine in potassium iodide was added, and the color of each observed after spreading it with the finger to the size of a silver dollar.

It was observed that in the first set of tests the colors of the different drops varied from insoluble blue to soluble blue, purple, brown, with their intermediate colors, and eventually to colorlessness, in showing the different stages of digestion of the starch into soluble starch dextrin, erythrodextrin, achrodextrin, maltose and dextrose.

The larger the amount of diastase used the quicker the achromatic point was reached, or, in other words, the more rapid the digestion. For instance, in the case of No. 12 an achromatic point was reached in three minutes, while in the case of No. 1 it took about an hour.

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[1] From Chemical Laboratory, Tufts Medical School.

It was also observed that with a given proportion of starch to diastase the transformation of starch into dextrins and sugars went on in the same order as above mentioned.

Similar experiments were repeated several times with similar results, proving conclusively that diastatic digestion takes place very rapidly; and its rapidity can be regulated at will, with the quantity of diastase used; and also that taka-diastase digests three hundred times its own weight of starch inside of one hour in a neutral medium.

(*b*) THE ACTION OF FREE HYDROCHLORIC ACID ON THE DIGESTION OF STARCH BY THE DIASTASE.

The following experiments were conducted:

Three-per-cent. starch jelly made in the same manner as described in (*a*) was poured into nine different glasses, 100 c. c. in each, representing 3 grammes of starch in each. These glasses were placed in a pan containing water and were kept at 40° C. Into these glasses different quantities of free hydrochloric acid were placed, varying from 0 to 1.4 parts of the acid in 1,000. The hydrochloric acid was C. P., and contained 31.9 per cent HCl. After the acid was thoroughly mixed in the starch jelly one c. c. of 10-per-cent. solution of taka-diastase, corresponding to 0.1 gramme, was added to each glass and well stirred in, simultaneously noting the time. At an interval of every one or two minutes a drop of the liquid was taken out of each glass and tested with iodine solution, as described in (*a*). It was observed, as shown in the table below, that where no acid was used — as in No. 1 — the achromatic point was reached in fourteen minutes; while in No. 2, where a small quantity of acid existed, the achromatic point was reached somewhat sooner, namely, in ten minutes. When the acidity was increased a little more, as in No. 3, the drops showed a purple color at the end of fifteen minutes; in No. 4, a bluish purple; No. 5, soluble blue; while No. 6 and the remainder of the glasses all showed insoluble blue at the end of fifteen minutes — showing a decided hindering action of free acid on diastase digestion in the test-glass experiments. At the end of fifteen minutes the first three glasses were taken out of the warm bath and put into an ice-box to check further conversion. The amount of sugar was determined after cooling by the polariscope method, after removing the dextrin, if any, by precipitating it with alcohol.

No. of glasses.	Cubic centimetres 3-per-cent. starch jelly.	Cubic centimetres hydrochloric acid. 31.9 per cent. HCl.	Free hydrochloric acid in 1,000.	Grammes taka-diastase.	Ratio of taka-diastase to starch.	Iodine test color at end of 15 minutes.	Per cent. of sugar formed by polariscope.
1	100	.00	.0	0.1	1:100	Colorless.	100
2	100	.03	.1	0.1	1:100	Colorless.	100
3	100	.06	.2	0.1	1:100	Brown.	35
4	100	.12	.4	0.1	1:100	Purple.	..
5	100	.18	.6	0.1	1:100	Purplish blue.	..
6	100	.25	.8	0.1	1:100	Soluble blue.	..
7	100	.31	1.0	0.1	1:100	Insoluble blue.	..
8	100	.37	1.2	0.1	1:100	" "	..
9	100	.43	1.4	0.1	1:100	" "	..

The polariscopic sugar test for Nos. 1 and 2 both showed perfect digestion at the end of fifteen minutes, practically 100 per cent. of sugar being formed; while No. 3 contained but one-third the amount of sugar, compared with Nos. 1 and 2; and the amount of sugar in the other glasses decreased very rapidly as the acid increased.

This experiment shows that the presence of a small quantity of free hydrochloric acid enhances and helps the starch digestion; while beyond a certain amount, however, the diastatic power is weakened; and by larger amounts its action is wholly arrested — at least for the time being.

(*c*) ACTION OF FREE ORGANIC ACIDS ON STARCH DIGESTION BY TAKA-DIASTASE.

As it is often possible to have some organic acids present in the stomach, either from the food itself or from fermentation of the food, it was thought interesting to find out their action on starch digestion. For this purpose, lactic, citric and acetic acids were used. The method was similar to that used in testing (*b*):

LACTIC ACID.

Absolute lactic acid parts in 1,000.	Time of digestion.	Iodine reaction.
.00	17 minutes	Colorless
.02	15 "	"
.25	12 "	"
.46	13 "	"
.67	13 "	"
.86	13 "	"
1.05	13 "	"
1.46	13 "	"
1.84	60 "	Blue.

CITRIC ACID.

Absolute citric acid parts in 1,000.	Time of digestion.	Iodine reaction.
.00	15 minutes	Colorless
.05	13 "	"
.58	8 "	"
1.32	12 "	"
2.43	15 "	"
3.40	65 "	"
4.30	120 "	Blue.

COMMON VINEGAR.

Absolute acetic acid parts in 1,000.	Time of digestion.	Iodine reaction.
.00	15 minutes	Colorless
.11	12 "	"
1.23	5 "	"
2.35	7 "	"
3.47	10 "	"
4.59	12 "	"
5.71	12 "	"
6.83	12 "	"

These results demonstrate that starch digestion is not interfered with by the presence of organic acid, particularly vinegar; there seems to be no limit for practical purposes. They also show that a small quantity of acid accelerates the starch digestion instead of hindering it, as was also shown in the case of hydrochloric acid.

(*d*) THE BEHAVIOR OF FREE HYDROCHLORIC ACID TOWARD STARCH DIGESTION IN THE PRESENCE OF ALBUMINIZED HYDROCHLORIC ACID.

Taking into consideration the fact that there exists in the gastric juice of the stomach some pepsin and combined hydrochloric acid, besides free hydrochloric acid, it was considered interesting to find out the behavior of free hydrochloric acid toward starch digestion in the presence of pepsin and albumin — combined hydrochloric acid.

For this purpose, a litre of dilute hydrochloric acid, containing 2½ parts of HCl and 2 grammes pepsin in 1,000, was digested over night at 40° C. with some boiled white of egg finely comminuted. The next morning the solution was filtered and tested for the free acid remaining uncombined.

The liquid was titrated with deci-normal soda solution, using a few drops of a solution of dimethyl-amido-azo-benzine as indicator for free acid, and it was found to contain two parts of free hydrochloric acid in 1,000; while the same liquid showed 2.5 in 1,000 when rosolic acid was used as indicator — showing the total amount of acid, both free and combined.

As this acid solution necessarily takes up more room than strong acid, 6-per-cent. starch paste was made and 50 c. c. of it was put into each glass instead of 100 c. c. of 3-per-cent. solution. Into these glasses different amounts of albuminized hydrochloric acid (artificial gastric contents) were added — varying from 5 c. c. to 50 c. c., and each glass was made up to 100 c. c. by the addition of water at 40° C. and well stirred.

Into this acidified starch the same quantity of taka-diastase was added to each glass, and the different stages of conversion observed as before, as will be seen in the following table.

For a given and the same amount of acid present the starch digestion in this case is better than in the case where no combined acid existed. For instance, where in experiment (*b*) in No. 3 the achromatic point was only reached at the end of fifteen minutes, in this case it was reached in eight minutes; and the remaining glasses showed a similar difference in favor of the presence of combined acid. This seems to indicate that the presence of albumin combined with hydrochloric acid seems to lessen the hindering action of free acid on starch digestion.

Number of glasses.	Cubic centimetres albuminized acid containing two parts free acid in 1,000.	Free hydrochloric acid in 1,000.	Grammes of taka-diastase.	Achromatic point reached. Number of minutes.	After 15 minutes iodine test showed.
1	0	.0	0.1	12	Colorless.
2	5	.1	0.1	8	"
3	10	.2	0.1	8	"
4	20	.4	0.1	..	Brown.
5	30	.6	0.1	..	Purplish blue.
6	40	.8	0.1	..	Blue.
7	50	1.0	0.1	..	Blue.

(*e*) THE INFLUENCE OF HYDROCHLORIC ACID ON STARCH DIGESTION IN THE PRESENCE OF ALBUMINOUS FOODS — BOTH ANIMAL AND VEGETABLE ALBUMINOIDS.

Being encouraged by the results of the foregoing tests, it was considered a natural sequence to test the starch digestion in the presence of some albuminoid.

As a matter of fact, people always eat some albuminous matter with starchy food. Generally speaking, one-third of our daily food consists of albuminous food and two-thirds of starchy food. It was therefore thought imperative to find out the relation of the albuminoid food to the digestion of the starchy food.

For this purpose, a starch digestion in the presence of free hydrochloric acid, identical with that of (*c*) was performed with the addition of 10 c. c. of egg albumin to each glass. As will be seen from the following table, the starch digestion was wonderfully facilitated by the presence of an albuminous substance. The free hydrochloric acid combines with the albumin and becomes non-active, or inert to starch digestion. It will be noticed that in experiment (*d*) Nos. 4 and 5 were on the danger line, while in this case even No. 6 enjoys good digestion of starch. In the case of No 8, 100 c. c. of acid was mixed with 10 c. c. of the albumin; at the end of half an hour 1.1 part out of two, or 55 per cent., of free acid was found in a combined state, leaving only .9 part of free acid.

No. of glasses.	Albuminized acid containing two parts free HCl. in 1,000.	Free hydrochloric acid in 1,000.	Six per cent. starch jelly, 50 cubic centimetres in each glass, or grammes starch.	Egg albumin.	Iodine test. No. of minutes when achromatic point was reached.	Amount of free acid after digestion. A.
1	0	0	3 grammes.	10	14	0
2	5	.1	3 "	10	8	0
3	10	.2	3 "	10	8	0
4	20	.4	3 "	10	8	0
5	30	.6	3 "	10	12	0
6	40	.8	3 "	10	20	2
7	50	1.0	3 "	10	..	3
8	100	2.0	0 "	10	..	.9

To further verify this fact, 100 c. c. of the albuminized acid, containing two parts of free hydrochloric acid and one-half part of combined hydrochloric acid in 1,000, was digested with 50 grammes of chopped-beef meat at 40° C. for half an hour. On testing, it was found that there was no free hydrochloric acid, and the total acid showed 2.5 per 1,000, as originally existed.

Another test was made with vegetable albumin: To 100 c. c. of the same albuminized acid 25 grammes of so-called canned Boston baked beans were added and well stirred, and put into a water bath at 40° C. At the end of five minutes a sample was taken out, tested for free acid, and all free acid was found to be gone. While testing for total acid it was found to be 2.5 by rosolic-acid test.

These tests seem to show conclusively that albuminous food, which is always coexistent with starchy food, takes up or combines with free hydrochloric acid of gastric juice and gives full swing to the diastatic digestion of starchy food in the stomach.

(*f*) THE BEHAVIOR OF HYDROCHLORIC ACID OF DOG'S GASTRIC JUICE TO STARCH DIGESTION IN A DOG'S STOMACH IN THE NORMAL DIGESTION; WITH A DOSE OF TAKA-DIASTASE.

Having demonstrated in test-glass experiments the fact that albuminous food combines with free hydrochloric acid, and the combined hydrochloric acid thus produced does not interfere with starch digestion, it became necessary to find out whether or not such would occur in the animal stomach. It is the usual custom to give a test breakfast consisting of toast and tea, to find out the condition of the gastric secretion of the stomach. While it may answer for some specific purpose, that kind of a test meal is not a fair one to find out the actual condition of hydrochloric acid in the stomach after a regular and ordinary meal, and having in view a desire to find out what effect albuminous food has on the hydrochloric acid of the stomach, the following meal was given to a dog on the first day:

DOG'S FOOD, No. 1.

Beef meat, raw	200 grammes.
Starch paste, 7% strength	200 c. c.
White of egg, raw	1 egg.
White of egg, boiled	1 egg.
Salt	½ teaspoon.
Taka-diastase	1 gramme.

After thirty minutes the contents of the stomach were pumped out after giving 100 c. c. of water, and the contents examined. The contents were tested for starch, but all starch was perfectly digested, giving no coloration with the iodine test.

There was no free acid present — showing only a pure yellow coloration — when tested with dimethyl-amido-azo-benzine.

The amount of combined acid was found to be .86 in 1,000, using rosolic acid as indicator.

On the second day the following test meal was given to the same dog:

DOG'S FOOD, No. 2.

Chopped-beef meat, cooked	400 grammes.
20 grammes starch cooked in	300 c. c.
Table salt	½ teaspoon.
Boiled white of eggs	2 eggs.
Taka-diastase	1 gramme.

The contents were pumped out at the end of one hour, giving 100 c. c. of water before pumping. The contents did not contain any free acid, nor any starch at all.

Having found that the stomach was comparatively empty, another meal was given for a forty-five-minute test. The same dog was fed with a similar meal, as follows:

DOG'S FOOD, No. 3.

Chopped cooked beef	400 grammes.
10% starch jelly	200 c. c.
Table salt	½ teaspoon.
White of eggs, raw	2 eggs.
Taka-diastase	1 gramme.

At the end of forty-five minutes the stomach's contents were pumped out and examined. It contained no free acid whatever, nor any trace of undigested starch.

These experiments confirmed the results of test-glass experiments (*e*) and (*a*), namely, that albuminoid food neutralizes and combines with the free hydrochloric acid of the gastric juice; and combined hydrochloric acid does not interfere with the diastatic digestion of starch, and no free acid was found in the stomach contents when pumped out at intervals of thirty, forty-five and sixty minutes.

(*g*) THE BEHAVIOR OF HYDROCHLORIC ACID OF HUMAN GASTRIC JUICE TOWARD STARCH DIGESTION IN THE HUMAN STOMACH, BOTH WITH AND WITHOUT TAKA-DIASTASE.

In order to make the results of the foregoing experiments conclusive beyond dispute, the contents of a human stomach (after eating a square meal) were examined.

Mr. Mc——, a student who has the rare faculty of being able to evacuate any portion of the contents of his stomach at his will without feeling any inconvenience whatever, kindly volunteered and offered his services in the interest of science to decide this important question under investigation.

His breakfast consisted of:

One saucer of oatmeal with milk and sugar, one-quarter pound of beefsteak, medium done, two slices of bread and butter, two baked potatoes, one cup tea, one slice of cake.

The contents were evacuated with ease at the end of one hour and ten minutes. The contents were tested for starch, but no perceptible amount of starch could be found except one or two bits of bread crust which escaped disintegration, and the contents showed the presence of a small quantity of free acid.

The contents were filtered and quantitatively tested for free acid, total acidity, and acidity due to acid phosphate, as follows:

Total acidity in 1,000	1.27
Acidity due to acid phosphate	0.10
Total hydrochloric acid	1.17
Free hydrochloric acid	.18
Combined hydrochloric acid	.99

The second test meal was at lunch hour, and consisted of the following:

One-half dozen oysters on the shell, with crackers; one glass of Manhattan Cocktail; consommé soup; roast beef, two slices; mashed potato, double portion; .4 litre lager beer; bread and butter; Rochefort cheese with toasted crackers; one gramme of taka-diastase.

After one hour 400 c. c. of the contents were evacuated. The starch was found all digested, and no free acid could be found. Total acidity was as follows:

Total acidity	1.17 in 1,000
Acid phosphate	.18 in 1,000
Total hydrochloric acid	.99 in 1,000

Thirty minutes later (one and one-half hours after eating) another sample was begged and analyzed.

The contents at this time were found to be a good deal thinner than those of the first evacuation and contained no starch — even a part of the toasted crackers had disappeared. The contents were filtered, and at this time free acid showed its appearance:

Total acidity	1.86
Free acid (with some organic acid)	.40
Combined acid	1.46

Qualitative test showed the presence of a small quantity of acetic and lactic acid, but no quantitative determination was made, for they are practically harmless on starch digestion, as shown before.

From the results of the foregoing experiments the following facts seem to be well established:

(1) Taka-diastase digests starch with remarkable rapidity in a neutral, or slightly acid, medium; and its rapidity is directly proportional to the quantity of taka-diastase used. Taka-diastase in the above medium is capable of digesting three hundred times its own weight of starch in one hour.

(2) The digestion of starch by taka-diastase is accelerated and enhanced by the presence of a small quantity of free hydrochloric acid, while beyond a certain amount the free hydrochloric acid retards and eventually arrests the diastatic digestion.

(3) The digestion of starch by taka-diastase is not interfered with by organic acids for all practical purposes; on the contrary, the presence of a small quantity of organic acid enhances the diastatic digestion of starch.

(4) The presence of albumin combined with hydrochloric acid seems to lessen the hindering action of free hydrochloric acid on starch digestion.

(5) Albuminous foods — both of animal and vegetable origin — combine with, or neutralize, free hydrochloric acid of gastric juice, making the acid perfectly inert. The combined hydrochloric acid has no hindering action on diastatic digestion by starch.

(6) In dogs' stomachs, when albuminous foods are

given with starchy food, no free hydrochloric acid is found at the end of one hour, and in the meantime starchy foods are perfectly digested.

(7) In the human stomach, when an ordinary regular meal is taken, the albuminous matter of the food combines with the hydrochloric acid of the gastric juice as fast as it is formed, at least for a period of one hour, and such combined hydrochloric acid has no hindering action on starch digestion; and the diastatic digestion of starchy food is practically completed within that period.

Clinical Department.

A CASE OF CARCINOMA IN THE RIGHT HYPOCHONDRIAC REGION.[1]

REMOVAL OF EIGHTY-ONE GALL-STONES, AND EXCISION OF THE CANCER, TOGETHER WITH THE ENTIRE GALL-BLADDER, A SMALL PORTION OF THE LIVER AND A LARGE PART OF THE ANTERIOR WALL OF THE STOMACH — RECOVERY FROM THE OPERATION.

BY GEORGE H. MONKS, M.D., BOSTON.

This case seems to me to be of interest, especially for the reason that —

(1) The cancer involved several important organs.

(2) The case demonstrates the value of nutritive enemas. (The stomach would retain nothing whatever for many days at a time, and for long periods reliance was placed almost exclusively on the enemas.)

(3) The presence of the large number of stones in the inflamed gall-bladder suggests the possibility that these conditions acted as an exciting cause of the cancerous growth.[2]

History of the Case. — The patient was a woman, thirty-six years of age, and married. Her family history revealed no case of malignant disease. She had had nine children, the youngest fifteen months ago. She had never had a miscarriage, and her menstruation appeared to be normal in all particulars.

She entered the hospital on October 7, 1898. About five weeks before this she had discovered a lump high up in the right side of the abdomen, just below the costal border. There had been occasional pain in this tumor, especially when she coughed, but it had not been noticeably tender to the touch. It had not increased in size to any extent since she first noticed it. The bowels had been regular. There had been no vomiting, though occasionally after eating the patient was somewhat nauseated. She had lost much flesh.

A careful examination was made when the patient entered the hospital. She was a well-developed and fairly-well nourished woman. The abdomen was soft and pliable. Just to the right of, and above, the umbilicus, could be felt a tumor apparently about five inches long and three inches wide. It was quite freely movable, and could be pushed somewhat in all directions. The tumor itself was firm and elastic, its surface somewhat irregular, and in parts indistinctly nodulated. There was some tenderness on deep pressure over the tumor.

From time to time after the woman entered the hospital the tumor was examined, and its characteristics were found to be unchanged, except that occasionally it was apparently quite tender to the touch, and its mobility was less marked. The temperature also was up a couple of degrees or so on one or two occasions.

Under ether (on October 14th), an oblique incision was made through the abdominal wall, just below and parallel to the right costal border. A large mass presented itself, which upon examination proved to be the enlarged gall-bladder. This was opened, and found to contain numerous (eighty-one) very light-colored gallstones, mixed with a considerable quantity of soft grumous material, and some pus. After these had been removed and the wound washed out the wall of the gall-bladder was inspected, and found to be much thickened and, in spots, softened, and apparently necrotic. Its lining was shaggy, and from it projected shreds and tags of reddish-white tissue. Upon examining further for stones in or near the duct the finger came upon a firm, indurated mass, presumably cancer, apparently involving the apex of the gall-bladder and extending to the anterior free border of the right lobe of the liver and the anterior wall of the stomach.

At this point it became necessary to decide whether to abandon further operation, to insert drainage and apply dressings, etc., on the ground that it would be useless and too dangerous to attempt anything further, or to proceed to excise the entire mass, with the idea that the patient would stand a fair and reasonable chance of surviving the operation and the resulting shock. The latter alternative was thought to be, on the whole, the better for the patient, and it was forthwith carried out. The cystic duct was tied off with silk, and a wedge-shaped piece of the liver was removed, the edges of the liver wound being united by catgut. The tumor was now free, except for that part which involved and projected into the stomach. An incision, encircling the growth and giving it a wide margin, was now made through the anterior wall of the stomach, and the entire mass, including — besides the growth itself — a large portion of the stomach, a part of the anterior border of the liver and the entire gall-bladder, was removed. The wound was now thoroughly cleaned out, and the hole in the wall of the stomach (which reached to within a couple of inches of, but did not involve, the pylorus) was stitched with a double row of Lembert sutures, so as to bring the lips of the wound together *laterally*; that is to say, the two sides were sutured together by a vertical row of stitches, this method ensuring more room in the stomach and less danger of stricture than would have been the case if the upper and lower parts of the wound had been approximated. After the entire wound had been very thoroughly irrigated and cleaned a gauze drain was inserted and the skin edges brought together by silkworm-gut sutures, except where the gauze drain emerged. The usual dressing was then applied.

The report of the pathologist showed the growth to be *epidermoid cancer*. That portion of the growth which involved the stomach seems to have penetrated the mucous membrane of that organ "through a slit-like aperture," and to have projected into its cavity as a soft, reddish, fungoid mass.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, January 4, 1899.

[2] I believe that inflammation and other sources of irritation exert a more constant influence in the causation of malignant disease in the abdomen than is usually thought to be the case. From time to time during operations and in the examination of specimens I have had abundant evidence of this. Only a few months ago this point was forcibly brought to mind in a case where I resected, for cancer, the cecum of a young man. In the middle of the growth I found, approximately in the position where the appendix should be, a long slough of size and shape like the appendix. This slough suggests, of course, the possibility of a former appendicitis as an exciting cause.

Though from time to time during and immediately after the operation it was necessary to use hypodermic injections of strychnia and digitalis freely, the patient stood the operation very well. Many days elapsed, however, before she seemed to be entirely out of danger; for she continued very weak, her pulse became feeble and rapid from time to time, and on one or two occasions the temperature rose appreciably. The stomach rejected everything given by the mouth and reliance had to be placed on nutritive and stimulating enemas, to which, in the early periods after operation, a few drops of the deodorized tincture of opium were added. Had it not been for these enemas the patient could hardly have survived, because of the fact that for a week or ten days she could retain absolutely nothing in the stomach, and even for weeks afterwards there was occasional vomiting. Finally, she could take by the mouth small quantities of milk and lime-water, and, a little later, ice-cream, Mellin's food, etc.

Two days after the operation the dressings were changed and the wicks were removed. As there was considerable discharge of bile from the wound, a rubber tube was inserted. For two or three weeks bile escaped in varying quantities from the wound. The stools were normal, except that occasionally they were a little lighter in color than natural. They were never "clay-colored."

Three weeks after the operation the patient sat up in bed with a bed-rest. There was now no further escape of bile from the wound; only a small quantity of pus came through the sinus which had formed. Six weeks after the operation the patient sat up in a chair. Even up to this time she occasionally vomited, and the rectal enemata were continued. Eight weeks after the operation she sat up every day. Some little pus still came from the sinus. At about nine weeks after the operation the patient went home. At this time she was better than at any time since the operation, and, considering what she had gone through with, was in a very satisfactory condition. The sinus persisted. There was no sign of recurrence of the cancer. Since the patient left the hospital she has not been heard from, though a recurrence is naturally to be feared.

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SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

Regular meeting Wednesday, January 4, 1899, Dr. J. C. Warren in the chair.

Dr. J. C. Warren showed two cases of fractured patella.[1]

PRESENTATION OF PATIENTS OPERATED UPON FOR FOREIGN BODY IN THE THROAT.

Dr. D. W. Cheever read a paper entitled

ESOPHAGOTOMY FOR FOREIGN BODY.

The average life of a generation, thirty-three years, having passed since, in 1866, I operated for esophagotomy, it would not be unprofitable to review the progress of this surgical procedure. Prior to my own I can find no record of this operation having been done in America.

Amolt says it is not to be found in English records as having been done in England before 1833; and yet the first esophagotomy was done by Goursauld, in 1738, a century before.

The fear of a permanent esophageal fistula, and starvation, seem to have been the causes which deterred surgeons from trying to remove a foreign body from the esophagus, except *per vias naturales.*

Meanwhile history was proving that a foreign body once securely lodged below the cricoid cartilage, in the majority of cases produced abscess, perforations, and frequently death: by sepsis, by hemorrhage, by empyema. The experiments of Gnattain, in 1747, on dogs, proved that esophageal wounds would close; that abscess followed unrelieved impaction; that commencing suppuration was often not delayed beyond the third day.

Fig. 1. Piece of tinned iron in esophagus.

From the monograph of Crequy, in 1861, we cite these fatal cases:

(1) Death on the nineteenth day; abscess bursting into trachea.

(2) Death on the thirteenth day; esophagus proforated by abscess.

(3) Death on the fourteenth day; perforation.

(4) Foreign body in throat; abscess into chest.

(5) Death in two months; perforation back of esophagus, and caries of vertebræ.

(6) Death in six months; a coin found near cardiac orifice stomach, with abscess.

(7) Death on the eighth day; two perforations, pneumonia by contact.

(8) Death on the eleventh day; perforations front and rear; pus down to the stomach.

The nature of the foreign body marks the first important distinction; the length of time impacted, the second.

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[1] See report of Clinical Meeting of the Medical Board, Massachusetts General Hospital, December 16, 1898.

Since the date when I published a monograph on esophagotomy, in 1868, the operation has become common, but the mortality has not been reduced. Prior to 1868, 21 cases, 4 deaths — about 19 per cent.; since 1868, 145 cases, 39 deaths — about 27_2 per cent. If this operation is done before suppuration and perforation have taken place the mortality will be very slight.

Operation should not be deferred beyond the third day, if we can have our choice. When successful, it *cures*, and is therefore doubly gratifying. My six cases are cited below. It will be seen that we now have in the Röntgen ray a most valuable assistant in diagnosis.

The following problems present themselves for solution:

(1) Shall we sew up? and if so, what?

(2) How shall we nourish?

(3) How low down in the esophagus can we safely seek for a foreign body by the incision in the neck? When must we approach it by opening the stomach?

My personal custom has been to leave the wound open — except in one instance. I have never used the stomach-tube to feed the patient. I have operated by the neck with success, when the foreign body was opposite the nipple, and finally, the forefinger can reach the arch of the aorta with ease, through the incision in the neck.

My cases are as follows:

No. 1; 1866. Fishbone; operation, third day, opposite cricoid cartilage; no stitches; closed twenty-one days.

No. 2; 1866. A pin; operation, third day; transverse, opposite first to second rib; closed four weeks; no stitches.

No. 3; 1868. Pins; esophagus stitched; sloughed away; closed nineteen days.

No. 4; 1881. Fishbone; operation second or third day; opposite arytenoid cartilages; mixed symptoms of laryngismus and salivation, and impossibility to swallow; no cough; great constitutional disturbance; no stitches. Died in forty-eight hours, of shock and broncho-pneumonia.

No. 5; 1892. Epileptic and feeble-minded; plate and teeth swallowed in a convulsion; probably in esophagus one week; opposite the nipple; long efforts to seize the foreign body through the esophageal cut; no stitches. Died of shock in twenty-four hours.

No. 6; 1897. A child two and one-half years; a square piece of tinned iron; opposite the second and third ribs; in esophagus three weeks; child swallowed fairly well, and played about. Diagnosis by x-ray; no stitches; closed in seventeen days.

The x-ray photograph (Fig. 1) and the foreign body are exhibited with this case.

Dr. S. J. Mixter reported the

REMOVAL OF A PEACH STONE BY ESOPHAGOTOMY.

This patient while eating a peach last summer swallowed a peach stone. The remarkable point about this case is that for a great many years he had had a certain amount of esophageal obstruction, so that he was unable to swallow large mouthfuls of anything, and when he swallowed this peach stone it stuck. I do not think it would have stuck in a large esophagus. He came to my office and I took him to the Massachusetts General Hospital, and there I could feel the peach stone distinctly. I could not move it and could not get the probang beyond it. It was evident that he had a constriction and a pouch at the cardiac orifice of the stomach. At any rate, you could pass the probang down and feel this hard mass, but it did not push it on into the stomach and the probang did not go beyond it. An esophageal bougie would go by into the stomach. I tried at first, without ether, to grasp it with various esophageal forceps through the mouth. I have picked out quite a number of foreign bodies with esophageal forceps. It was impossible to get it with forceps, so I etherized and did esophagotomy. The esophagus was opened without the slightest difficulty. It seems to me it is a most beautiful operation, anatomically, and I think we all owe the greatest debt of gratitude to Dr. Cheever, who was the pioneer in this operation. In this case I did not tie a single vessel, and I have done I think six esophagotomies, for various reasons, and in only one or two have I tied a vessel, and those have been the external jugular, where I tied it as I divided it. You can go down without the slightest bit of hemorrhage and open the esophagus and go into it. When you get into it the question is how to get the foreign body. I tried to get this stone with various kinds of esophageal forceps, but I found I could not grasp it, and finally I thought of using the ordinary uterine curette, and that is what caught the peach stone and brought it up into the wound. It went to the bottom of this pouch and brought the peach stone into view, and then the stone was seized and taken out. The incision was as low as I could make it in the esophagus. The patient was in the hospital eight days, and went out entirely healed. The wound closed in four or five days. I have always sewed up the esophagus in these cases with catgut as tight as possible, and left the external wound open a couple of days, and packed it with gauze. The gauze is then removed, and sometimes there is a little leaking for a few days, but in a very short time the wound has always closed. I think that this is one of four esophagotomies I have done for foreign bodies, and in all these cases the esophagus has been sewed up. In the other cases there was much less difficulty in seizing the object, generally with the ordinary esophageal forceps. Here is a photograph of a foreign body, a pin, said to be swallowed. The patient entered the hospital, and it was not known whether the foreign body was in the trachea, esophagus or bronchus, and finally with the x-ray it was found and was probably in the lung alongside the pericardium. The thing was left, and, as far as I know, never produced the slightest trouble.

Dr. A. Post reported

A CASE OF ESOPHAGOTOMY FOR REMOVAL OF FOREIGN BODY.

I think that the first surgical monograph I read was Dr. Cheever's monograph on esophagotomy, and the operation from that moment to this has always been an extremely interesting one to me. I never had the opportunity to do the operation but once, and that was in November, 1893, and in December I showed the little girl in this room. She was twelve years old, and swallowed a silver quarter, a birthday present. The operation was done on the fifth day after she had swallowed the quarter. After the child was etherized it was easy to locate it by feeling from the outside. Deglutition was entirely cut off at first, but the silver piece had changed its own position, so that she swallowed sometimes with comparative ease. The reason why the operation was delayed so long was because she had succeeded in deceiving a really intelligent nurse into thinking the piece of money had passed down and that she swallowed with perfect ease. The operation was anatomically as beautiful as Dr. Mixter has described, was done without the loss of blood and without cutting a blood-vessel. That was at the end of the fifth day. It was interesting to note as the trachea was separated from the esophagus, that there were a few bubbles, which showed that the coin was beginning to ulcerate through, although no hole could be perceived, and that suppuration was evidently started. The coin was removed with comparative ease after the incision into the esophagus, the parts were replaced, the ends of the external wound were sutured. The esophagus itself was not sutured but was carefully replaced, and the stitches in the external wound at each end (the middle being left unsecured) were of such character as to hold the parts in their natural and proper places. Then followed the particularly interesting point in my case. The next morning I found the little girl up and running about the ward. She had been fed with bread and milk, none of which had passed through the wound, and from that moment to this nothing ever passed through the wound, nor was there any suppuration. I said at the time, I believe it was the only operation in which healing by first intention had followed, and in which there never had been any leakage whatever. It is a disappointment to me not to show the young lady, but she has been seen within a year. The scar is comparatively trifling, does not show above her ordinary dress.

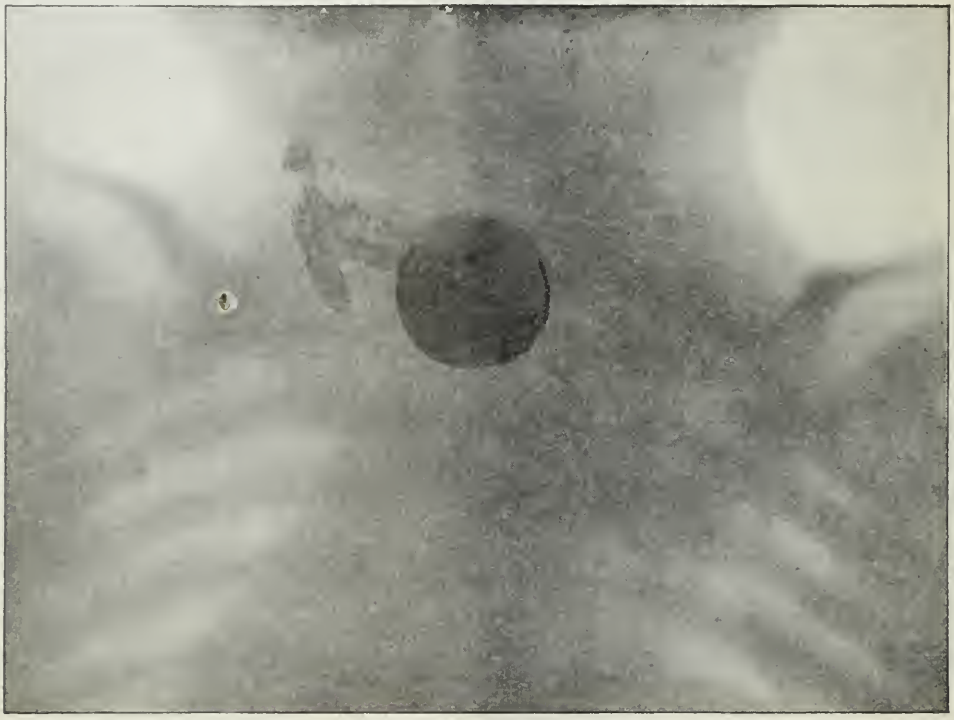
FIG. 2. Five-cent piece in the esophagus.

THREE CASES OF OPERATION FOR FOREIGN BODIES IN THE THROAT LOCATED BY THE X-RAYS.

DR. HARRINGTON showed three foreign bodies removed from the throat in which x-ray apparatus had been used. In two of them the location was determined by this means.

(1) Child, one and one-half years old; safety-pin four days in trachea, perfectly seen by the fluoroscope while the child was under ether; easily removed; recovery.

(2) Child, sixteen months old; metallic button size of five-cent piece, with a pin attached. Photograph showed pin just below the upper end of sternum. Symptoms indicated the esophagus as the location. It had been swallowed five weeks. The child was in very feeble condition. It was removed by esophagotomy. The pin had been driven through the posterior wall of the esophagus, probably by the passage of a probang, although nothing could be felt by that instrument. The child died on the sixth day after the operation. At autopsy, "Multiple ulcerations of esophagus, bilateral otitis media and general anemia."

(3) Child, two years old; obstruction in trachea for four weeks; nothing discovered by x-ray apparatus. Symptoms were those of a loose body playing up and down in the trachea, causing paroxysmal cough. On operation a watermelon seed was removed. In the cases of the two metallic bodies the x-ray apparatus was of great value.

The danger of using the probang was illustrated in case No. 2, in which, while not detecting the foreign body, the probang pushed the pin through the wall of the esophagus. My feeling in regard to the removal of foreign bodies in the esophagus is that early operation is safer and wiser than the use of esophageal instruments except to determine the location. I believe, with Dr. W. Elliot, that much damage may be done to the esophagus and the larynx by the use of long forceps and by coin catchers.

CASES OF FOREIGN BODY LOCATED IN THE ESOPHAGUS BY X-RAY PHOTOGRAPHS.

Dr. J. W. Elliot reported these cases:

Case I. *Esophagotomy for a coin in the esophagus.* — The patient, a boy three years old, came to the hospital on July 20, 1898, having swallowed a five-cent piece four days previous. He had had continuous regurgitation of thick mucus, and anorexia, following numerous attempts to remove it.

An x-ray plate showed the coin clearly just above and partly behind the sternum. (Fig. 2.)

The coin catcher proved to be very dangerous, as it caught behind the larynx, and was difficult to withdraw without doing damage. Esophagotomy was done just above the clavicle and the coin removed. The esophageal wound was sutured with catgut, but the external wound was packed with gauze. The child was not the least upset by the operation, and the wound healed quickly with only slight leakage.

It was obvious that the operation was easier and less dangerous than the attempts to remove the coin through the child's very small throat.

Case II. *A tin Whistle in the Esophagus and Stomach.* — The patient, a boy eight years old, came to the hospital June 7, 1897, having swallowed a tin whistle a few hours previous. The x-ray plate (Fig. 3) showed this just above the sternal notch, even the hole in the whistle being clearly defined. After etherization, the whistle could not be detected with the probang. This led to a second examination with the fluoroscope, which showed that the whistle was in the stomach, having slipped down during etherization.

The patient was examined every day for ten days with the fluoroscope by Mr. Dodd; the whistle could be seen plainly at first, but became very indistinct after five or six days, and finally could not be seen at all. The child was kept in the hospital for two months, but had absolutely no symptoms, and never passed the whistle. It is, therefore, supposed that it must have been dissolved.

Dr. Farlow: Apropos of Dr. Elliot's case of whistle in the throat, the possibility of its having been absorbed was spoken of. Could that have occurred in so short a time?

Dr. Harrington: I think Dr. Elliot supposed it might have been one of those very thin, so-called "tin whistles," and he thought the effect of the gastric juice upon it had been to produce gradual decomposition.

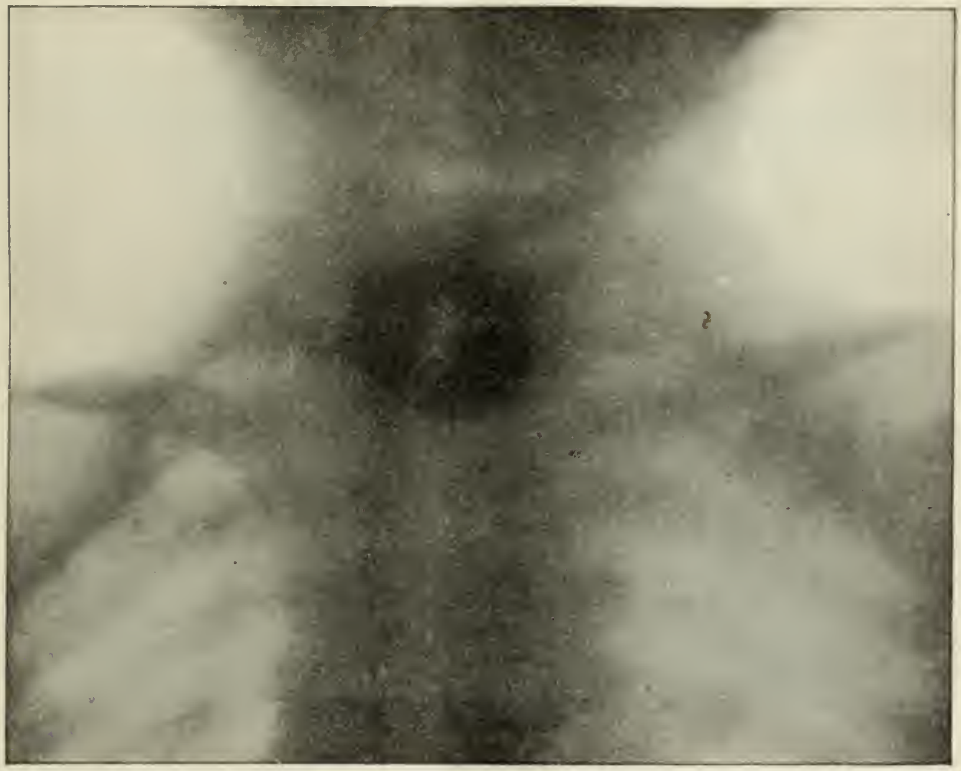

Fig. 3. Tin whistle in esophagus.

Dr. Warren: I should like to ask if Dr. Farlow has not seen tracheotomy tubes eroded very extensively?

Dr. Farlow: I have seen a case where the inner tube of a tracheotomy tube, which had been worn for a long time, broke off and fell into the trachea, but this was in a case of long standing.

Dr. Warren: I think a place where foreign bodies are often caught in the esophagus is between the box of the larynx in front and the vertebral column behind, for instance, a large fragment of potato or meat, and that can be pushed down into the stomach with the ordinary ivory-tipped probang. I remember such a case occurring in my father's household. He ran into the kitchen with a probang and pushed it down into the stomach quickly. He made a remark at that time which is worth remembering, and that is that, like all other cases of that kind, the patient insisted that the foreign body was still there; the sensation of pressure still remained after the fragment had been removed, but the patient was able to breathe, the difficulty of breathing being a reflex action, probably owing to the pressure on the trachea. I think that method in simple cases is sufficient to relieve the trouble. I suppose it is the same place where by slapping on the back there is a spasmodic contraction of the constrictor muscles and the foreign body is forced upwards.

DR. CHEEVER: I do not wish to take up any time, Sir, but I did not quite take in the fact that this meeting included foreign bodies in the air passages or I would have brought down a few specimens I have. I thought it was limited to the esophagus. I would like to mention one case that shows the tolerance of the system in a young child from whom I removed a shawl-pin, quite a good-sized shawl-pin, from the trachea, which had been in six weeks. The child was four or five years old. It really seemed somewhat of a mystery how the shawl-pin was accommodated, but it had gravitated down and the head rested on the bronchi and the pin lay up somewhere in the neighborhood of the larynx. The child had had constant paroxysms of coughing, afterwards broncho-pneumonia, and, when I saw it, well-marked bronchitis, and every few minutes a paroxysm of croup. It recovered promptly after the pin was removed. Another child was brought from the extremity of the Cape, Provincetown, which is quite a long ride. I happened to be at the City Hospital at the time, and removed a foreign body from the trachea. It was one of these tin stamps put on packages of smoking tobacco. In that case the child withstood for thirty-six hours a foreign body in the trachea and a long ride in a train without having perished, as they sometimes do, of suffocative croup. On the other hand, a little baby was brought to the City Hospital one evening while I was there. It had swallowed a match while playing, and was choking. I extracted from the trachea a burnt match, about the full length of the match. I think that once past the vocal cords substances will stay in the trachea with less immediate danger than in the esophagus. That seems to be my experience.

COIN IN ESOPHAGUS.

DR. A. T. CABOT reported this case. The patient was sent in from the Out-Patient Department of the Massachusetts General Hospital, with the history of having swallowed a quarter (several days previously ?). Fluoroscope showed quarter to be about one inch below cricoid cartilage. (Fig. 4.)

FIG. 4. Coin in esophagus.

Ether was administered and operation performed. Exploration with probang located coin; all attempts to move it with coin catcher, brush probang, alligator forceps and esophageal instruments futile; esophagotomy decided upon; coin was found and removed. Quarter was stained, staining being limited to a strip across centre, as though the edge had been embedded in esophageal wall. Catgut was used in closing wound. The wound entirely healed.

DR. GEORGE H. MONKS reported

A CASE OF ABDOMINAL CARCINOMA IN THE RIGHT HYPOCHONDRIAC REGION.

I intended to show a case upon which I had operated for malignant disease (cancer) of various abdominal organs. The patient got well from the operation and left the hospital; but, unfortunately, a month or six weeks later she had a recurrence of the disease, and she is now very ill — too ill to be brought here to-night.[2]

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[2] The case is reported in full on page 329 of the Journal.

He then showed some photographs illustrating certain anatomical and surgical subjects: umbilical hernia in the male; the raising of the shoulder following loss of the upper extremity, etc.; rupture of the lower tendon of the biceps in an athlete; enormous development of the extensor muscles of the thigh in a jumper; profile of human face showing dissection of muscles (Michael Angelo), etc.

Dr. Warren: The photograph of the jumper reminded me of an acrobat I operated on for appendicitis, after an attack in which I performed the operation after McBurney's method, and I asked him to come back a year afterwards, to see the condition of his scar, knowing his occupation. I examined him and found he was perfectly well, the scar in good condition, no sign of hernia. I asked him what he was doing, and he said he was turning one hundred and twenty-five somersaults a day.

Dr. Goldthwait: I should think the difference in the elevation of the shoulders would probably be explained more by the use of the arm which remained, pulling the shoulder down, rather than by the elevation of the other one. It is a well-known fact that the arm which the person uses freely is usually lower than the other, and in cases of lateral curvature, in straightening up the figure, where it is desired to have the carriage exact, the side that is not used so much has to be developed.

Dr. Agnes Vietor: Another explanation of that occurs to me, Mr. Chairman, and that is that there may be a true elevation of the shoulder due to a lack of opposing muscles. It is very well established that the nervous impulse which governs every action is sent out to two groups of muscles, not only to the group that is to act, but also to its antagonist, so that the result is a balancing of two sets of muscles. If this balance is disturbed by paralysis or removal of one set the result is that the antagonizing muscle, or group, overacts.

(*To be continued.*)

Reports of Societies.

THE NEW YORK ACADEMY OF MEDICINE.

Stated meeting, March 16, 1899, the President, William M. Thomson, M.D., in the chair.

DISCUSSION ON SYPHILIS.

Dr. J. H. Huddleston read for Dr. Frank Hartley, who was prevented from being present, a paper on

SOME OF THE SURGICAL ASPECTS OF SYPHILIS.

The author stated that he would confine his remarks principally to his own experience, rather than attempt a collective article embracing the observations of others. The muscles, tendons, sheathes, joints, bones, and lymphatic glands were all liable to be affected by the disease. Syphilitic gumma resembled simple inflammation, and unless the patient's history was very carefully studied a mistake in diagnosis was often likely to be made. Such mistakes might subject the patient to unnecessary operations and unnecessary dangers. He had known several instances in which competent men had removed syphilitic gummata of the lip, and tongue especially, by mistake, for carcinoma. The tongue was a favorite seat of syphilitic trouble, and it was important to bear in mind the fact that a syphilide here sometimes did result in carcinoma. Gummata of the lip often closely resembled epithelioma.

When the disease attacked the muscles the junction of the muscle with the tendon was usually its seat, and the sternocleidomastoid muscle was more frequently affected than any other. The absence of inflammation and the slow growth of the neoplasm simulated the formation of tumors, and, according to Esmarch, one-half of all the so called tumors of muscles were in reality syphilitic gummata. As a primary lesion, tuberculosis of the muscles and of the tongue was much rarer than syphilis, but as a secondary manifestation the latter was quite frequent in these parts. It was important to diagnosticate between tuberculosis and other forms of growth, but tumors of muscles were at best rare. Angiomata, situated in or below the deep muscles of the neck (a favorite location), perhaps presented the greatest difficulty. Twenty cases of lipoma of the tongue had in all been collected, and congenital cysts of the tongue were of great rarity. Sarcoma in this location was much more common, but fully one-half of the cases sent to Esmarch as sarcoma of the tongue proved to be syphilitic gummata, and were cured by specific treatment.

In the arteries the changes due to syphilis were liable to produce marked thickening of the vessel, with considerable diminution in its calibre. The processes in the arteries of the extremities might result in gangrene, and in the large arteries might lead to aneurism. In the veins circumscribed growths were not seen, but diffuse deposits were comparatively common. The infiltration sometimes formed a distinct mass around the vein, and the lumen of the vessel might become almost obliterated.

Lesions of the lymphatic system occurred in both the hereditary and acquired varieties of syphilis. The author referred to the case of a woman thirty-two years old, suffering from acquired syphilis of considerable standing, who had marked enlargement of the lymphatic glands of the neck and axilla. Under mercurial inunction and the use of potassium iodide, all the growths disappeared except a few in the submaxillary region which had become exceedingly hard and had to be excised. In a man of twenty-eight, with acquired syphilis of six years' standing, similar lymphomata disappeared under antisyphilitic treatment. When ulcerations occurred in these growths they might be mistaken for tuberculosis, but a careful examination would show that the parts did not have the characteristic appearances of tubercular ulcers. In all cases of doubtful diagnosis a blood examination was also called for. In the tonsils, which were to be regarded as part of the lymphatic system, it was often important to discriminate between syphilitic and other growths. He had seen an interesting case of this kind, occurring in the practice of the late Dr. William C. Jarvis. The tonsils, in which there had been prolonged ulceration with fungus granulations, were enlarged and indurated. The condition resisted all local treatment, and two well-known surgeons recommended immediate operation on the ground that the disease was carcinomatous. Then the patient, who had not been suspected of specific trouble, becoming alarmed at the prospect of an operation, confessed that he had formerly had syphilis. Energetic antisyphilitic treatment was at once resorted to, and in less than three weeks the man was cured.

Gummata of the Breast. — To Lancereaux and Langenbeck we were chiefly indebted for our knowledge of this subject. Syphilis of the breast appeared in two forms: (1) simple syphilitic mastitis, and (2) gumma. In the latter the growth varied in extent from the size of a pigeon's egg to that of a goose egg. It might either remain firm or become softened and break down. This variety of mastitis might occur in connection with other phenomena or appear as a single manifestation. It was very rare, and might be mistaken for tuberculosis, which was also a rare condition. Forty-seven cases had thus far been recorded. In one-half of them the neighboring axillary glands were enlarged in the early stages. Dr. Hartley had met with a case in a woman thirty-seven years old, in which the tumor was as large as a hen's egg. The axillary glands were slightly enlarged and the post-cervical glands. If this patient had not presented a syphilitic history, the case might easily have been mistaken for one of cancer. As it was, the true nature of the disease was recognized, and a cure was effected by specific treatment. In connection with this another case was of great interest. A young woman of twenty had a tumor of the breast of the size of a pigeon's egg, and the tissue about it was infiltrated. A diagnosis of probable tuberculosis was made, and the breast and neighboring axillary glands were removed. A year after she returned to the hospital with a similar tumor in the other breast. This breast was also removed, and later she developed pulmonary tuberculosis, so that the diagnosis was made positive.

Syphilitic affections of the joints were no doubt more frequently met with by the surgeon than by the syphilographer. The gummatous infiltration of the synovial membrane or other joint structures had sometimes been mistaken for gonorrheal rheumatism, but with proper care it was not usually difficult to discriminate between the two. In the syphilitic process there was at first serous synovitis and later papillary synovitis. It was to be distinguished from hydrops and also from monoarticular arthritis deformans. In the latter, however, deformity of the joint was usually very marked. The most striking characteristic of the syphilitic trouble was the rapidity with which it yielded to specific treatment. There was another form in which the synovitis was secondary to periostitis or ostitis, and this was most frequently met with in children. The portion relating to the bones had to be omitted on account of the length of the paper.

Dr. C. K. Mills, of Philadelphia, read a paper on

SYPHILITIC DEMENTIA AND PARETIC DEMENTIA, WITH REMARKS ON THE PROGNOSIS AND TREATMENT OF SYPHILIS OF THE NERVOUS SYSTEM.

Three classes of diseased processes were described: (1) simple syphilides due to the specific poison; (2) secondary pathological processes resulting directly from these, and (3) para- and meta-syphilitic affections. In the third class the phenomena were more or less remote. The degenerations observed were the issue of syphilis, but not its first and most direct results. Although proceeding from the syphilitic infection, they were not themselves of a true specific nature. It was only in cases in which these changes had not yet begun that the prognosis could be said to be good. In the syphilitic insanities we met with *first*, cerebral manifestations due to the circulation in the blood of the specific toxins; *second*, true paretic dementia; and *third*, syphilitic pseudo-paresis.

Syphilitic melancholia was frequently seen in both the secondary and tertiary periods of the disease, and was clearly a toxemia. It was characterized by more or less profound mental depression, hallucinations, and marked suicidal tendencies. In syphilitic mania there was mental excitation of varying degree. Instead of either melancholia or mania the patient might present a torpid state, a condition known as stuporous dementia. In all these troubles ophthalmoscopic examination was of the greatest importance. In syphilitic insanities and pseudo-insanities the most prompt and energetic specific treatment was called for. Mercurial inunction, as well as the mixed treatment, was often of the greatest service.

Tabetic disease was often of syphilitic origin, and if the diagnosis of tabes was once made, no hope of absolute cure should be entertained. In syphilitic pseudo-paresis multiple specific lesions, and even widespread vascular disease, were present. It might be of comparatively light or of grave severity according to the time when the patient came under treatment. The ordinary pathological conditions met with were pachymeningitis, leptomeningitis, and arterial stenosis. When the vessels had become closed and the nerve-cells altered, and when the membranes had undergone degenerative changes, there was perhaps little to hope for, but still in many cases much could be done for the patient. A useful comparison could be made between spinal syphilis and syphilitic pseudo-paresis. In the latter disease he had never yet seen a case in which the patient could not be substantially benefited by treatment.

In considering both the prognosis and treatment of syphilis of the nervous system, it was important to distinguish between pure syphilitic disease on the one hand and para- and meta-syphilitic disease on the other. Lesions of the former character were as a rule curable, and the most improvable and curable were those of recent origin. They did not affect the true nerve elements, and cases of subacute development were the most hopeful. There was, he believed, such a thing as true syphilitic pseudo-tabes, but it was very rare. In no department of medicine or surgery was accuracy of diagnosis of more importance than in syphilis of the nervous system, and the properly qualified observer should be able to make both diagnosis and prognosis without resorting to the test of therapeutics. How often did we hear it said that because a given case of tabes failed to yield to antisyphilitic treatment, it was not, therefore, of syphilitic origin.

As to treatment, there could be no question of the efficacy of both mercury and the iodides, either alone or in combination, in all uncomplicated syphilitic disease. In para- and meta-syphilitic lesions neither of these agents was curative. In this class of cases his experience had convinced him that it was advisable to give specific treatment only for periods of about four weeks three times in the course of a year. With appropriate management in other respects the patient might be expected to retain a fair amount of health. No case of true tabes or of general paresis could be or ever had been cured by medicine; but in such affections the most useful results could be obtained from non-specific remedies. As previously intimated, syphilitic pseudo-paresis could be benefited in so far as the specific lesions were of comparatively recent origin.

With regard to all these affections we should try to disabuse our minds of all illusions. Mercury was of value in various inflammations, but it was of little or no value in parasyphilitic disease. On the whole, taking all classes of cases together, a larger proportion was benefited by the iodides than by mercury. He did not advocate the heroic use of potassium iodide, and feared that those who had published brilliant successes with enormous doses of the drug had neglected to report many other cases in which no benefit had resulted. It was unscientific, he thought, to saturate the patient with the iodide. But, while he did not favor heroic doses, he believed that from 30 to 60 grains three times a day was better than the dose of from 10 to 20 grains advised by our brethren across the water, as well as better than the 100 to 500 grain dose.

Dr. B. Sachs read a paper on

SYPHILIS OF THE BRAIN AND SPINAL CORD.

Up to a comparatively short time since, the diagnosis was made by a process of exclusion, and it was often incorrect. As to the frequency of syphilis of the central nervous system, it had been asserted that this occurred in from 15 to 25 out of every thousand cases of syphilitic disease, exclusive of those in which tabes or paresis resulted. The statement was often seen that syphilitic nervous disease was on the increase, but perhaps this was due to the fact, on which neurologists were apt to pride themselves, that our knowledge was greater than formerly. Some years ago he had been taken to task for the statement that the nervous system was more apt to be affected in cases characterized by mild initial disease than in those in which the latter was more severe. Of late, however, many observers had agreed as to the correctness of this view. It was true that many of the cases were improperly treated in the early stages, but still many others were met with which had received appropriate treatment. It was now well known that serious lesions of the nervous system might occur simultaneously with the rash of secondary syphilis.

The pathological characters of syphilitic disease of the nervous system were not unlike those met with in other parts of the body. The formation of gummata was the most common manifestation, and at an early period these growths began to undergo a retrograde process. A solitary gumma was rarely observed. Not only were the capillary blood-vessels concerned in syphilitic lesions, but the larger vessels were also affected. Occlusion of the vessels was liable to result, but this was not always permanent. It was to be regretted, for diagnostic purposes, that the bacillus of syphilis had not as yet been differentiated with sufficient clearness. Among the characteristics of syphilitic disease was the multiplicity of symptoms, with alternate exacerbations and retrogressions. The fact was also to be noted that there was no other disease which so frequently gave rise to paresis rather than paralysis. While there was a vast variety of symptoms, none of them was pathognomonic. The question of localization of the lesion had been much overdone in comparison with the more important matter of its character. The multiplicity of lesions met with need not imply that all the lesions co-existed. An important point in the diagnosis of syphilis of the nervous system was the fact that in this disease symptoms occurred which were not apt to be met with in individuals in adolescence or in middle life.

The most valuable guide at our command, however, he believed to be the condition of the pupils. This he considered of far greater significance than the highly esteemed lesions of the periosteum and the epitrochlear gland. The pupils of the subjects of syphilis presented at least four characteristic peculiarities. These are:

(1) Irregularity in contraction.

(2) Unequal responsiveness, one responding readily to light and the other not.

(3) Immobility; presenting a marked contrast to the Argyll-Robertson pupil commonly met with in ordinary tabes.

(4) Marked departure from the circular form, in cases where there had been no previous iritis.

It had been often said that the history of syphilis was almost always "written on the skin," but if we suspected a person of syphilis on whose skin such history was not too clearly written, we would receive most valuable assistance from a careful study of the pupils. At the present day we should be able to make the diagnosis of syphilitic disease without having to resort to a course of specific treatment. Having referred to chronic headache as a symptom, he spoke particularly of vertigo, which he said was in many cases the only sign of cerebral syphilis. The occurrence of this should therefore always excite suspicion. As an illustration he mentioned the case of a physician who for a considerable time had suffered from repeated attacks of vertigo, without appreciable cause, and who had travelled extensively and consulted many eminent members of the profession without securing relief. The probability that he was suffering from syphilitic brain trouble occurred to Dr. Sachs, and the affection entirely disappeared under antisyphilitic treatment. Apoplexy in syphilitics, if the symptoms were those characteristic of thrombosis, was to be attributed to endarteritis. In cases of double optic neuritis it was well to bear in mind the possibility of the existence of syphilis before giving a positively fatal prognosis.

In speaking of spinal syphilis he referred to some of the anatomical peculiarities of the cord, especially as regards its vascular supply, and said that in disease of the posterior columns it was very important to differentiate between true tabes and syphilitic pseudo-tabes. Here the condition of the pupils would offer valuable assistance, for if the latter affection was present we would have immobility of the pupils in contradistinction to the Argyll-Robertson pupil. He was inclined to the opinion, he said, that specific endarteritis has much to do with the early stages of posterior spinal sclerosis. In all lesions of the nervous system disease of the blood-vessels was the first stage in development. Whether the disease affected the cervical, dorsal or lumbar portion of the cord, the eye symptoms would be the same.

Dr. Charles S. Bull read a paper on

SYPHILIS OF THE EYE.

Beginning with those of the eyelids he described the various syphilitic lesions of the eye and its appendages. In speaking of corneal disease he mentioned four different forms, namely, (1) parenchymatous keratitis, which is always accompanied by iritis; (2) keratitis punctata, in which suppuration never occurs; (3) a later stage of the above, in which cloudiness of the cornea is met with ; (4) gummatous keratitis. All these affections belonged to the later stages of syphilis. For our knowledge of the condition of the cornea in inherited syphilis we were more principally indebted to Jonathan Hutchinson, and the presence of interstitial keratitis in connection with the Hutchinson notched teeth was universally regarded as pathognomonic of hereditary syphilis.

Iritis might be of three varieties, plastic, serous, or gummatous. The only one which was characteristic of syphilis was iritis gummosa. The prognosis was generally good in the serous variety, but was doubtful in the gummatous. With the hope of securing as good a result as possible the most prompt and energetic antisyphilitic treatment was called for. Incidentally Dr. Bull confirmed the opinion of Dr. Sachs in regard to the condition of the pupils affording a valuable indication of the presence of syphilitic disease. He also had observed the irregular pupil, and the irregular, indolent action of the iris, without preceding iritis.

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Recent Literature.

The Ready-Reference Handbook of Diseases of the Skin. By George Thomas Jackson, M.D., Professor of Dermatology, Woman's Medical College of the New York Infirmary and in the Medical Department of the University of Vermont, Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons, New York. New third edition. In one 12mo. volume of 638 pages, with 75 illustrations and a colored plate. Philadelphia and New York : Lea Brothers & Co.

This excellent handbook has reached its third edition in a remarkably short space of time. Many new articles have been rendered necessary by the dermatological advance of the last few years, and six new illustrations have been added. The general plan of the book remains unchanged, the author retaining the alphabetical arrangement of the different diseases — a method best suited to a book of this size.

A Clinical Treatise on Diseases of the Breast. By Marmaduke Shield, M.B. (Cantab.), F.R.C.S., Senior Assistant Surgeon and Lecturer on Practical Surgery to St. George's Hospital, etc., 510 pages, 58 illustrations, 16 plates (full page), 11 colored. London : Macmillan & Co., Limited. New York : The Macmillan Company. 1898.

Mr. Shield has tried to describe in a practical manner pathological conditions of the breast. To write a complete treatise on mammary disease would require several volumes, and realizing that a book to be read by those whose time is much occupied must be kept within convenient limits, he has tried to collect, mostly from his own observation and experience, all that which is of real practical importance. He has quoted from the work of others as far as possible without causing the volume to become bulky or wearisome from statistical detail. His data are from his personal records and extensive experience, from a careful review of the records of the St. George's Hospital, London, during a period of thirty years (1865 to 1895), from the published reports of the various London hospitals, and from a study of the specimens of mammary disease in all the London museums, including that of the Royal College of Surgeons and those of Leeds and Edinburgh. The subjects treated are acute mastitis, abscess, chronic mastitis, affections of the nipple and skin, and tumors. The latter subject, to which is devoted seven of the eleven chapters of the volume, is subdivided into chapters on classification, benign tumors, cysts, sarcoma and cancer. The discussion and description of cancer fill nearly two hundred pages. In this era of operating the remarks on inoperable cases of this affection are of interest. In an appendix of ten pages are described diseases of the male breast The introduction of clinical histories into the text to illustrate especial statements relating to pathology, diagnosis, prognosis or treatment is a feature of the book which attracts attention. Many statistical data of value are thus introduced.

The book is carefully and well written, and of convenient size. It is a work of real interest and profit both to the advanced student and the busy practitioner, and contains much useful practical information without being encyclopedic. The illustrations are very good and well chosen, being also almost entirely original. The reproduction of the microscopic sections are from drawings carefully made from actual specimens. The same is true of the colored plates and illustrations of pathological specimens.

Diseases of the Stomach. A Text-Book for Practitioners and Students. By Max Einhorn, M.D., Instructor in Clinical Medicine at the New York Post-Graduate Medical School and Hospital; Visiting Physician to the German Dispensary. Second revised edition. Pp. 502. New York: William Wood & Co. 1898.

This book contains a very concise and practical outline of the subject of the diseases of stomach.

The author is thoroughly conversant with all the modern special methods of diagnosis and treatment of these disorders. In fact, several of these special methods have originated with him. As a result, the book contains the fullest indications of their application and usefulness, and of the knowledge and assistance which can be gained from their use in each of the special diseases treated.

The author rightly emphasizes the extreme importance of diet, and the very great results which can be obtained by regulation of this factor, and of the hygienic surroundings.

The book is somewhat more brief than the other text-books upon this subject in the English language. In this respect it may recommend itself to those who wish a concise and yet accurate handbook.

Lectures on the Theory and Practice of Vaccination. By Robert Cory, M.A., M.D., F.R.C.P. Pp. 122. London: Baillière, Tindall & Cox. 1898.

This volume contains the substance of the six lectures which Dr. Cory has annually delivered at the University of Cambridge, together with other material which he has published upon the subject of vaccination.

Dr. Cory's well-known position as Superintendent of the Lamb's Conduit Street Station for Animal Vaccination in London, under the direction of the Local Government Board, is a sufficient guaranty of the excellence of the work. Several useful tables, diagrams and colored plates showing the histology of the vesicles of variola and vaccinia embellish the book.

THE BOSTON

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LOCAL MILK INSPECTION IN CITIES AND TOWNS.

During the last twenty years rapid progress has been made in Massachusetts in securing a better milk supply. No one can doubt the great value of this article of food as one of the constituents of the food supply of the people, and especially of that large class which is dependent very largely upon milk, the infant population. Improvement has progressed along different lines. First, laws were enacted which established a standard of pure milk, and their enforcement was entrusted to two central boards, or commissions, the State Board of Health and the Dairy Bureau. Much work has been accomplished under this law in preventing the sale of adulterated milk, when present conditions are compared with those of twenty years ago.

Next there came into existence a series of statutes relating to cattle inspection, largely in consequence of the investigations of foreign observers with reference to the prevalence of disease among dairy cattle. Similar examinations of cattle in the New England States confirmed these foreign observations, and a rigorous work of inspection was begun in Massachusetts, but the misguided zeal of a limited number of dairymen resulted in a cessation of this important work during the past year. Fortunately, His Excellency Governor Wolcott has called attention to this state of affairs in his last annual address, and it is hoped that a better condition may soon prevail.

In the line of voluntary effort various medical societies and other organizations have devoted much time to the consideration of this important subject. The Massachusetts Association of Boards of Health spent much of their time at the meetings of 1898 in discussing the question of improving the milk supply, and finally adopted a series of model regulations for boards of health, having reference chiefly to the subject of the cleanliness of dairies and the sanitary condition of milk stations and all that pertains to the production, transportation and distribution of milk. The result of all this agitation will undoubtedly be beneficial, but the discussion should not cease until these suggestions and propositions are carried into effect.

At an earlier period than any to which we have alluded there were other existing statutes which provided for the appointment of milk inspectors in cities and towns. The law is obligatory so far as cities are concerned, but permissive in the towns; hence, there is a milk inspector, in name at least, in every city in the State. It appears that in some of the cities, such as Boston, Lowell, Cambridge, Lynn, Malden and others, the work of milk inspection has been efficiently conducted, and even some of the towns have appointed inspectors who have done good work in the same direction. But in a large number of the cities the milk inspector is merely a figure-head, who appears to believe that his only duty is to sit in his office and issue licenses to milk pedlars, — a comparatively unimportant duty. The most important function of a milk inspector is to *inspect milk*, and yet it often happens that the official thus appointed has no knowledge of milk analysis whatever. So far as the protection of the community is concerned such officials are of little use. The radical fault lies in the method of appointment, which is placed by the statute in the hands of the mayor and aldermen, instead of the board of health, a distinct sanitary body. As a consequence this official too often becomes a mere political toy, and of little or no use so far as the actual inspection of milk is concerned. Attempts to remedy this serious defect by legislation have been made at different times by the introduction of bills to change the method of appointment, but have signally failed to obtain the necessary action of the Legislature.

Attempts have been made during the present year to give milk inspectors greater power, by granting to them a certain amount of supervision over the sanitary condition of dairies furnishing milk to the cities in which such inspectors are located. Another excellent measure proposed that milk inspectors should be required to pass a civil service examination, by means of which measure officials could be secured who possess the necessary qualifications for performing the duties of the office.

Under the present system the milk inspector in one city is a tobacconist, in another a real estate agent, in another an undertaker, and so on. Now these occupations are not necessarily incompatible with the work of milk inspection, but it may be presumed that a strong law requiring that milk inspectors shall at least be familiar with milk analysis would result in a decided improvement in the supply. And if in addition there should be a hearty support of the work of the Cattle Commission the most timid consumer of milk who fears infection from tuberculous animals would have little reason to complain. That these reforms could be accomplished without difficulty is evident, provided only a strong and intelligent public sentiment be brought to bear on the matter.

RUSSIAN GOVERNMENT MONOPOLY OF THE SALE OF SPIRITUOUS LIQUORS.

Despotism has certain uses in the make-up of things by which the world may be helped to solve some of the knotty problems which must be solved before even approximate perfection is reached. Democracies are conservative in the introduction of changes that affect existing conditions. Any attempt at reform in conduct of prisons or in hygiene, or various social evils, has to be fought step by step, until the majority of the people are educated to the point where they demand the change — then things are advanced, and advanced with a rush. When, however, the proposed move interferes with the profits of any class which are dependent upon the vices of the people, and especially if the loss is to be large, the process of education is then slow indeed, as prejudice, combined with the fear of loss of "individual liberty," is easily aroused by the opposition. Let once, however, the head of a nation, like Russia, get an idea that he can increase his revenues, and at the same time incidentally improve the general condition of his subjects, and the experiment is started.

The Czar Alexander III expressed such a wish, namely, to try the experiment of a government monopoly of the sale of spirituous liquors, and see whether it would not bring increased returns to the Russian Treasury. Few people knew that the experiment was being tried, as the most distant parts of the Empire were selected in which to start the undertaking, and the Government did not see fit to make any report upon the progress of affairs until the last part of 1898, and this only reached our notice a short time ago.

The wish of Alexander III was carried into effect in 1895, and the four provinces selected in which to start the experiment were the most easterly of the Russian domain, lying between the river Volga and the Ural Mountains.

The following year, 1896, the conditions appeared to be so favorable that nine other provinces were added, and in 1897 it was made a law of the Empire acting in the northeast and north, and in the Kingdom of Poland. In the near future the working of the law is to be extended to the Moscow district and the rest of Russia.

As stated above, all reports were kept quiet for three years, in order to give the law an opportunity to become established in districts likely to be next involved in the process, before any special opposition was allowed to develop, and so that time could elapse sufficient to form a fair judgment of what could be accomplished. The reports as issued cover the four provinces in which the law was first promulgated.

The returns to the Government netted fifty-six million roubles, while under the old system the Government would have received for its licenses but thirty-seven million roubles. The total extra expense incurred by the Government to conduct the business was 3,300,000 roubles more than it would have been to have collected the license money — a sum which does not seem excessive. Heads of provinces and large towns, ecclesiastics and other men of prominence in the communities have contributed, practically unanimously, favorable reports as to the working of the experiment upon the general morals of the people. The police records show a smaller number of arrests and fewer disturbances. The better quality of *eau-de-vie* sold, the smaller number of saloons, the uniform price of the liquor and the impossibility of getting credit have all tended to diminish drunkenness and especially the disastrous prolonged sprees. At the same time, there has been a marked increase in the savings of the communities, as noted by the increase in the money deposited in the institutions comparable to our savings banks and, what is important from the Government's point of view, the Government receipts have increased. It is not impossible that within a few years we shall be able to get the best ideas on which to model our own temperance legislation from despotic Russia.

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MEDICAL NOTES.

A Grant for Professor Koch. — The German Reichstag has made, according to *Science*, a grant of 60,000 marks for Prof. Robert Koch's approaching expedition to the tropics to investigate the nature and origin of malaria.

President of the British Association. — The next president of the British Association is to be Sir William Turner, M.D., F.R.S., professor of anatomy in the University of Edinburgh and president of the General Medical Council.

The Worm Turns. — Many of the volunteer soldiers, anxious to return to civil life, have been overwhelming their Congressmen with requests to obtain their discharge and apparently in desperation at the pertinacity of one individual the following letter was addressed to the surgeon-general:

My dear Doctor, — That everlasting nuisance, ——, of the hospital corps, is now anxious to be discharged from the service.

In the name of all that is good and holy, kindly have him discharged, so that he may get home and cease to bother you, me, and you through me.

With best regards,

—— ——

Member of Congress.

Four Centenarians. — Kate Snodgrass died in Milford Centre, O., last week, aged one hundred and three years. Mrs. Ann Hayes Alexander, the oldest person in Saratoga County, N. Y., died recently at West Charlton, N. Y. She was born in Salem, Mass., January 22, 1798. Sophia Gray has recently died at Chatham, Eng., at the age of hundred and five years. Mr. Michael Shea has died in Indianapolis, Ind., at the reputed age of one hundred and nineteen years.

Laboratory Notes from the Leiter United States Army Hospital, Chickamauga, Ga. — During the past summer an excellent opportunity of testing the value of Widal's reaction was afforded by the considerable number of cases of typhoid fever treated in this hospital. Unfortunately, patients seldom reached the institution until the second week of the disease and hence the value of the reaction as an aid in the early diagnosis could not be tested. Dried blood, diluted with water 1–15, was used and in all cases where the agglutination took place very rapidly a further dilution was made in order to eliminate the question of a possible pseudo-reaction. The test was applied on 218 different days in 177 cases. Of these, 146 were clinically diagnosed as typhoid fever, 5 of whom shortly passed from observation. Of these, 134 gave a positive reaction, 3 doubtful, the clumping not being characteristic and second specimens of blood not being obtainable, and in 4 cases the examination was negative. The reaction was not obtained in any cases not typhoid fever. Two interesting cases bearing on the question of immunity were noted, both having had typhoid fever — one fourteen months and the other two years previously. Neither gave the Widal reaction until the eighth day and both ran comparatively low temperature curves of short duration.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, April 5, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 29, scarlet fever 23, measles 163, typhoid fever 5.

Bequest to the Free Hospital for Women.— The hospital has just received $5,000 for the endowment of a bed to the memory of John R. Brewer and Caroline F. Brewer.

NEW YORK.

Heroism of a Nurse. — The trustees of St. Luke's Hospital at their last meeting passed a resolution expressing their appreciation of the heroism displayed by Miss Frances C. Troop, a graduate of St. Luke's Training School for Nurses, in saving the life of her patient at the Windsor Hotel fire. The patient was the invalid daughter of Mr. Leland, the proprietor of the hotel, and she had to be brought down from one of the upper floors.

The Nassau Hospital Association. — On March 30th a meeting of the Nassau Hospital Association was held at New York, at the house of Dr. Oliver Livingston Jones, who is a summer resident of Long Island; and the plans for a new hospital building, to be located at Mineola, were approved. The hospital is for the benefit of the inhabitants of Nassau County, the new county comprising that portion of Queens which was not included in the Greater New York, and it is at present occupying a rented house at West Hempstead. The new building is to cost about $25,000, and will accommodate fifty patients.

Defeat of the Collier Bill. — On March 30th the Collier Bill, prohibiting the Board of Health from selling vaccine lymph and antitoxin, was defeated in the Assembly at Albany by a vote of 17 yeas to 82 nays.

Physicians Forbidden to Testify. — According to the *Medical News*, on March 13th Governor Roosevelt signed an amendment to the civil code which had passed both Houses at Albany. This amendment absolutely prohibits a physician from divulging any information he may have acquired in his professional capacity concerning any patient, either before or after the latter's death. For a long time the insurance law has permitted a physician to testify concerning the physical condition of a policy holder.

The Investigation of Food Adulterations. — A bill has been passed by the Legislature appropriating the sum of $10,000 to be used by the commissioner of agriculture in the investigation of food adulterations.

More Factory Inspectors Needed. — Jacob A. Reis, who has won an enviable reputation by his efforts to improve the condition of the working classes and is regarded as an expert on all questions involving their interests, having been appointed by Governor Roosevelt to investigate certain changes made by one of the trades unions to the effect that the State factory laws were not being properly enforced in New York City, has submitted a report to the governor in which he exonerates the factory inspector from blame, but makes the following findings: (1) That more factory inspectors are urgently needed in the city; (2) that night inspectors are needed to prevent working over hours; (3) that the inspectors could, with advantage, invoke the aid of the Board of Health more frequently than is now the case.

Dr. Nicholson Succeeds Dr. Skene. — The Board of Regents of the Long Island College Hospital have elected Dr. A. L. Nicholson professor of gynecology, to take the place of Dr. Alexander J. C. Skene, who, it is announced, nominated Dr. Nicholson as his successor, who has been one of his assistants. Dr. Skene has found it necessary to resign both the chair of gynecology and the presidency of the college in order to accept the position of surgeon-in-chief of a hospital now being organized for the benefit of self-supporting women, to be known as the Hospital for Bread-winners. To the development and management of this new institution he will now largely devote his energies. It will be located in the Borough of Brooklyn, and work will be begun upon it as soon as $300,000 has been subscribed. George Foster Peabody is president of the Board of Trustees of the hospital, and Dr. C. G. Sprouil, secretary.

An Execution House. — It is announced that the plans for a separate execution house for the use of the whole State, prepared by the State architect, have been placed in the hands of the superintendent of prisons. The proposed building, a stone, fireproof structure, is to be erected outside the walls of Clinton Prison, but sufficiently near to obtain electric light and power from the plant of the prison. It will be divided into two sections, an administration department and the prison proper, the latter to consist of cells for the condemned and the execution chamber.

The Rochester School System Needs Revision. — On March 22d the governor sent a message to the legislature calling attention to the need of immediate legislation to relieve the unsatisfactory conditions existing in the school system of the city of Rochester, which are described in the message as threatening imminent danger to the health of the children and their wholesale destruction in case of fire.

Typhoid Fever in Newark. — Up to March 28th the number of cases of typhoid fever reported in Newark since the disease became prevalent had reached 287. There had been twenty-one deaths, five of which had occurred within the preceding forty-eight hours.

Death of Mr. Valentine Seaman. — A link connecting the medical world of the last century with that of the present day has been severed in the death of Valentine Seaman, father of Dr. Louis Livingston Seaman, who died on March 30th at the venerable age of ninety-six. Mr. Seaman was born on September 30, 1802, in a house on Beekman Street, near what is now Printing House Square, and his father, Dr. Valentine Seaman, was one of the most eminent New York physicians of the day. He is credited with being the first to teach clinical surgery and to introduce vaccination on this side the Atlantic, and it is said that his own children were the first persons vaccinated in America. Dr. L. L. Seaman is the youngest of four surviving sons of Mr. Seaman.

Miscellany.

DISINFECTION IN CUBA.

Circular No. 12, dated Havana, February 20, 1899, embodies the recommendations of a board of medical officers convened for the purpose of devising "some uniform system of disinfection of grounds, buildings and appurtenances of all buildings and sites formerly occupied by Spanish troops before their being assigned to United States troops for habitation."

The recommendations of this board were that walls and ceilings, when painted, should be washed with bichloride solution and repainted; when kalsomined, to be washed thoroughly with milk of lime and rekalsomined. Window-frames, doors and other woodwork are to be carefully examined and any rotten material removed and burned. The sound parts are to be scrubbed with lye and hot water, washed with bichloride solution and repainted. All floors are to be taken up, including joists on lower story, and replaced by tiles or tongued and grooved lumber, all decayed wood to be removed and all joists to be washed with milk of lime and repainted.

If on the ground the earth should be removed for a depth of about twelve inches and the space filled with concrete and paved with tiles, cement, or asphalt. The new floor is to be above the ground level. Tile or cement floors, if in good condition, are to be thoroughly scrubbed with soap, lye and hot water and washed with bichloride solution. Earth floors are to be excavated one foot, filled with concrete, and paved with tiles, cement or asphalt.

Additional doors and windows are to be cut wherever necessary.

Cesspools, if external, and their use be necessary, are to be emptied with the odorless excavator, thoroughly cleaned, have their walls cemented and be thoroughly sprayed with milk of lime. Such as are to be abandoned, if full, are to be emptied, filled with earth and paved over with cement or asphalt. If the contents are more than four feet from the surface and are sufficiently solid, they may remain, provided they are covered with a layer of lime six inches in depth, filled with dry earth and paved with cement and asphalt. Internal cesspools are to be emptied, sprayed with milk of lime, filled and sealed in the above manner.

All weeds, high grass, dead vegetation, thick shrubbery or banana plants are to be removed and burned. All marshy spots are to be thoroughly drained and the surface of the ground thoroughly policed. No flower or vegetable beds are to be permitted near the barracks. All wooden outhouses, palm huts, etc., are to be burned. Cisterns are to be pumped out, cleaned by scrubbing and cemented where necessary. All articles of furniture are to be destroyed or submitted to steam disinfection. It was recommended by the chief surgeon, in an endorsement in this report, that no building be occupied by troops until the above plan of disinfection had been thoroughly carried out.

A MEMORIAL TO DR. JOSEPH O'DWYER.

A committee of over forty physicians, representing sixteen different medical societies of the City of New York, has been formed for the purpose of doing honor to the memory of Dr. Joseph O'Dwyer.

The first meeting was held at the New York Academy of Medicine, November 22, 1898, under the chairmanship of Dr. J. D. Bryant, and was mainly devoted to organization. Dr. George F. Shrady was elected permanent chairman, and Dr. Alfred Meyer, permanent secretary, and the following Committee on Scope and Plan was appointed: Dr. Dillon Brown, Chairman, and Drs. Robert Abbe, R. G. Freeman, L. Emmet Holt and Louis Fischer. At the second meeting, held at the Academy of Medicine, March 13, 1899, the report of the Committee on Scope and Plan was adopted and now only awaits final action of a meeting of the full committee.

The memorial to Dr. O'Dwyer will probably take an educational form, for by the plan now outlined it is proposed to raise a fund of $30,000, the interest of which shall support two O'Dwyer Fellowships in pediatrics, open to competition by physicians who graduate in the United States and to be held by the successful competitors for a period of two years. During this period they must furnish satisfactory proof of their engagement in original research work to a committee of five, one of whom shall be appointed by the President of Harvard University, one by the Dean of the Johns Hopkins Medical School, one by the Provost of the University of Pennsylvania, one by the President of the University of Chicago, and one by the President of the New York Academy of Medicine.

Many details of this general plan are still to be arranged, which it shall be the agreeable duty of the secretary to furnish to the medical press of the country so soon as they are finally decided. This preliminary notice has for its object merely to acquaint the profession with the fact that a movement of this nature is on foot, and that an effort will be made to give it the international character so fitting as a memorial to an investigator of international reputation.

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SUIT AGAINST A SURGEON.

A case of much interest to surgeons is related in the *Philadelphia Medical Journal.* It came up in the Montreal courts, lately, before Justice Mathieu. A free patient, unmarried, was admitted to one of the city hospitals, suffering from some rather obscure tubo-ovarian symptoms. It was at first only thought necessary to do a minor operation and to this the patient gave her consent. When the abdomen was opened there was found to be suppuration in a fallopian tube, with local abscess, presumably of gonorrheal origin. A number of surgeons were present and it was unanimously agreed that the tubes and ovaries should be removed. This was accordingly done, with a view to saving the life of the patient. Subsequently the patient brought suit, not against the operating surgeon, but against the consultant, on the ground that her tubes and ovaries had been removed without her consent, thus depriving her of the "joys of maternity," etc. A number of eminent gynecologists were called for the defence, and all agreed that the surgeons had acted properly in performing the operation they did, one, indeed, stating that it would have been criminal to have left in tubes and ovaries in such a condition. No medical evidence being produced for the prosecution, the judge gave judgment for the defendant without leaving the bench, holding the view that the operating surgeon was within his rights, and acting from the point of view of humanity in performing an operation that was calculated to save life, even if it meant the removal of portions for which the patient had not given her permission.

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Correspondence.

MURPHY'S NITROGEN INJECTIONS IN PHTHISIS.

South Boston, Mass., March 27, 1899.

Dear Sir: — Dr. Farnham's letter upon "Sensationalism in Medicine and Murphy's Treatment of Injecting Nitrogen" appears to me somewhat illogical. I think he cannot have read Dr. Murphy's able paper on The Surgery of the Lung. Had he done so he should not express surprise that "the case he" (Dr. Farnham) "had under observation several weeks shows practically no absorption" (of the gas). Non-absorption is the object of the injection — to stop motion in the lung.

Further, he would have found "the danger unknown, of how long the compressed lung is to remain unavailable" — not a danger in itself, as the paper refers to West's cases of six to eighteen months' compression, which were followed by immediate restoration of the lung to full size after removing the fluid. I doubt if it be logical — it certainly is unfair — to stamp a new method of treatment "counterfeit" without a fair trial of it, and to advocate "fighting it at the very start" as Dr. Farnham does in his letter. I may be wrong, but I believe the right attitude for the practitioner of medicine is to weigh the value of new methods by their results, and not by preconceived notions, sometimes very crude.

The following paragraph quoted from Dr. Farnham's letter is to me unintelligible, and I regret the haste with which the doctor confesses he wrote, because of the consequent obscurity of thought:

"Another danger — let each read between the lines here and make what comments he individually chooses: I have received by this morning's (March 3, 1899) mail the advertisement by a commercial firm of an improved gas-injecting apparatus with Dr. Murphy's signed endorsement. This endorsement is dated August 22, 1898. This leads me to ask this question: Has the medical profession reached the point of endorsing wholesale experiments by everybody, upon human beings, of dangerous methods of treatment?"

"Reading between the lines" is apt to be fanciful; it is no kind of argument. The English language is generally found adequate for the expression of thought. Let the doctor express in words what he means.

The injecting machine endorsed by Dr. Murphy is admirably adapted for the purpose intended. It is beyond my comprehension why such an endorsement should lead Dr. Farnham to ask "Has the medical profession reached the point of endorsing wholesale experiments by everybody, upon human beings, of dangerous methods of treatment?"

In conclusion it is regretted that Dr. Farnham closed his letter with the citation "Up, guards, and at 'em." That savors too much of the profession which conquers by killing; it seems hardly applicable to fellows of the noble art of healing.

Respectfully,
Edward A. Tracy, M.D.

METEOROLOGICAL RECORD

For the week ending March 25th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...19	29.66	31	35	27	95	95	95	N E.	N.	7	6	R.	R.	1.26
M..20	29.68	28	34	22	50	53	52	W.	W.	20	30	C.	C.	.02
T...21	30.38	24	32	17	47	51	49	W.	W.	12	9	C.	F.	
W..22	30.24	31	35	27	89	98	94	S.E.	N.E.	14	12	N.	R.	.41
T...23	29.79	34	36	31	94	100	97	N.E.	N.W.	22	16	O.	N.	.89
F...24	29.88	34	40	29	65	50	58	N.W.	W.	10	15	C.	C.	
S...25	29.88	30	38	23	49	44	46	W.	W.	14	8	C.	O.	
☞	29.93	30	36	25	70	70	70			14	14			.37

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, March 25, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup	Cerebro spinal men.	Scarlet fever.
New York . .	3,438,899	1289	420	8.64	14.24	2.32	1.04	1.68
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	212	63	8.93	15.04	1.88	2.35	.94
Baltimore . .	506,389	207	55	5.28	11.04	2.88	1 44	—
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	—	—	—	—	—	—	—
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	—	—	—	—	—	—	—
Nashville . .	87,754	46	10	6.34	25.36	—	6.34	—
Charleston . .	65,165	26	6	3.85	15.40	—	3.85	—
Worcester . .	108,240	41	12	4.88	39.04	—	—	—
Fall River . .	95,919	31	14	3.23	16.15	—	—	—
Cambridge . .	89,724	21	5	4.76	23.80	—	—	—
Lowell . . .	88,641	40	19	7.50	32.50	5.00	—	—
Lynn	66,703	17	2	—	11.76	—	—	—
New Bedford .	66,340	21	12	4.76	28.56	—	—	—
Somerville . .	61,101	13	4	7.69	15.38	—	7.69	—
Lawrence . .	57,263	31	19	6.46	6.46	—	3.23	—
Springfield . .	56,501	19	4	5.26	21.04	—	—	—
Holyoke . . .	43,424	15	5	13.33	26.66	—	6.66	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem	36,883	15	6	13.33	6.66	—	—	—
Malden . . .	34,613	10	1	10.00	—	—	—	—
Chelsea . . .	33,468	11	2	18.18	—	—	—	—
Haverhill . .	32,022	18	3	—	22.22	—	—	—
Gloucester . .	30,589	12	2	8.33	—	—	—	—
Newton . . .	29,716	11	3	9.09	27.27	—	—	—
Fitchburg . .	29,438	11	2	18.18	9.09	—	9.09	—
Taunton . . .	28,167	9	2	11.11	22.22	—	—	—
Everett . . .	25,338	7	2	14.28	—	14.28	—	—
Quincy . . .	23,549	13	3	6.79	6.79	6.79	—	—
Pittsfield . .	22,643	4	—	—	25 00	—	—	—
Waltham . .	21,812	9	2	—	22.22	—	—	—
North Adams .	20,971	2	—	—	—	—	—	—
Chicopee . .	17,842	5	3	—	20.00	—	—	—
Medford . . .	16,511	3	1	—	—	—	—	—
Newburyport .	14,915	4	2	—	25.00	—	—	—
Melrose . . .	14,032	3	—	—	—	—	—	—

Deaths reported 2,401; under five years of age 749; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 187, acute lung diseases 383, consumption 292, diphtheria and croup 45, cerebro-spinal meningitis 40, scarlet fever 25, diarrheal diseases 23, whooping-cough 16, typhoid fever 14, measles 14.

From whooping-cough New York 9, Boston 2, Cambridge, Lawrence, Holyoke, Chelsea and Newton 1 each. From typhoid fever New York 3, Washington 2, Boston, Baltimore, Chelsea and Gloucester 1 each. From measles New York 11, Boston 2, Lowell 1. From diarrheal diseases New York 14, Washington 3, Fall River, Springfield, Salem, Malden and Taunton 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending March 18th, the death-rate was 23.3. Deaths reported 5,099; acute diseases of the respiratory organs (London) 565, whooping-cough 136, measles 103, diphtheria 88, fever 37, diarrhea 32, scarlet fever 21.

The death-rates ranged from 12.7 in Derby to 31.9 in Manchester; Birmingham 20.9, Bradford 20.1, Bristol 17.7, Cardiff 16.8, Gateshead 18.6, Hull 16.5, Leeds 23.6, Liverpool 28.8, London 24.1, Nottingham 21.6, Portsmouth 16.4, Sheffield 24.8, Sunderland 20.4.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, April 10, 1899, at 8 o'clock.

Papers: Dr. M. H. Richardson, "Two Cases of Perforating Ulcer of the Stomach."

Drs. Robert B. Greenough and Elliott P. Joslin, "A Report of 187 Cases of Gastric Ulcer treated at the Massachusetts General Hospital from 1888 to 1898."

Dr. Stephen Wm. Driver will read a paper entitled "The Ethics of Reproduction."

Arthur K. Stone, M.D., *Secretary*, 657 Boylston St.

The American Gastro-Enterological Association. — The second annual meeting of the Association will be held at "The Shoreham," Washington, D. C., Tuesday, May 2, 1899.

Charles D. Aaron, M.D., *Secretary.*

American Climatological Association. — The sixteenth annual meeting of the Association will be held in the Hall of the Academy of Medicine, No. 17 West Forty-third St., New York City, on May 9, 10 and 11, 1899. The sessions each day will be from 10.30 a.m. until 1.30 p. m., and from 3 until 6 p. m.

A smoker, at Delmonico's, N. E. corner of Forty-fourth Street and Fifth Avenue, will be tendered to the Association on the evening of the first day, and the annual dinner will take place on the evening of the second day.

A trip to the Loomis Sanitarium at Liberty, N. Y., will be arranged for the third day of the meeting, May 11th. A special train of the New York, Ontario and Western Railroad will be provided by the courtesy of the railroad.

Opening address, May 9, 1899, at 10.30 a. m., by the President, Dr. Beverley Robinson, of New York.

Papers.— "Treatment of Consumption by Air and Light in Colorado," by Dr. Charles Fox Gardiner, Colorado Springs; "Intermediate Altitude for the Consumptive," by Dr. B. P. Anderson, Colorado Springs; "The Contagiousness of Phthisis Pulmonalis," by Dr. E. L. Shurly, Detroit; "Subsequent Histories of Arrested Cases of Phthisis treated at the Sharon Sanatorium," by Dr. Vincent Y. Bowditch, Boston; "Röntgen Ray Examinations in Incipient Pulmonary Tuberculosis," by Dr. Francis H. Williams, Boston; "Climate in Relation to Renal Disease," by Dr. J. B. Walker, Philadelphia; "Climate as it Affects the Skin and its Diseases," by Dr. L. D. Bulkley, New York; "Hygienics of the Skin," by Dr. L. D. Judd, Philadelphia; "Hydrotherapy in the Treatment of Insomnia," by Dr. Irwin H. Hance, Lakewood; "Altitude and Heart Disease, with Report of Cases," by Dr. R. H. Babcock, Chicago; "Prognosis in Chronic Valvular Affections of the Heart," by N. S. Davis, Jr., Chicago; "Esophageal Suction as a Cause of Simulated Heart Murmur," by Dr. Roland G. Curtin, Philadelphia; "Treatment of the Cardiac Asthenia of Pneumonia," by Dr. H. L. Elsner, Syracuse; "Remarks based on a Further Experiment with Calomel in Diphtheria," by Dr. L. D. Judd, Philadelphia; "Embolism," by Dr. William M. Gibson, Utica; "Empyema from a Surgical Standpoint," by Dr. John C. Munro, Boston; "Traumatic Rupture of the Heart, without Penetration of the Chest Wall, with a Case," by Dr. Richard C. Newton, Montclair; "Bicycling in its Relation to Heart Disease," by Dr. A. C. Getchell, Worcester, Mass.; "The Relation of Local Meteorologic Conditions to the Influenza Epidemic in Philadelphia in the Winter of 1898–99," by Dr. H. S. Anders, Philadelphia.

Other papers are promised by Drs. S. W. Battle, C. F. McGahan, J. Edwin Stubbert, J. C. Wilson and Harold Williams.

APPOINTMENTS.

George H. Washburn, M.D., and **George W. Kaan, M.D.**, have been appointed assistant visiting surgeons at the Free Hospital for Women.

RECENT DEATHS.

David Patrick Ronayne, M.D., M.M.S.S., of Boston, died in Colorado Springs, April 1, 1899, aged thirty-three years.

Wallace McMillan, M.D., M.M.S.S., of Dorchester, died March 31, 1899, aged thirty-one years.

Major J. Evans, professor of pathology in the Calcutta Medical College, died on March 13th, of the plague.

BOOKS AND PAMPHLETS RECEIVED.

The Diseases and Primary Tumors of the Thymus Gland. By H. D. Rolleston, M.A., M.D., Cantab., F.R.C.P.

Report of the Sewage Commission to the General Assembly of the State of Connecticut, January Session of 1899.

Transactions of the American Ophthalmological Society, Thirty-fourth Annual Meeting, New London, Conn., 1898.

A Method of Preparing Test Objects for Disinfection Experiments. By Hibbert Winslow Hill, M.D., Boston. Reprint.

Report of the Trustees of the Rhode Island Hospital, Presented to the Corporation at its Thirty-fifth Annual Meeting, November 9, 1898.

Results of Further Experience in the Use of the Suggestion under Slight Hypnosis. By Russell Sturgis, M.D., Boston, Mass. Reprint. 1899.

Diseases of the Eye: A Hand-book of Ophthalmic Practice for Students and Practitioners. By G. E. de Schweinitz, A.M., M.D, Professor of Ophthalmology in the Jefferson Medical College; Professor of Diseases of the Eye in the Philadelphia Polyclinic; Ophthalmic Surgeon to the Philadelphia Hospital; Ophthalmologist to the Orthopedic Hospital and Infirmary for Nervous Diseases. Third edition, thoroughly revised. Philadelphia: W. B. Saunders. 1899.

Original Articles.

TRAUMATIC CEREBRAL EDEMA: ITS PATHOLOGY AND SURGICAL TREATMENT — A CRITICAL STUDY.[1]

BY J. W. COURTNEY, M.D., BOSTON,

Assistant in Nervous Diseases, Boston City Hospital; Visiting Physician to the Home for Incurables, Dorchester.

In the very earliest writings on cranial surgery we find mention of edema among the pathological sequences of cerebral traumatisms. Chipault[2] in his recent work on the surgery of the nervous system mentions a case which occurs in a work of Berenger de Carpi[3] in which a penetrating wound of the brain was followed by an abundant aqueous discharge for more than fifty days, and in which the epileptic crises and general agitation of the limbs that followed were attributed to the drying up of this humidity under treatment. In the early sixties of the present century, in an article on head injuries marked by exceptional keenness of both clinical and pathological insight, Hewitt[4] calls especial attention to this condition in the following words: "Intimately connected with traumatic intracranial inflammation there is yet one point which has not been sufficiently dwelt upon by most writers on injuries of the head. I allude to the large quantities of serous fluid which are sometimes effused into the ventricles after injuries of this kind." He then refers to a case cited by Abercrombie[5] and to one under his personal observation. The former was that of a man who fell in the street and was picked up unconscious, with some arterial bleeding from a scalp wound in the upper and back part of the head. On partially recovering consciousness he was so violent as to require restraint. Seven days later there was hiccough followed by coma, the pupils were equal and stertor was absent. Trephining was done after consultation, but no effusion was found between dura and bone. The patient died in the afternoon of the same day, and at the autopsy some serous matter was found between the pia and arachnoid, especially at the base, and the ventricles were full of fluid. The brain was watery and soft throughout. Hewitt's own case was one in which the patient was freely bled for supposed intracranial inflammation after concussion. A few hours after the last bleeding he suddenly became perfectly comatose and died some nine hours later. "Not a vestige of pus or lymph was found within the skull, but large quantities of water had been effused into the ventricles and some water was also found in the subarachnoid tissues; the other organs were healthy."

The importance of these observations will be apparent at a later period. The inflammatory origin ascribed to the edema by Hewitt is obviously erroneous.

Since Hewitt's time the existence of serous fluid in the skull after head injury has been the subject of much attention from time to time, and its presence ascribed to many different causes. In our own day it has again come into prominence through the writings of Bullard[6] and Walton.[7] An extensive perusal of the literature, together with careful examination of the records of nearly four hundred cases of head injuries treated at the Boston City Hospital, has convinced the writer of the desirability of attempting to establish not only the exact genesis of this excess of serous fluid but also its rôle in the production of so-called pressure symptoms and its surgical indications.

From time immemorial the diffuse transmission of a traumatizing force applied to a given point in the cranial wall has been recognized by writers on head injuries and the resultant pathological changes in the cranial contents noted. Owing to an inexact knowledge not only of cerebral pathology but also of cerebral physiology these resultant pathological changes have been so variously interpreted that chaotic confusion has existed as to their exact nature and significance down to the present day, and their nomenclature has, in consequence, undergone the same vicissitudes. A study of fifty autopsies has satisfied the writer that the pathological classification and terminology adopted by Phelps[8] after very careful macroscopic and microscopic examination of the findings in two hundred and twenty-five cases of traumatic intracranial lesions is eminently logical and trustworthy, and so much of it as is necessary for the purposes of the present work will be incorporated by kind permission of this author.

Only those lesions which Phelps terms *direct* will be considered. These include hemorrhages, thromboses of sinuses,[9] contusions, lacerations.

Hemorrhages. — (*a*) Epidural hemorrhage may derive its origin from the diploic vessels, from the various sinuses or from the middle meningeal artery. In extensive injuries all these sources may be simultaneously contributive; (*b*) pial hemorrhage is occasioned by rupture of the vessels of the pia mater and is primarily confined to its meshes. It is one of the results of intracranial contusion and is independent of epidural extravasation. In its simplest form it consists of punctate extravasations analagous to those which occur in the brain substance. It more characteristically forms a thin sheet over the vertex; if it is in larger quantity it breaks into the arachnoid cavity, or, less probably, dissects the pia mater from the cerebral surface. It may be universal or it may occur in patches, and the quantity of blood effused is never so great as it may be in epidural hemorrhage. Its clinical importance is mainly due to its association with other lesions, and yet it may be sufficient *per se* to destroy or endanger life; (*c*) cortical hemorrhage is the direct result of a wound of the brain substance, which may be superficial, or may be subcortical with an access of blood to the surface by rupture of the intervening tissue. It varies very markedly in its extent and may be limited to a trivial oozing, or may attain an enormous size, breaking through the pia mater into the arachnoid cavity, spreading over the entire vertex, and filling the basic fossæ.

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[1] An essay to which was awarded the William H. Thorndike Prize (Harvard) for 1898

[2] Chipault, A : Travaux de Neurologie Chirurgicale, Paris, 1896, p. 8.

[3] Tractatus de Fractura Calve sive Cranei a Carpo Editus, 1518.

[4] Hewitt, Prescott : Holmes's System of Surgery, vol. ii, pp. 298–321.

[5] Diseases of the Brain, pp. 151–152.

[6] Bullard, William N : A Consideration of some of the Indications for Operation in Head Injuries, Medical and Surgical Reports, Boston City Hospital, 1895, pp. 60-66. Also, Increase of Intradural Pressure in Head Injuries, Boston Medical and Surgical Journal, March 24, 1898, pp. 271-273.

[7] Walton, G. L., and Brooks, W. A., Jr.: Observations on Brain Surgery Suggested by a Case of Multiple Cerebral Hemorrhage, Boston Medical and Surgical Journal, April 1, 1897, pp. 301–305. Further, G. L. Walton : Subarachnoid Serous Exudation Productive of Pressure Symptoms, after Head Injuries, Abstract in Transactions American Neurological Association for 1897, p. 23.

[8] Phelps, Charles : Traumatic Injuries of the Brain and its Membranes, New York, 1897.

[9] These sinus thromboses cannot be assigned a definite position in the etiology of clinical symptoms and will be given no further consideration in this paper.

Hemorrhage is rarely uncomplicated. When primary it is usually associated with some degree of general or local contusion.

Contusions. — Intracranial contusion may be cerebral or meningeal, and in either structure may be limited or diffuse. (*a*) General contusion is found in some degree in nearly all cases of intracranial injury and may affect the entire organ or be confined to the cerebrum. It is infrequent as an absolutely isolated lesion, of rather more common occurrence as an essential change, and almost constant in connection with a considerable hemorrhage or laceration. By reason of its diffused character and its co-existence with more macroscopic alterations of structure it must frequently escape observation. (This possibility was strongly insisted upon by Hewitt,[10] who says: "One point must be borne in mind in connection with these traumatic extravasations both in the medulla and in the pons. The surfaces of these structures may be perfectly healthy, and yet well-marked spots of extravasation may exist deep in the substance, and that, too, even when there has been no bruising of any other part of the cerebral mass. Contusions such as these may then, it is evident, easily escape notice, unless very carefully sought for. In the cerebellum bruising and laceration occur more frequently than in the structures which have just been examined, and in this organ these injuries are, for the most part, to be found at its under surface." [11])

The visible anatomical changes are: a distention of the parenchymatous vessels, a general formation of minute thrombi, the presence of punctate extravasations and a more or less distinct edema. The punctate extravasations which are characteristic of limited contusions are rarely seen in this general form of the same lesion, and then perhaps only singly and at widely different points. If the hemorrhages are larger, even of the size of a buckshot, they are not the result of contusion, but of laceration. The minute thrombi are the most characteristic, since they are almost if not quite unknown after death from idiopathic disorders in which hyperemia has been excessive. The edema, which is variable in amount, sometimes appreciable only after some delay and a close inspection upon section, and at other times so profuse that the fluid can be squeezed from the brain as from a sponge, is notably frequent.[12] All these abnormal conditions — the extravasations, thrombi and edema — are simply measures of the general hyperemia which immediately preceded death; (*b*) limited contusion, as has been stated, may be found in any portion of the brain. It may be said to differ from laceration as a contusion elsewhere differs from a wound. It is a bruising of the tissues, with minute hemorrhages, which are characteristically in punctate form and are thickly scattered among the cells and capillary vessels. This is the most infrequent form of cranial injury. and without complication is almost exceptional. It indicates the direct transmission of a certain degree of force, in place of its entire diffusion; (*c*) contusion of the meninges may be largely or universally diffused, or may be limited to areas not larger than the localized injuries of the cortex. The conditions present are hyperemia, edema and hemorrhages. The punctate extravasations are more numerous and more frequently observed, and profuse hemorrhages, which are unknown in the diffused cerebral lesion, are of common occurrence in patches, in thin sheets spread over the vertex, or in quantity sufficient to break into and fill the arachnoid cavity. In place of hemorrhage a subarachnoid serous effusion is sometimes encountered, as a result of the hyperemia which follows meningeal contusion. It is not of frequent occurrence and may readily be mistaken for an inflammatory process. It is a perfectly clear fluid, confined to limited areas, and is not accompanied by arachnoid opacity. It may cover a single lobe, or a space not more than one or two inches in diameter, and, like other evidences of contusion, these traumatisms may be single or multiple.

Laceration of the brain is the final expression of limited force in its greatest intensity. It may be scarcely larger than a limited contusion, or it may occupy an entire lobe or even the greater part of a hemisphere. It is not always possible to determine the extent of the original wound, since so many and so considerable vessels are likely to be ruptured, and the consequent hemorrhage to be so profuse that the brain substance may be broken down to a great distance and in every direction. The enormous subcortical lacerations may break through the cortex, and the extravasated blood spread over the whole surface of the brain; or they may remain confined to the parenchyma in which they originated, enclosed only in a mere shell of the cortical substance. In other cases they are scarcely larger or more important than the most inconsiderable limited contusion, from which they are distinguishable only by the relatively greater amount of hemorrhage which they involve. (The classical situation of lacerations in the under surface of the frontal and in the tips of the temporal lobes has been noted for many years, but no portion of the brain is exempt from this result of violence. Like limited contusions, lacerations almost always occur at points directly opposite that at which force has been applied; the explanations thus far offered in interpretation of this phenomenon are far from satisfactory.)

From the above comprehensive survey of the organic results of the whole expenditure of force derived from external violence upon the cranial contents we have learned that in practically every case we have to deal, to a certain extent, with that pathological complex designated contusion, of which edema is a constant attribute. We have learned, moreover, that contusion of the brain substance occurs most commonly as a diffuse condition, but that limited contusion may occur as an isolated lesion, although with signal infrequency. Contusions of the meninges, on the other hand, we have found to occur in areas not larger than the localized injuries of the cortex, or in areas largely or universally diffused. The inference to be drawn from this is that edema may infrequently be local, but is most commonly general.

The next question which arises is: What is the nature of the pathic change which produces the edema? That it is not inflammatory in the sense of being the product of pathogenic organisms is clearly evident from the pathologic picture already given of contusion. The key to the situation must lie in a special vasomotor mechanism for the cerebral vessels. Now, if we accept the ultimata of Hill and Bayliss,[13]— first, that no evidence has been found of the existence of cerebral vasomotor nerves, either by means of stimulation of the vasomotor centre, or central end of the spinal cord after division of the cord in the upper dorsal region, or by stimulation of the stellate ganglia, and, that is to say, the whole sympathetic supply to the carotid and vertebral arteries; second, that evidence is not forthcoming of the existence of any local vasomotor mechanism, and, third, that the cerebral circulation in normal conditions passively follows the changes in the general arterial and venous pressures, — the problem would present exceptional difficulties. Fortunately Obersteiner,[14] by means of the gold-and-sodium-chloride stain, has been able to demonstrate the presence of vasomotor nerves in even the finer vessels, and thus overthrow the results of experimental research. The accompanying drawing shows a pial vessel with its nerves. Every physiologist who has approached the subject of cerebral circulation has conceded the need of special vasomotor nerves for the brain arteries, and Foster[15] emphasizes the difficulty in not connecting the results of functional activity with some special vasomotor nervous apparatus "comparable to that so obvious in the case of a secreting gland." Even Hill[16] admits that there is undoubtedly muscular tissue in the vessels of the pia, and Obersteiner,[17] pointing out the presence of a fully developed muscular media in intracranial vessels even down to their finest subdivisions (Uebergangsgefässen), regards it as sufficient evidence in itself of their innate power of independent active contraction and dilatation. He lays great stress, however, — and this seems to the writer an extremely important point, — on the ease with which cerebral vasomotor nerves become paresed and lose their power to respond at a time when those of other organs respond readily. It is interesting to note here that even since this paper was submitted in competition (June, 1898) the claims of Obersteiner have found abundant confirmation in the researches of Gulland[18] and of Morison.[19]

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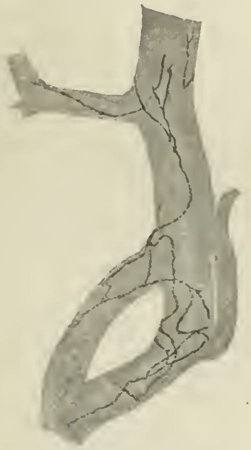
[10] Holmes's System of Surgery, vol. ii, pp. 297-321.

[11] The necessity for the precaution herein given will be admitted by every one who has witnessed the examination of the cranial contents in many necropsies or who has examined records of such necropsies; its importance will be demonstrated later.

[12] The acute distention of the ventricles by this edematous fluid has already been mentioned.



Small artery of the pia mater with its vasomotor nerves. Gold stain (after Obersteiner).

With this definite knowledge of the existence of a special vasomotor apparatus for the cerebral vessels at command the question as to the genesis of edema becomes easier. We know that the splanchnics govern a very large vascular district — that of the digestive viscera — and that interference with their function, whether brought about by a blow or otherwise, causes paralysis of the intestinal vessels, which dilate, and accommodate a large quantity of blood. The result of this on the general circulation is so disastrous that life is frequently threatened from acute anemia.[20] Extending the analogy in part, it is perfectly easy to conceive the effect of blows transmitted to similar nerves in the cranium, especially to nerves so easily paresed as Obersteiner claims the cerebral vasomotors to be, and we would naturally look for a paralytic dilatation (hyperemia) of the vessels governed by these nerves with its concomitant *acute anemia* of the brain substance.

That this is exactly what does happen we have, the writer thinks, abundant proof in the results produced experimentally by ligation of cerebral arteries in animals, for in these we observe symptoms absolutely analogous — so far as we have a right to demand of analogy in such experimentation — to those observed in cases of head injury which recover in a short time; in other words, cases in which paralytic dilatation of the cerebral vessels with its resultant brain anemia is temporary. It now remains to examine into what may be expected to happen if the paralytic dilatation is permanent. Before doing this, however, there are certain general facts concerning cerebral physiology and pathology which it is necessary to bring forward.

The brain can by no means be regarded as a bag of fluid enclosed in a rigid box. It is a viscous, inert mass of the consistency not of a bag of water but rather of a lump of putty. The blood-vessels of the brain, however, form an expressible sponge-work, lying chiefly on the outside of the brain mass. The brain, furthermore, does not transmit pressure equally in all directions; there is a large amount of pressure discontinuity in regard to foreign bodies between the cerebral and cerebellar chambers. A far smaller foreign body kills in the bulbar region and in the cerebellar chamber than in the cerebral chamber.

Now as to the cerebro-spinal fluid. Under normal circumstances physiologists have never been able to collect more than a few cubic centimetres from animals at any one time. On trephining over the cerebrum in dogs often not a drop of fluid is to be seen between the dura and the brain, in others only a slight moisture.[21] Cotugno found, after twenty experimentations made on the human body, that about five ounces of cerebro-spinal fluid could be obtained. Hill, however, considers that this amount is much higher than is normally present in the living subject. The importance of determining this fact lies in the necessary deduction to be drawn from it — that the brain substance must *per se* almost fill the cranial cavity, and that any room which can be made for it by the expulsion of cerebro-spinal fluid must be extremely slight. It has further been demonstrated that the cerebro-spinal fluid is normally maintained at the tension of the cerebral veins, and that any attempt on its part to take up a higher tension is promptly checked by absorption taking place through these veins. This fact at once excludes the cerebro-spinal fluid from taking any part in the transmission of a pathological increase of cerebral tension. It is a fact, moreover, which holds good in all physiological conditions, not only for cerebro-spinal fluid but for all fluids of similar density, notably serum. The rapid escape of fluid injections from the cranial cavity has been noted by Adamkiewicz, Naunyn, Schreiber and Falkenheim; and Duret has recorded the escape of over nineteen ounces of water in two hours, the pathway of escape being through the cerebral sinuses.[22]

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[13] Hill and Bayliss on Intracranial Pressure and the Cerebral Circulation, Journal of Physiology, London, 1895, xviii, p. 324, and Hill, Leonard: The Physiology and Pathology of the Cerebral Circulation, London, 1897, p. 76.

[14] Obersteiner, Prof. H.: Die Innervation der Gehirngefässe, Jahrbüch für Psychiatrie u. Neurologie, Band xvi, Heft 1. u. 2, 1897, p. 215 et seq.

[15] Foster, M.: A Text-book of Physiology, 1890, Part III, p. 1138.

[16] Loc. cit.: Note 13, second reference, p. 75 et seq.

[17] Loc. cit.: Note 14.

[18] Gulland, G. L.: British Medical Journal, ii, 1898, p. 781, The Occurrence of Nerves on Intracranial Blood-vessels.

[19] Morison, Alexander: On the Innervation of Intracranial Vessels, Edinburgh Medical Journal, November, 1898, (N. S., vol. iv, No. 5).

[20] Waller, Augustus D.: An Introduction to Human Physiology, 1896, pp. 109-110.

[21] Hill: loc cit.: Note 13, p. 26.

With these facts at command we are ready to consider the sequence of pathologic events in that class of cases in which vascular paralysis is permanent. This, as is perfectly self-evident, will be as follows, and in the following order: arterial stasis with enormous rise in intracranial (venous) pressure, thrombus formation, transudation. What becomes of the transudate? Under normal circumstances, we have seen that it is quickly taken up by the veins, but in the present instance this is rendered impossible by the enormous pressure already existing in the veins; it must therefore gravitate, and room must be made for it. The brain itself has been shown to be incompressible, but supplied with a compressible arterial system; hence capillaries contiguous to the transudate will be obliterated. In other words, a vicious cycle is established which may go on indefinitely, the result thereof being a gradual increase of brain anemia. Under these circumstances, if the vicious cycle is started in the brain proper, the circulation, following physiological laws, is naturally turned toward the channels of low resistance, namely, the vascular areas of the cerebellum and bulb, and life is prolonged until the waterlogged cerebrum has attained sufficient size to obliterate bulbar capillary circulation. That this may take a long time will be evident if we take into consideration the pressure discontinuity which exists between the cerebral and cerebellar chambers, and bear in mind the fact that the bulbar centres possess the power of functionating with a greatly diminished blood supply. On the other hand, it is easy to understand how this very pressure discontinuity may be active in bringing about a quickly fatal issue in the case where the vicious cycle is started in the cerebellar chamber.

If we turn now to our introductory considerations on pathology we find that the vicious cycle which we have just described as having its origin in a traumatic paralytic stasis of cerebral vessels is analogous in every essential detail to that complex of pathologic conditions designated general contusion, and we may assume their identity. On this assumption, the following conclusions seem legitimate at this stage of the argument:

(1) That traumatic cerebral edema can find no place as a pathological or clinical entity.

(2) That it is primarily the inevitable sequence *in time* of that complex of pathologic conditions which we designate contusion.

(3) That inasmuch as contusion of the brain and its meninges is most commonly met with as a concomitant lesion to the more macroscopic lesions designated hemorrhage and laceration, the primary seat and extent of its accompanying edema will be largely fortuitous.

(4) That in the rare instances in which the application of a traumatizing force is expended in the production of a local contusion of the brain cortex or its meninges the brain is of itself abundantly capable of getting rid of the edema through its venous channels.

(5) That in the remaining cases in which the contusion is primarily extensive in the cerebrum, or where it affects the cerebellum or bulb, the factors which enter into the mechanism of the production of the edema are such as to preclude the possibility of operative relief.

(6) That contusion *per se* can easily cause death.

(7) That death in such cases results from anemia of the bulb.

If we examine now the observations of Bullard, Walton and others, we think that it will at once be obvious that the clinical and pathological findings so variously described by them may, when reduced to their lowest terms, be easily interpreted on the basis of contusion. Bullard[23] has accurately described the clinical manifestation of the paralytic dilatation of cerebral vessels which we have shown to precede the production of edema, in the following words: "In many cases, moreover, on operation we have no evidence suggestive of any severe hemorrhage and yet the increased pressure is present. What seems to occur is this: The brain in some way acts as a sponge and swells and pushes so hard against the dura as to inhibit or diminish pulsation." Again,[24] he summarizes an article on the increase of intradural pressure in head injuries in these words: "(1) An abnormal increase in the intradural pressure often occurs as an accompaniment or result of severe head injuries, where no large clot exists. (2) This intradural pressure may be in part due to an excess in the amount of subdural fluid. This, however, is, as a rule, not the chief element in the intradural pressure, which is principally due to the bulging of the brain itself. (3) The cause of this intradural pressure is apparently a congestion or filling of the intracranial blood-vessels and the results thereof."

(To be continued.)

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[22] Quoted by Hill: loc cit.: Note 13, p. 18.

[23] Loc. cit.: Note 6, first ref.

[24] Loc. cit., second ref.

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THE LOCAL TREATMENT OF PNEUMONIA IN CHILDREN.[1]

BY R. F. CHASE, M.D., BOSTON,
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From the fact that there exists at the present time much difference of opinion regarding the local treatment of pneumonia, not only among physicians of different localities but of the same place, and as this diversity has, perhaps, recently been increased by the introduction of the "cold treatment," it occurred to me the present might be an opportune time for the discussion of the subject. Therefore, with this as the principal object in view, this paper is presented.

As the result of an experience in the treatment of some forty-five cases of pneumonia in the past thirteen months, I shall herein take the privilege of expressing a few convictions.

There was a time, as you all know, when the abstraction of blood in this affection, as in many others, constituted almost the sole treatment. To-day this procedure is resorted to only in certain plethoric individuals, in which cases leeches are generally used.

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[1] Read at a Meeting of the Clinical Section of the Suffolk District Medical Society, January 18, 1899.

Blisters, which at one time were thought to accelerate resolution, have been discarded on account of the irritation and sloughing so liable to result.

I can best give you an idea of the local treatment of pneumonia in children from the early eighties to the present time by quoting from some of our well-known authorities:

Starr in 1844 lecturing on lobar pneumonia, said: "The local treatment consists in covering the affected side with a flaxseed poultice, and if the case is seen in the stage of congestion more decided counter-irritation should be employed. Mustard plasters or dry cups should be used, followed by a poultice — this to be changed twice in twenty-four hours, and not to be used after the crisis. If this treatment will not be carried out put on a cotton jacket."

Holt in 1885 recommended the use of the cotton-wadding and oiled-silk jacket.

In Meigs' and Pepper's edition, 1886, they say: "Poultices are useful whenever there is great oppression, and when resorted to in the evening dispose the child to sleep."

Smith, of New York, in his 1890 edition says: "Local treatment is required in all cases of pneumonia; counter-irritation should be produced over the chest with mustard, and, after, the chest should be covered by an emollient poultice."

In 1896 certain representatives of the children's hospitals of New York, Philadelphia, Washington and Boston contributed short communications to *Archives of Pediatrics* on the hospital treatment of pneumonia. The following are extracts:

Adams, of Washington: "In lobar pneumonia the cotton jacket, with or without oiled silk, is worn throughout the attack. If there is acute pain and surface congestion dry cups are applied over the inflamed area, followed by hot poultices and a jacket. For the fever cold water or water and alcohol sponging is used. The cold pack and ice poultice have not been used by us as yet." In broncho-pneumonia he used the cotton jacket and counter-irritation, and said, "Hot flaxseed poultices are indicated whenever pulmonary congestion is intense or general."

Northrupp, of New York, used thin, light, flaxseed and mustard poultices to cover whole front, back or side as needed, and when removed to be replaced by a warm flannel cloth. For the fever sponging with warm water and alcohol, also immersions in water at 90°, for seven to fifteen minutes, with constant rubbing.

Griffith, of Philadelphia, said he no longer used the cotton jacket, that he saw no good in it. Jacket poultices were only occasionally used. He used hot light poultices and turpentine stupes for pain, and recommended rubbing with turpentine for the bronchitis in broncho-pneumonia. For a temperature of 104° he gave sponge baths with water at 70°–80°; also the warm or cool tub-bath. For heart failure and dyspnea he used plunges in water at a temperature of 103°–105°.

Dr. Buckingham said: "I do not remember that I ever saw a poultice used in the Children's Hospital for this affection, nor is the cotton and wool jacket at all common." He recommended warm but light clothing.

Certainly from no better source could we derive an idea of the hospital treatment in 1896. One year earlier Dr. Rotch in his edition says: "There is no necessity for making any external applications to the chest. The use of poultices is to be deprecated, and in my experience is usually without benefit except in certain instances for the relief of pain."

One year later Jacobi says: "Warm poultices will greatly stimulate the bronchi. Their place is during hepatization, for the purpose of aiding absorption, not in the first stage of pneumonia."

Coming to the present time, or November, 1898, I quote extracts from the discussion held by the Section on Pediatrics of the New York Academy of Medicine, on The Treatment of Pneumonia in Children in Hospital and General Practice.

Dr. Crandall: "Mustard paste is of great service."

Dr. Carr, on broncho-pneumonia; "Counter-irritation to the chest, by means of a mustard paste or a mustard bath, at a temperature of 95° – 100°, will loose the labored breathing, lessen the congestion and calm the nervous system. Poultices are not to be applied, as their weight and the need for constant renewal are reasons why they are harmful. Jackets of flannel and of flannel and oiled silk are much better than poultices, as the skin under them can be cleansed."

For high temperature he recommends baths at 95° gradually reduced to 85°; also the pack at 65° – 70°.

Dr. Holt: "Moderate counter-irritation, especially early in the disease, is usually maintained by the use of a mustard paste every three to six hours, and an oiled-silk jacket is worn throughout the attack. He prefers these to the use of poultices. "Hyperpyrexia is best controlled by the cold pack"; has never seen any bad results when properly used.

Dr. Northrupp: "Little treatment is necessary in most cases of lobar pneumonia, but, whatever you do, do not put a child with a temperature of 104°–105° and respiration at 60 in a hot poultice tightly wrapped about the chest."

Dr. Berg: "Children recover from croupous pneumonia under any treatment, even under the old-fashioned poultice treatment, which is the most barbarous I know of. Neither the oiled-silk jacket nor poultices should be used in pneumonia."

Dr. Koplik: "Poultices or cataplasms do not work any good, nor can their use be justified on any scientific grounds in any form of pneumonia."

In summing up, we find that there are still in use the various counter-irritants, the cotton jacket and the cold applications. Of the counter-irritants and the cotton jacket there are, as you have seen, divers opinions, while of the cold applications there seems to be, in the main, but one mind.

Certain details of the "cold treatment" I quote from Baruch's paper on Hydrotherapy in the Pneumonia of Children, presented at this same discussion:

"In children under three years the tub-bath, with continuous friction, is most useful. If the body temperature is between 101° and 103° the child's face is bathed in water at 75°, its trunk is gently submerged in water at 95°, and held by pressing the finger upon one shoulder (not upon the chest). Ice-water is then added to 85°; friction over the entire body is maintained for five minutes. This bath may be repeated every four to six hours with advantage so long as the temperature does not fall below 101°. The duration should be prolonged to eight minutes."

In most children over three years the chest compress is the most useful. The compress should be wrung out in water at 65° – 70°. It is repeated every hour, and discontinued when the temperature drops to 100°.

Of the 45 cases of pneumonia referred to in the beginning all but 5 occurred in my district work for the Boston Dispensary, consequently among the poorer class of patients. In the treatment of these cases I was ably assisted by a competent trained nurse, herein having an advantage over some of our private cases. On the other hand, through the prejudices of ignorant parents, I was not given the freedom usually exercised in hospital treatment; 39 of these cases were of the lobar form, 6 of the lobular, or broncho-pneumonia.

Of the 39 with the lobar form, but 2 were under one year of age, 16 between one and three, 14 between three and eight, and 7 between eight and forty-five years. Of these but one terminated fatally; this, an eleven months' child, with a double pneumonia, developed diphtheria in its third week, dying several days later.

Of the 6 cases of broncho-pneumonia, aged sixteen months to seven years, one died on the day of my second visit; an unfavorable prognosis was given at the first visit. Another, on account of family difficulties, was sent to the hospital in the third week, recovery being doubtful. The four remaining recovered.

I give these few statistics that you may become familiar with the class of cases with which I have had to deal — mostly children one to eight years of age, and none of the very youngest or the very oldest cases frequently met with.

In treating these cases I have used many flaxseed-meal poultices (some experimentally), some mustard pastes, the cotton jacket occasionally, the ice cap, cold water, and water and alcohol sponging, and have allowed to be used, at times, camphorated oil, lard, etc.

The use of the poultice in this affection was not taught in the Harvard Medical School in my time, and I am sure has not been since. Its use here in Boston is, I believe, generally looked upon with disfavor, also by some of our best men in other cities. On the other hand, we see its use still tolerated, and even advocated, by good men, one or two of whom I might mention as authority. It is, perhaps, a late day to discuss the use of poultices, but as I have used them I cannot refrain from expressing my convictions regarding their beneficial effects.

I do not refer to the jacket poultice, which has, and I doubt not, for very good reasons, been discarded, but to the modern poultices properly made and properly applied. Such poultices are to be freshly made between pieces of gauze or cheese-cloth, the average area for children being about eight by ten inches, and its weight with the oiled-silk or paraffine-paper covering not exceeding six ounces. The poultice should be applied over the affected area, with the child lying in its bed, as hot as can be well borne by the attendant's face, and pinned with safety-pins to the undergarment. Each poultice should be removed at the end of thirty to forty minutes, or while still warm, and immediately replaced by a fresh poultice if desired, or by a warm flannel cloth if it is to be discontinued. The number required in twenty-four hours depends on the indications of the case; rarely, if ever, have I exceeded six or eight. They are, of course, to be discontinued when the patient is relieved or has fallen asleep.

My first and general impression regarding the use of the poultice was that it seemed beneficial, especially in the younger children. Later on, when I became more fully aware of the opposition to its use, I noted its effect more carefully, instructing the nurse to do the same and report to me. As the result of my observations in this limited experience I came to the following conclusions:

That poultices diminish pain when present, and that in doubtful cases the child often seems relieved.

That in bronchitis accompanying either form of pneumonia the râles are often diminished and the dyspnea relieved. In two cases which I remember particularly well, an extensive bronchitis cleared up entirely within twenty hours after the use of poultices.

That they have a soothing effect, not infrequently disposing a fretful, restless child to sleep.

That children rarely oppose their use.

That the object of their use should be to relieve the various discomforts of this affection, thereby helping to preserve the strength of the child.

The beneficial effects of poultices are due, I believe, to their warmth and moisture, their mild counter-irritation. The chief objections made to their use are that their weight impedes respiration, that their renewal fatigues the patient, that they retain the bodily heat, and that they are nasty. As to the validity of these objections I must allow you to decide.

That there are many cases of pneumonia which do not require the use of a poultice or any other application I am fully aware. That there is still a place for the use of the poultice I fully believe.

The mustard paste so much advocated certainly seems of benefit. Some believe it is capable of limiting the affected area when used in the earliest stage. Being one of the stronger counter-irritants, it must be used with some caution. Koplik's statement, that "the use of cataplasms cannot be justified on any scientific grounds," may be true. But is not our clinical experience a sufficient guaranty for their use?

No great claims are made for the cotton jacket, but it is so much better than a half-dozen thicknesses of superfluous clothing about the chest that I have occasionally resorted to its use.

For hyperpyrexia I have relied entirely on water and alcohol sponging.

The ice cap has proven very beneficial in delirium, and congestive headaches; it also lowers the fever. Cold applications are undoubtedly coming into favor in the treatment of pneumonia, but, from the nature of this affection, they will never be used to the extent they are in typhoid.

For the last dozen or more of the cases treated, I have constantly been on the watch for one in which I considered the symptoms called for the use of one of the cold applications, but have failed to find one. In explanation, I will say the cases have been mild; in no instance has there been a temperature of 104° lasting for six hours; the other symptoms have been proportionately mild.

In conclusion, let me call attention to what are by no means the lesser details in the treatment of pneumonia:

A quiet room, with plenty of fresh air and sunshine, removed from the noise of other children.

Proper food, properly given.

An attendant who will let the child alone when it desires to be quiet, as is so often the case, and one who knows when to turn the child when choked by the secretions, or from long lying needs a change in position.

As to the medicinal treatment, this subject in itself is sufficient for an extended discussion.

Some one has well said, "In the absence of a specific treat the child, not the disease"; to this I would add, let us not overdo.

TREATMENT OF PHTHISIS.

BY A. B. FARNHAM, M.D., MILWAUKEE, WIS.

The first point insisted upon is air, plenty of air, more than plenty of air, day and night and in all kinds of weather, almost without exception, and sunlight when obtainable. The exceptions and cautions are general and individual: the general, to avoid facing a very high wind when the cold is marked or the air dust-laden. Sitting in the open air with one's back to a high wind is to be encouraged. Exposure under almost any circumstances is preferable to a stuffy room. The point is to have the patients warmly clad — summer about their bodies. This attended to, winds and storms even are of minor importance. The individual cautions and directions from their very nature hardly admit enumeration. The chief one is to avoid talking when walking on a cold day, so as to avoid gulps, spasmodic mouth inhalations, and always to breathe through the nose. It is well to visit the patient's dwelling and pick out the best room possible, and give such other directions as a knowledge of the actual environment may suggest.

Next to air comes the stomach; it is pivotal. The first direction almost always is never to force eating. A natural appetite will come speedily when other matters are attended to. A local, persistent, frequent and full cleansing of the upper air passages, notably mouth, teeth and tonsils, is of sufficient importance to be noticed. Such a cleansing as I give with a coarse spray relieves the cough that is depending upon any catarrh there, removes the slight amount of sputum due to faulty expectoration, and improves the appetite. Find out what is the patient's natural home diet and modify and supplement it in such ways as each one seems to require appears to sum up what calls for much continuous and painstaking effort.

As to bathing, patients are directed to go over their bodies twice a week rapidly, selecting a section each day. If massage can be added the better. In the majority of cases a member of the household can be speedily instructed to attend to both bathing and massage in a fairly efficient fashion.

As to clothing, usual directions — wool next the skin, moderate weight the year round, looking to the outside garments for additional protection required by the season or exposures.

Directions as to care and disposal of sputum are the usual approved ones. It might be mentioned that I impress upon them that when the cheese-cloth handkerchief be used it be promptly burned before the secretions have time to dry.

Lung gymnastics are of such importance as to call for detailed attention. This is done in part in the office but mainly outside. For their outside work I give them printed directions and try to see that they live up to them. The inside work is to dilate by means of compressed air, with attention to details according to case. The great point aimed at is to keep in commission what good lung we have, to prevent further invasion and bring into operation increased area by distending the alveoli and clearing the smaller tubes. A local catarrh is a good soil for near-by germs to thrive in. This treatment is the very reverse of nitrogen compression, which at best ends in compressing two purulent sides together with attendant local pus cavities. What has become in such a treatment of our old drainage, cleansing and healing from the bottom practice? I would suggest to those who are using nitrogen compression, that they induce a pronounced phthisis in an animal, then inject the nitrogen, allow the animal to live a week or two, then kill, afterward freeze and examine the frozen sections; or experiment on a suitable cadaver along the same lines. Perhaps after this the vendors of nitrogen injectors may have more difficulty in selling their surplus stock.

In routine office treatment I use ozone freely after inhalations of vapors, generally one of a mixture of pine-needle oil, creosote and eucalyptus. I have used the ozone for three years and a half now, and think it useful.

Immediately the plan of the Tesla-Thompson high tension, high frequency battery was published in the *New York Medical Journal* I had such such a battery put up in my office. Have used it now for two years and a half with great apparent benefit in some cases.

Of direct medication I use strychnia sulph. identically as Doctor Mays recommends. Have had two patients on one-sixth of grain without showing any symptom. With patients who show such tolerance after intermitting I try the higher doses without running up. Proto-nuclein I use from the start and continuously.

All recognize the efficiency of creosote in some form. At present I am using the plain creosote, also the enteric coated pills of Dr. Flint, and the valerianate of guaiacol. Had a patient last fall who could take the medicine only in the form of valerianate of guaiacol; no trouble whatever with this preparation.

For fever I rely upon the general treatment and absolute-rest. Fever is the test of the efficacy of the handling and rarely calls for special treatment; sweating likewise; cough the same. If I use anything for the cough yerba-santa is my favorite remedy. All are grateful for the suggestion that in the morning before rising they should use gravity to aid them in clearing the lungs, depressing the head over the side of the couch, lying prone on stomach.

Injections of serum I employed in one case — not thoroughly, as patient was alarmed at eruption and refused to go on. I want to see reports of the injection of antistreptococcus serum in cases of persistent fever, and may try it myself.

Climate. — Generally speaking, do not believe in change. Anyhow it is utterly impracticable for the many, and cruel to a large number. Stand by the guns at home and fight the fight out manfully there.

Hospitals. — The subject is too great to be more than touched on. I have lived in them and very briefly say that their usefulness depends upon the head in charge as much as an army depends upon the great captain. Anyhow for the many they are out of the question at present.

Some improve on any or no treatment, or in spite of treatment. The great object is to combine all that the best experience of our best physicians has approved. I tell my patients that I want them to stay with me at least three months; the various lessons for them to learn cannot be taught in less time, nor the observations made on which those teachings depend. The earlier the patient comes the better, even in what we might call a stage of liability.

If asked to name the best remedy for phthisis I should unhesitatingly say the brains, and skill, and honesty of the doctor in charge. It has seemed as if medicine were drifting to socialism. But no fad or single remedy will ever replace the doctor's care and watchfulness.

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Clinical Department.

A CASE OF HEMATOMYELIA.[1]

BY R. C. LARRABEE, M.D., BOSTON.

The following case occurred on the service of Dr. C. F. Withington at the Boston City Hospital in April, 1898:

J. L., age twenty-six, single, laborer, born in Newfoundland. Family history negative. He had been in the habit of using, with occasional excesses, beer and whiskey. He had always been well and strong till six months before his final illness, when he contracted a venereal sore, first noticed two or three weeks after exposure. He came to the Out-Patient Department of the City Hospital at irregular intervals. Six weeks from the beginning of the sore a general glandular enlargement was noticed; and when he next came, seven weeks later, he had mucous patches and a fading macular and papular rash. He was put on mercurial treatment, but never returned to the Out-Patient Department again. Syphilis, therefore, preceded his final illness by about six months.

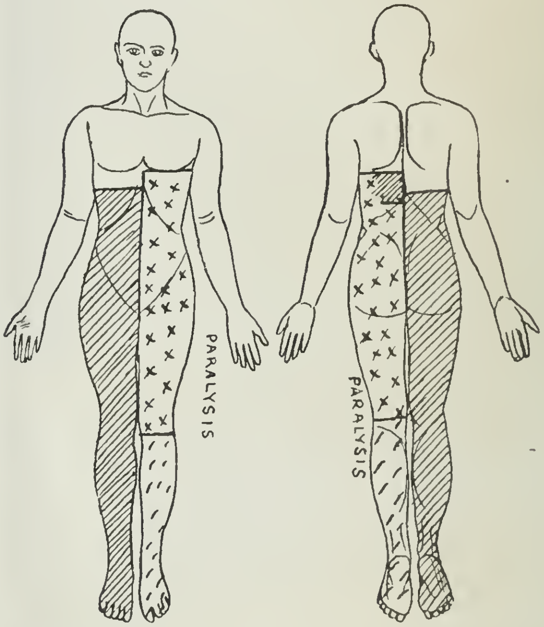
Two days before he entered the hospital he had, while at work, a pain in the back which felt as if he had strained it, though he was not aware of any particular over-exertion. Next morning when he awoke both legs were weak, especially the right, which also felt numb. Although these symptoms increased rapidly he was able to walk to his work. But he was unable to do anything and had to go home, this time being obliged to take the street-cars. He required assistance in getting to bed. By night he could not move and next day, less than forty-eight hours from the first premonitory symptom, he reached the hospital.

Retention of urine was present from the first. He was constipated, but said that his bowels had moved with cathartics. When admitted he was groaning with pain, which, though partly relieved by catheterization, persisted in the left testicle and particularly in the left lower abdomen. His appetite was poor and he had vomited twice.

Physical examination showed a well-developed and well-nourished man in fair general condition. The mind was clear. The motions of the eyeball and the reactions of the pupils were normal. The pupils were equal in size. The throat, tongue, pulse, liver, spleen and chest were normal. The abdominal wall was lax. The bladder was greatly distended. There was an old scar on the penis and a faint, brown, macular eruption on the chest and arms. There was also a general glandular enlargement, the epitrochlears being palpable.

There was complete paralysis, without rigidity, of the left lower extremity, and partial paralysis of the right. He could bend the right ankle and knee a little, but could not raise the leg from the bed. There was no atrophy, and the muscles were firm in consistency. Fibrillary twitching was noticed in the muscles of the chest, most marked in the pectorals. The handgrasps were good, and the muscles of the arms and head appeared to be perfectly normal. The diaphragm appeared to descend freely and the auxiliary muscles of respiration acted well on both sides. The knee-jerks were present when the patient was admitted, but three hours later they could not be obtained. Abdominal reflexes were absent. Plantar and cremaster reflexes were present on both sides, but were slight.

The sensory disturbances were of great interest.



▨ Complete loss of sensibility to pain and temperature. Decreased sensibility to touch.

✕ Increased sensibility to touch, pain, heat and cold.

⁄ Increased sensibility to touch, pain and cold. Absent sensibility to heat.

Between normal and abnormal sensations there was a line of demarcation about two inches below the nipple on the left, and four inches below it on the right. In back it was at the level of the tenth dorsal vertebra on the left, and at the twelfth on the right. The line was a sharp one. Above it all the sensations were normal; below it, abnormal.

Sensations to firm pressure and to touch as tested by a camel's-hair brush were much increased throughout the whole left side below the line just mentioned, while on the right they were decreased, but not lost. Sensation to pain, as tested by the prick of a pin, was greatly exaggerated on the left, while on the right even a deep puncture produced no pain at all. Sensibility to heat and cold was tested by holding against the skin test-tubes filled with hot and cold water. To both there was increased sensibility on the left, so much so that a degree of heat or cold that was felt only moderately in the normal area would cause him to cry out or say, "You are burning me." Below the left knee, however, heat could not be recognized. On the right the patient was entirely unable to tell the hot from the cold tube. The line of demarcation between the two halves of the body, between anesthesia and hyperesthesia, was very sharp. The difference was perfectly apparent between the two sides of the penis.

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[1] Read at a meeting of the Clinical Section of the Suffolk District Medical Society, January 18, 1899.

It will be noticed that the paralysis is, on the whole, of the Brown-Séquard type, which is produced by a destructive lesion involving one-half of the cord. In many cases of this sort there is a zone of anesthesia just above the hyperesthetic area. Here the only suggestion of this was a small area of rather indefinite outline just below the line of demarcation on the left (paralyzed and hyperesthetic) side, close to the spine in back.

The *tache cérébrale* was present, and was especially well marked on the left side. There was marked priapism.

The patient lived for five days after entrance. The temperature was but slightly elevated. Pulse and respirations were much increased. His mind was clear throughout. His physical signs showed no changes of importance. On the second day the fibrillary twitchings were no longer seen in the muscles of the chest, but were present in both legs. The paralysis of the right leg became more complete. On the fourth day he vomited a large quantity of greenish-black, sticky fluid containing blood, as shown both by the microscope and by Teichmann's hemin test. He continued to require the catheter, and the bowels moved only after enemata. On the fifth day he complained of much pain in left half of the abdomen and there was some temporary distention. His general condition remained fairly good, however, up to the time of his death, which occurred very suddenly.

The treatment consisted of the application of ice-bags to the spine, potassium iodide in increasing doses up to ninety grains daily, and alcoholic stimulation as required.

The autopsy was performed by Dr. F. B. Mallory, permission being obtained to examine the spinal cord only. The microscopical examination of the cord was very thoroughly done by Dr. J. J. Thomas, to whom I am indebted for the following abstract:

"In the upper dorsal region of the cord there is a slight swelling, extending for five centimetres. On section the gray matter is softened and yellowish in color. Below this enlargement there is a slight hemorrhage beneath the pia. On section there is a hemorrhage in the left half of the cord, apparently not extending into the right half. This hemorrhage extends along the cord for a distance of six centimetres.

"Section through the upper dorsal region, at about the level of the first and second dorsal segments, shows great thickening of the pia and changes in the pial blood-vessels, where there is marked proliferative endarteritis, which in some cases has resulted in complete occlusion of the vessel. About many of the vessels there is a marked infiltration with lymphoid cells. Many of the vessels of the pia and also of the nerve roots are enormously dilated. These conditions are seen at other levels of the cord, but to a less degree.

"In the cord itself there are numerous areas of hemorrhage in both the gray and white substance. These are throughout the left side of the cord, and in small scattered areas also on the right side of the cord. There is marked dilatation of the blood-vessels of the cord and infiltration of their walls, and endarteritis. The central canal at this level cannot be made out because of the extent of the hemorrhage. The greater part of the white substance has been destroyed, especially upon the left side, but here and there are clear areas, containing swollen, faintly staining nerve fibres. Higher up in the dorsal region much the same condition is found, except that the hemorrhages are much less extensive, and are almost confined to the left side, except a slight one in the gray matter at the base of the posterior horn and in the adjacent part of the posterior column. The commissural fibres of the gray matter and the fibres running into the posterior horn are fewer than normal and stain poorly. The anterior horn of the left side is here partially destroyed by hemorrhage.

"Still higher in the dorsal region there is a degeneration of the posterior root zone and of the central half of the posterior columns. This degeneration of the posterior root zone is also seen in the lower cervical region, and at both this level and in the upper dorsal region there is a slight diffuse degeneration of the nerve roots, more marked in the posterior roots.

"In the upper cervical region of the cord there is a slight diffuse degeneration of the fibres of the white substance at the periphery of the cord.

"The lower levels of the cord show nothing beyond a dilatation of the central canal, which is filled with blood and fibrin.

"*Diagnosis.* — Hematomyelia, syphilitic endarteritis of the blood-vessels and syphilitic infiltration of the pia."

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

(Concluded from No. 14, p. 335.)

Regular meeting Wednesday, January 4, 1899, Dr. J. C. Warren in the chair.

BURN FROM THE USE OF A HOT-WATER BAG.

Dr. Harrington showed a water-color drawing of a sloughing of the tissues on the dorsum of the foot, the result of the application of a rubber hot-water bottle. The burn happened while the patient was conscious but suffering from intense abdominal pain. The patient was a healthy young woman. The hot bottle was used at her request, and was applied by her husband, who was not a medical man. The drawing was made to be used as a warning against the use of the deadly hot-water bottle in overdoses. The danger from the use of heaters cannot be called to notice too frequently.

APPARATUS FOR FLUSHING THE ABDOMINAL CAVITY.

Dr. Harrington also showed a simple apparatus, weighing but a few ounces, which can be conveniently carried in the operating bag, by which flushing out the abdomen with either salt solution or plain water can be accomplished with ease, wherever boiled water can be had. It consists of a short, hollow, nickel-plated elbow, which can be hung over the edge of a pail or other receptacle for the water. To one end is attached a short piece of rubber tubing, which reaches nearly to the bottom of the receptacle. To the other end is attached a rubber tube from five to six feet in length. The tubing is five-eighths of an inch in diameter, which gives a large stream. The receptacle is raised, and by stripping the tube the water is siphoned off. The flow is stopped by a suitable clamp. At the distal end of the tube a Tait's irrigator or a smaller tip can be attached. By this means any quantity of fluid can be quickly used. A smaller but similar elbow was also shown to be used for the intravenous injections of salt solution. A rubber ice-bag was recommended for the purpose of cooling boiling water to a suitable temperature for use. The entire apparatus can be quickly sterilized without injury by boiling.

Dr Farlow: I quite agree with what Dr. Harrington has said about the difficulty of removing by instruments passed through the mouth these foreign bodies, when they are low down in the esophagus. I think it is always advisable to make a thorough examination of the throat, larynx and trachea, even when it seems probable that the foreign body is in the esophagus.

I am reminded of a very fortunate experience that I had several years ago. I was returning from my clinic at the hospital, and happened to have my bag, containing head mirror and several pairs of laryngeal forceps.

As I was passing, a gentleman ran down the steps of a house in great haste inquiring excitedly if I knew where he could find a doctor. His wife was sitting at the dinner table, and while laughing at an amusing story drew a piece of meat into her throat. I followed him into the house as quickly as possible. I found the wife seated in a chair in the bay-window in evident distress. She was gasping for breath, and her friends had opened the windows and were fanning her. I put my head mirror on and, using sunlight for illumination, I removed a piece of meat from her larynx by means of a pair of laryngeal forceps. I was told that the meat had not been there more than three or four minutes, possibly even less time.

A loose bristle from a bristle probang looks not unlike a fish bone, and I have known the two to be mistaken for each other.

Dr. Lothrop: Some time ago I had a case resembling the one that Dr. Farlow has just mentioned. It was a fatal case of accidental suffocation while swallowing a piece of meat, and is reported in full in the *Boston Medical and Surgical Journal*, April 13, 1896.

Dr. E. W. Cushing: I was one day having my own supper and heard a smothered gurgle in the next room, where my little girl was in bed. She had put a round piece of candy in her mouth and it had slipped down. She was black in the face. I had her mother hold her by the legs, and I put my finger in and hooked it behind the candy and drew it out.

I have heard of other such cases, and I am sure that it is dangerous to allow little children to go to sleep with candy in the mouth.

Dr. Prescott: I once did an autopsy on a child who had gone to bed after having eaten an orange. She went to sleep and is supposed to have vomited and drawn the orange into the throat. Dr. Conant, who was called, got there as soon as possible, but the child was dead. At the autopsy the pulp of the orange was found in the smallest divisions of the bronchi.

Dr. F. B. Lund reported

A CASE OF OPERATIVE INJURY OF THE THORACIC DUCT.

Injuries to the thoracic duct have until recently occupied but little space in works on surgery. Most of the books have dismissed them with the remark that they are usually fatal and beyond treatment. Most of the cases reported have been severe crushes of the chest and injuries of that sort, which resulted in leakage into the pleura causing chylous pleurisy, or into the abdomen causing chylous ascites. Injuries to the thoracic duct in the neck were associated, on account of the anatomical position, with injuries to the great vessels, and were almost always fatal. In 1885 Kirchner collected 17 cases of injuries to the thoracic duct, all of which except one were injuries due to severe accidents to the chest, such as crushes between railroad cars, and of which only one recovered. But in recent years, since the complete operation for cancer of the breast has become the rule, it has become customary and necessary in a very large number of cases to dissect the subclavian triangle, and in operating on the left breast the thoracic duct has been injured in a moderate number of cases. Cushing, in the *Annals of Surgery* for June, 1898, has reported nine cases in which the thoracic duct was injured in operating for cancer of the breast or for dissection of tuberculous or other glands in the neck, with the somewhat surprising result that only one of the cases was fatal. That was a case, I think, that was operated on by Dr. Cheever some years ago, in which the injury to the duct was associated with an injury to the internal jugular and subclavian vein; it was a dissection for malignant disease, and death resulted from shock. Of these nine cases which Dr. Cushing has reported two occurred at the Johns Hopkins Hospital, and in one the duct was sutured, with the result that there was no leakage; in the other case the leakage appeared several days after the operation, the wound having healed by first intention. A tumor appeared in the upper part of the wound, which was opened, and a milky fluid poured out several days. It was finally stopped by gauze packing.

There have been two other cases in which the duct has been sutured, one by Dr. C. A. Porter at the Massachusetts General Hospital, and one by Dr. Keene in Philadelphia. Of 60 cases operated on at the Johns Hopkins Hospital in which the neck had been dissected in the complete operation for cancer, the left breast was concerned in 35, and injury to the thoracic duct occurred in only two. The question is why these cases heal up so well. In the first place, it is probable the duct is not completely cut off, but simply wounded, and in that case healing naturally takes place. Another possible reason is the not infrequent anomaly of the duct, in which it is double near its outlet, so that one of the divisions may be wounded sufficiently to allow for a time profuse leakage; but later the chyle may be taken care of by the unwounded remainder of the duct. Instances have been reported of a double thoracic duct, in which the main trunk branched opposite the thoracic vertebræ, one entering the right, and the other the left, innominate vein. Some state that in as many as 25 per cent. of the cases the duct is double at its termination. It is possible, as Cushing suggests, the lymph amount may be reversed and ultimately taken up by the right thoracic duct. Be that as it may, from the cases in which it has been injured in the neck there have been surprisingly few fatalities — only one of those nine cases reported. Since becoming interested in this case myself I have learned of several others, one of which occurred in the practice of Dr. J. C. Warren and one of Dr. Mixter, in which a chylous fistula resulted from operation for cancer of the breast, and in which the patients made a perfect recovery. The measures that have been taken to stop this leakage have been gauze packing, the application of clamps and suture, and they have all been uniformly successful. Dr. Cushing advises in operations where the subclavian triangle on the left side is dissected to tie all lymphatics, and in case you have wounded the thoracic duct to place a provisional ligature around it and attempt to control it by packing. In case the packing is unsuccessful he advises tying this provisional ligature, and occlude the duct in the hope that an anomalous branch or the diversion of the current to the right subclavian vein will carry the lymph into the blood, or that, in some way, the collateral circulation will be established.

With regard to the dangers of stopping up the thoracic duct, Sir Astley Cooper in 1798 tied the thoracic duct in dogs and found that sudden occlusion thus produced was always fatal. In cases which have suffered from pressure on the thoracic duct by tumors there has been a varicose condition of the duct below the point of pressure, chylous ascites, chylous pleurisy and various untoward complications. Other cases have been reported in which there had been a gradual occlusion of the thoracic duct by pressure of tuberculous masses which had finally become complete and resulted in the rupture of the duct. In the light of the experience of the cases reported, it seems to me that I should wait a long time before attempting to stop up the thoracic duct. I should prefer to let it leak, on the chances, which are very strong, that it will heal, than tie a provisional ligature. The advice of Dr. Cushing to tie all large lymphatics even while operating in the neighborhood of the duct seems to me excellent.

The case of the patient whom I am able to show you also presents other points of interest beside the fact that the thoracic duct was injured. She is a woman of thirty-four years, born in England. Her mother is said to have died at the age of thirty-five of cancer of the uterus. Her case illustrates the danger of depending on the excision of small pieces for diagnosis of tumors of the breast. She had had a tumor in the breast about six months; a small piece was excised and reported to be fibroma. The tumor presented clinically no characteristics of malignancy. It was removed and seen definitely to be carcinoma, and as she had not been prepared for any extensive operation the complete dissection had to be postponed until two weeks later.

At the operation there was found a very large number of discrete enlarged glands surrounding the axillary vein and extending up to the clavicle, and in order to remove them it was necessary to completely divide and remove the greater part of both pectoral muscles. On laying open the subclavian triangle the glands were found quite extensively involved, a great many discrete small glands being seen. The omohyoid muscle was divided and the whole triangle, internal jugular vein and subclavian arch were cleaned. It was recognized there was great danger of wounding the duct and it was looked for, but there was no evidence of leakage anywhere although the triangle was cleaned out completely.

On the second day after the operation she began to complain of considerable pain in the neck, and on the fourth day there was noted a distinct tumor above the clavicle and the leakage of a little milky fluid between the stitches. On opening this portion of the wound it was found to be filled with this partially coagulated milky fluid. On cleaning it out, down at the very bottom of the wound there was found a steady leakage of milky fluid, so rapid that one had to sponge quite briskly to keep it dry. I do not know how much there was of it, but we put on a big dressing which had to be changed every three hours; it welled up very fast. That sort of thing continued four days. The gauze packing was depended upon to stop it. It was packed loosely at first. On the fourth day a firm packing was put in and the leakage almost entirely ceased. An interesting thing about it was that her convalescence was not apparently affected by it at all. The operation was on the 11th of December.

In two of the three cases that have been sutured there has been leakage following the suture. In recent dissections on the cadaver, I have found that the duct not infrequently extends high enough into the neck to be in danger of wounding in this operation. I don't think, as far as I can learn, it is to be considered a very serious accident to wound the duct or one of the branches, which, considering the number of times we shall probably injure it in operating for cancer of the breast, seems to me a fortunate fact.

Dr. Mixter: I remember very well when I was demonstrator of anatomy one of my favorite demonstrations was the injection of the thoracic duct. That could easily be found down in the abdomen and injected, and then it was later dissected in the neck. It always comes well up into the neck. As I remember it in the dissections I made, it was seldom we found this anastomosis spoken of. The well-known dread of wounding the thoracic duct made me fear that injury very much when I began to operate in that region. I am not sure I have ever cut the thoracic duct. I know in a number of cases I have cut large radicles which have yielded an enormous flow of fluid, which has poured out like blood from a good-sized artery, only it was clear fluid. In these cases I have simply tied the vessel. I have only once had the wound fill with this clear fluid. I remember several cases where, in dissecting for cancerous or tuberculous glands in the left side of the neck, I have cut off very large lymphatic vessels, which have given a copious flow, and they have simply been tied as I would tie an artery. Of course the whole trunk could not have been tied, but I am sure that when a person in one of these dissections sees one of these vessels flowing, so that you have to mop with a sponge very quickly and thoroughly in order to get a view of it, if you pick it up and tie it, in a large majority of the cases there is no further trouble.

Dr. Warren: Dr. Lund referred to a case of mine. At the time of the operation I saw no oozing. Four or five days afterwards a tumor formed in the scar, and on opening it fluid escaped, and continued to escape one or two weeks; finally controlled by a pad and large strip of adhesive plaster over the back and chest.

On two subsequent occasions the region had to be dissected for recurring glands, and in each instance the same thing occurred, at the time of the operation there being no escape of fluid, apparently, but a subsequent tendency to tumor formation and fistulous opening.

Dr. E. W. Cushing showed a pathological specimen.[2]

Dr. Mixter showed an unusually large gall-stone, removed ten days before from the common duct. The patient was doing well.

Dr. Goldthwait: This is an x-ray photograph of a rather unique case. A child of eight years, with complete curve of the upper end of the neck of the femur, so that, instead of being at the normal angle, the neck of the bone was inclined down so much that the top of the trochanter rested against the wing of the ilium on each side, and it was impossible for the child to separate the malleoli more than five inches, and the gait was the crossleg gait. She has been operated upon by oblique osteotomy.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M D., AND H. W. CUSHING, M.D., BOSTON.

THE SERUM-THERAPY IN INFECTIONS BY PYOGENIC MICRO-ORGANISMS AND IN ERYSIPELAS.

The value of serum treatments in infections by pyogenic micro-organisms and in erysipelas have been carefully studied in an exhaustive series of experiments by Parascandolo,[1] from which he derives the following conclusions:

(1) That he was the first to establish on a solid basis the theory of immunization of animals from infection by pyogenic cocci and those of erysipelas, and to produce a potent serum.

(2) He also provided examples of a new variety of the streptococcus pyogenes and of erysipelas.

(3) That the best culture medium for these bacteria is a peptonized and sweetened meat-bouillon.

(4) That he has shown that the best method of increasing the virulence of pyogenic and erysipelas cocci is the preserving of the culture on a two-per-cent. sweetened and peptonized bouillon, and that this method is superior to all others.

(5) That the highest grade of virulence which can be produced in pyogenic and erysipelas cocci is one one-millionth centimetre, which is capable of killing a guinea-pig of 400 grammes' weight in forty-eight hours. A higher grade of virulence cannot be produced with our present means.

(6) The best method of immunizing animals is by the use of toxins, and not cultures of virulent bacteria.

(7) That the best protective serum is that derived from animals immunized in this manner.

THE TREATMENT OF TETANUS.

Dennis,[2] in an article on this subject, states that the recent encouraging results attending the treatment of tetanus are chiefly due to the application of antiseptic surgery and to the introduction of a new form of serum-therapy, but maintains that these new remedies have engrossed the attention of the surgeon to such an extent that some of the essential features of the older methods of treatment have been overlooked. The object of the author in his article is to call attention to the use of the older remedies which have been found to be most useful, and to consider in addition the therapeutic value of antitoxin. The treatment, therefore, embraces measures applicable to the wound itself as well as a study of the best constitutional remedies. The local management of the wound is a most important part of the treatment. It has been shown that in the majority of cases of tetanus the infection proceeds from the development of the spores rather than from the bacilli. It has also been demonstrated that the spores develop better under special circumstances of a mixed infection, and, therefore, all tetanus wounds should be made at once aseptic in order to destroy the microbes of suppuration, notably the streptococci and the staphylococci. In attempts to render the wound aseptic all scabs should be removed and at once burned, since the bacilli have been found in these crusts. The wound underneath the scabs should be thoroughly disinfected. For the purpose of disinfection Sternberg has shown that a five-per-cent. solution of carbolic acid, or a 1 to 1,000 solution of bichloride of mercury, to which is added a one-half-per-cent. solution of hydrochloric acid, will kill the spores in ten minutes. Tizzoni and Catanni suggest the employment of a one-per-cent. solution of nitrate of silver, which they claim will destroy the bacilli and the spores in about one minute. The actual cautery has been also suggested as a means of destroying the microbes; but this kind of treatment must be used under the influence of an anesthetic. Iodoform is the best antiseptic powder to use as a dressing in the tetanus wound. In addition, a one-half-per-cent. solution of iodine trichloride should be used, because this destroys the action of the toxins of tetanus in less than an hour. If a wound on an extremity, notably on the finger or toe, cannot be thoroughly disinfected, amputation of the affected part is indicated, but is of no avail unless the sacrifice is made immediately after the infliction of the injury. The employment of antidotes forms also a prominent part of the treatment. This step, therefore, should not be overlooked, since it is clearly proved that much suffering can be relieved by certain drugs. Among the drugs that are found to be most useful are chloroform, morphine, chloral, bromides, physostigmine, antimony and nitrite of amyl. Chloroform is a most valuable remedy, because it relieves the intense suffering and diminishes the intensity of the spasm, and also prevents suffocation. Morphine in large doses depresses the action of the spinal cord and diminishes the reflexes. It relieves pain, induces sleep, and relaxes the tonic contractions of the muscles. Chloral is a most important drug, since it depresses the motor tract of the spinal cord. To be effectual it must be administered in large doses, and the action of the drug carefully watched. It occasionally happens that its administration by the mouth causes convulsions, and in this case it should be employed in the form of a suppository. That chloral is a most valuable drug in the treatment of tetanus is demonstrated by the fact that the mortality has been reduced six per cent. in those cases in which it has been used.

[1] Weiner klin. Wochenschrift, 1897, Nos. 38 and 39; American Journal of Medical Sciences, January, 1899, p. 95.

[2] Annals of Surgery, December, 1897, p. 657.

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[2] See report of Section for Obstetrics and Diseases of Women, December 28, 1898.

The bromides act by causing cerebral anemia, and are most effective when used in connection with chloral. Physostigmine acts also as a depressant of the spinal cord, especially the motor tracts of the cord. It also causes relaxation of the muscles and diminishes the reflexes. Antimony was suggested by Bross, of Costa Rica. He gave the drug in one-eighth to one-sixth of a grain, every two hours, in conjunction with morphine. If the latter drug is used simultaneously vomiting is prevented. The action of the antimony is to allay the convulsions and diminish the reflexes. Nitrite of amyl has been used with great benefit. It should be given between the spasms, as it cannot be inhaled during a spasm, since the respiratory muscles are then affected.

In the use of all these physiological antidotes, clinical experience has shown that the continued employment of one drug soon causes it to lose its therapeutical effect, and in order to get the greatest benefit from these physiological antidotes they should be administered in rotation. De Renzi has recommended absolute quiet as an essential condition in the treatment of tetanus. He confines the patient in a dark room, with no windows, and, to aid in the enforcement of quiet, plugs the ears of the patient. During the progress of the disease the nutrition of the patient must be kept up at stated intervals, and attention must also be directed to the bladder, since the urine must be drawn from the patient at regular intervals. The bowels must also be watched and a daily movement secured.

The administration of antitoxin is a new remedy. The conclusions to which the writer has come in regard to it are those which only could be scientifically arrived at from careful investigation of the limited number of cases in which the antitoxin alone was employed. The cases are too few under this essential category to establish a fixed law from which no deviation is to be made. The facts thus gathered do not warrant the conclusion that in antitoxin a remedy exists that will invariably cure tetanus. The facts, however, do justify the conclusion that under certain conditions antitoxin is a remedy of the greatest service to mankind, notably in the matter of immunization. Antitoxin may be employed either for the purpose of immunization or as a remedy during the progress of the disease. Bazy, a French surgeon, had four fatal cases of tetanus in his practice in one year, and subsequently began injecting twenty cubic centimetres of serum into all patients who suffered from lacerated wounds into which extraneous matter had of necessity entered. Since he adopted this practice tetanus has not followed in those cases in which a strong probability existed that this dreaded disease might develop. Lambert mentions that Nocard, in veterinary surgery, immunized 375 animals, and in no single case did tetanus develop, while he had 55 cases of the disease in animals in the same environment. Antitoxin does not affect in any way directly the life of the bacilli of tetanus or the spores. Both the bacilli and their spores, when they penetrate the tissues by a wound, live for days or weeks. In these cases, when antitoxin is given for the purpose of preventing the symptoms which would be caused by the toxins during the first few days, it will destroy the action of the toxins. If, however, some of the spores remain quiescent, they may only develop into bacilli at a time when the antitoxin has been eliminated, and if they then develop into bacilli the toxins produced will be absorbed, and cause symptoms just as if they had received no immunization dose of antitoxin. For this reason the immunizing dose should be repeated after the first week, and again after the second week, and even after the third week. The immunizing dose is about ten or twenty cubic centimetres, or about half of that required during the progress of the disease.

Antitoxin as a remedy during the progress of the disease has an important influence upon tetanus, but not to the same extent as when employed for immunizing purposes. Welch believes that the longer the period of incubation the better will be the results from the use of antitoxin, and that this remedy is of little value with a short incubation period, that is, less than seven days. When antitoxin is used under these conditions it should be continued long after the symptoms of tetanus have subsided. The dose should be at least twenty cubic centimetres, three times daily, and in some cases even larger. Lambert has also called attention to a most important point in the treatment of tetanus, and that is the great care the surgeon should exercise after all symptoms have disappeared. For example, absolute quiet should be insisted upon long after the patient has become convalescent, since he knows of five deaths recently where the patients were awakened suddenly out of a sound sleep, and a convulsion was brought on from which the patient died. Failures to cure tetanus by antitoxin are, therefore, to be attributed to too small doses, to doses not repeated often enough, and to doses not persevered in for a sufficient time. In addition, the surgeon should not become careless and allow the patient to be aroused suddenly out of sound sleep before all danger has passed.

CRANIOTOMY WITH THE "GIGLI" SAW — IMPROVED TECHNIQUE.

A. Podrez, of Charkow, describes the following method, which he claims is quite satisfactory, since it enables the surgeon to rapidly remove extensive areas of the skull and expose the brain without injuring the subjacent portions of the latter. He describes it as follows:[5]

The instruments are (1) the "Gigli" saw; (2) a "conductor," which is a piece of well-tempered, rather strong, watch spring, width three to four millimetres, and length thirteen to fifteen millimetres; one end is in the form of a ring or handle, the other olive shaped and perforated with a small hole, through which a piece of silk is threaded, the length of which is twice the length of the instruments; (3) a simple drill or trephine of medium size. In operating, the drill, like a carpenter's bit, is used to perforate the skull at points corresponding to the corners of the area of skull to be removed. The silk carrier, to one end of which is fastened the saw, is led through from one opening to another by the "conductor"; it is then fished out and the saw drawn through. Now, while the "conductor" is in position, the bone is sawn through. The saw is prevented from injuring the brain by the "conductor." The pedicle of the bone flap is sawn through on its dural surface, so that the outer table only holds it in place, and can be easily broken by turning the bone flap back. For convenience, in passing the "conductor" under the skull, the trephine holes are drilled at an angle of 40° to 45° with the surface of the skull. This facilitates the introduction of the saw. The size of the opening should be large enough to easily admit the saw.

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[5] Centbl. f. Chir., 1899, Bd. xxvi., S. 257.

THE FATE OF DEAD BONE OR IVORY IMPLANTED IN CRANIAL DEFECTS.

Max David,[4] Berlin, concluded from experiments on dogs, when living bone was implanted, that it continued to live and became united to the surrounding bone. Barth, on the contrary, also as the result of experimental work, concluded that the live bone so implanted always dies, and the subsequent course of events is the same whether live or dead bone or ivory is used. In order to establish the true facts David then made another investigation. Ivory or dead bone was implanted in the skulls of dogs, and the changes studied, both clinically and histologically, until the end result was demonstrated. It was found that the healing could take place without any bad symptoms independent of the material used, whether living or dead; that dead bone and foreign material were absorbed and replaced by new formed bone; that transplanted living bone became vascularized anew from the adjacent tissues and continued to live; that when ivory was implanted the change was a long one, on account of the great resisting power of this hard, dense material. It required eight weeks to become united to the skull. With dead bone (bone killed by boiling fifteen minutes) the process was more rapid. It became united to the skull in one week, and at the end of the eighth week it was difficult to distinguish it from the living bone. The process was the same as with the ivory. Nests of giant cells from the pericranium, dura and cut edges of skull penetrate the implanted piece and act as osteoclasts. Cavities are formed by them which vascular loops enter, and the cells from their adventitia become typical bone cells, as far as can be learned. The whole adventitia becomes ossified, and lamellar appearance of the bone later becomes clear.

THE FILLING OF CRANIAL OSSEOUS DEFECTS WITH CHARRED BONE-PLATES.

Grekoff[5] has employed in actual practice the method which Barth found valuable in experiments. In the cases of two young children who had, as the result of operation after serious injury, defects in the cranial bones, he used the charred bone with success. In one instance all the plates were not sufficiently charred, and he was obliged to remove some fragments. This gave him the opportunity to observe the actual condition in the remaining plates. He found that the results were all that could be desired, and that the charred plates had been replaced by new, healthy bone.

The function of the charred bone, the author believes, is solely that of a skeleton over which the new bone develops from the adjacent margins of the skull. The cancellated bone is, therefore, most readily penetrated and absorbed, and makes the best plates. In his cases he employed the scapulæ of the calf.

THE RESECTION OF THE SECOND BRANCH OF THE "TRIGEMINUS" AT THE BASE OF THE SKULL.

A. Frænkel, Vienna, recommends the following method for the deep resection of the second branch of the fifth nerve.[6] He incises and dissects away the mucous membrane of the mouth from the upper jaw, over the canine fossa, backwards and upwards, till the zygomatico-alveolar crest is reached, thus exposing the anterior wall of the antrum. The lip is drawn out of the way with a retractor, and the exposed wall of the antrum is lifted back as a mucous osseous flap. The cavity is examined with artificial light, and the site of the nerve branch, which can be seen through the thin posterior wall, located. At this point a flap of the mucous membrane is dissected back with a small elevator. The thin, posterior bony wall is now chiselled away and the nerve comes into view. It is drawn out by a hook and resected from the edge of the inferior orbital fissure back to near the foramen rotundum. The bony flap of the anterior wall of the antrum is then sutured loosely in place. The cavity is drained with iodoform gauze. The hemorrhage is slight. The advantages of the method are, the avoidance of an external wound; no great vessels are endangered (for example, internal maxillary artery); the operation can be done more rapidly. To find the nerve easily the cavity of the antrum must be well illuminated. The nerve is readily seen through the thin posterior wall of the antrum.

THE OPERATIONS FOR GOITRE.

Wormser,[7] in discussing the operations performed in the Berne Clinic, summarizes Kocher's views regarding the indications for the different methods of operating, as follows:

I. Thyroidectomy is indicated: (1) For malignant tumors of the thyroid gland; (2) for acute or chronic struma; (3) for parenchymatous goitres (diffuse hypertrophies of the gland); (4) for polycystic goitres; (5) for multinodular goitres. It is contraindicated, on the other hand, if there is no normal thyroid tissue present.

II. Strumectomy (intraglandular enucleation) is indicated: (1) in unilocular cystic goitres; (2) in isolated nodules situated in normal tissue, if they can be removed rapidly and without marked hemorrhage; but otherwise a thyroidectomy is indicated; (3) for large nodules situated in immobile goitres.

In reference to exophthalmic goitres, Kocher prefers ligature of three of the arteries at one time, and later of the fourth. Section of the sympathetics is, as yet, too new to warrant an opinion.

TREATMENT OF AIR EMBOLISM BY PUNCTURE OF THE HEART.

Von Bégouin,[8] having observed a case in which death undoubtedly resulted from entrance of air into a vein, confirmed the fact by experimental work on animals. He found in this manner that death followed more rapidly the spontaneous entrance of air into the jugular vein when it was blown into than when it was blown in. In the latter cases, by puncture of the right ventricle and removal of the air then collected by aspiration, he was able to resuscitate the animal. The aspiration was made with the "Dieulafoy" apparatus. A No. 1 needle was used and fifteen or sixteen syringefuls of air withdrawn, whereupon the alarming symptoms rapidly disappeared. Upon examination of animals killed in this way it was found that the right ventricle was markedly distended with air, while the left ventricle and the pulmonary capillaries were free from it. Therefore the cause of death seemed to be due to the interference of the circulation in the right ventricle from the collection of air there. In animals saved by puncture of the right ventricle the occurrence of hemorrhage or emboli afterwards was not seen. The writer thinks that no danger to life would result from this method of treatment if carefully carried out.

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[4] Arch. f. klin. Chir., Bd. lvii, 533.

[5] Centrbl. f. Chir., October 1, 1898; American Journal of Medical Sciences, March, 1899, p. 351.

[6] Centbl. f. Chir., 1899, Bd. xxvi, 261.

[7] Revue de Chir., April, 1898; American Journal of Medical Sciences, February, 1899, p. 225.

[8] Société de Biologie, dix Séries, Tome x, No. 5, 1898.

(To be continued.)

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Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

J. BERGEN OGDEN, M.D., SECRETARY.

Regular meeting Wednesday, January 18, 1899, Dr. H. F. Vickery in the chair.

Dr. R. C. Larrabee read a paper entitled

REPORT OF A CASE OF HEMATOMYELIA.[1]

Dr. J. J. Thomas: This case was extremely interesting to me because of its connection with syphilis. Hemorrhages in the spinal cord are most often caused by injuries; sometimes direct injuries as fracture of the vertebræ and crushing of the cord produce large hemorrhages; and sometimes they are supposed to be simply from slipping forward of the vertebræ one upon the other. Hemorrhages are also produced by great change of air pressure, as diver's paralysis, where a man has been working under increased air pressure and comes into the normal air. Aside from these cases hemorrhages do occur spontaneously in the cord, but much less commonly than in the brain. The small aneurisms of the blood-vessels in the brain are extremely rare in the cord, although sometimes seen in the medulla and upper portion of the spinal cord, but as a rule it is very seldom one sees diseases of the blood-vessels in the cord and hemorrhages coming from that; so this case, in which there was very-well-marked syphilis of the blood-vessels as well as of the pia, was interesting. The question came up in my mind as to whether there was present in this case a myelitis of syphilitic origin from occlusion of the blood-vessels preceding the hemorrhage. That is a question almost impossible, I think, to decide from the microscopical examination of the sections, because the secondary changes taking place in the nerve elements from cutting off the blood supply, which is what happens in cases of myelitis from syphilis, are practically the same that you get from hemorrhage. So whether there was a slight myelitis preceding this hemorrhage is almost impossible to say from examining the cord microscopically. I think, however, the history of the case throws the most light upon this subject.

In myelitis the development of the symptoms is not likely to be sudden; so I think in this case, because of the rapidity with which the symptoms developed, we probably have to do with real hematomyelia, hemorrhage into the substance of the cord, caused by the syphilis. This does not preclude that a hemorrhage may have followed another hemorrhage, causing marked increase of the symptoms; or, on the other hand, the hemorrhage may have taken place all at once, and then the nerve elements resisted a certain time, and later as they began to break down the symptoms became more marked. I think that probably this was what happened in this case; that the hemorrhage was chiefly at the first, and the symptoms developed more as the breaking down of the nerve elements became more complete. As happens very often, the hemorrhage was more marked upon one side of the cord than upon the other and extended up and down in the gray matter, where there is at least resistance to the spread of hemorrhage, for quite a distance, so that on looking at the cord with the naked eye it seemed to be wholly on the left side, but on examining with the microscope it was seen that the hemorrhage was quite extensive upon the right side of the cord also, but whether it extended across, or a small vessel on the right side broke, I cannot say positively; but such hemorrhages do extend across the commissure. The white matter of the substance of the cord is well known to have much more resistance to hemorrhages, and very often they are completely confined, or almost completely confined, to the gray matter, but in this case the white matter was practically destroyed, showing that the hemorrhage must have been quite extensive and severe to produce such destruction of the resisting fibres. It is interesting, too, that the symptoms were those of Brown-Séquard's crossed paralysis. That is due to the fact that the destruction is so much greater upon the left side than on the right. Later the paralysis appeared on the other side, whether from extension of the hemorrhage across or from breaking down of the nerve elements I cannot say.

Dr. Courtney: Dr. Larrabee's case is not only an interesting but an extremely valuable contribution to the study of spinal syphilis. By its onset six months after the initial lesion, it comes among the so-called precocious cases which are so interesting as showing how early the central nervous system may be injured by vascular breakdown. Ordinarily we look for manifestations of luetic infection primarily in the envelopes of the cord rather than in the cord proper, but the present case demonstrates the importance of the exceptions to the rule. Nonne has pointed out system degenerations of the cord as undoubted luetic manifestations, and the Brown-Séquard type — which the present case approximates — has been noted clinically. I doubt, however, if the present pathological study is not the first to be made in such a type. A noteworthy clinical characteristic of the usual meningo-myelitic complex in spinal syphilis is that, with the extreme exaggeration of the reflexes and, at times, the ankle clonus which are present, the muscle tone remains very low, hence contractures are most commonly absent. The striking contrast of this condition with that which usually obtains where the conductivity of the lateral columns is interfered with is a valuable diagnostic clue.

Dr. Smith: I would like to ask Dr. Larrabee how he explains the ascending degeneration in the posterior columns. Does he attribute that to an older lesion than this hemorrhage?

Dr. Larrabee: I do not know how to explain that. Perhaps Dr. Thomas will answer the question.

Dr. Thomas: I should think that was probably due to involvement of the posterior nerve roots. I should think that was a separate matter.

Dr. Smith: It seems to me that the results of microscopic examination are exceedingly interesting from another standpoint, namely, had the patient lived a little longer without his hemorrhage, he would have exhibited marked symptoms of tabes.

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[1] See page 352 of the Journal.

Dr. J. Bergen Ogden showed

A SPECIMEN OF URINE CONTAINING ALBUMOSE.

Dr. Ogden: I wish to show you this evening a urine of unusual interest in that it contains the very rare proteid albumose. Albumose, as you know, is normally present in the blood, being one of the products of digestion, but it is very rarely met with in the urine. It was discovered in this specimen of urine upon performing the heat test for albumin. The ordinary nitric-acid test was first performed, and showed a zone of albumin which was estimated to be between one-quarter and one-half of one per cent. In endeavoring to remove the albumin by heat in order to test for chlorides and sugar a very heavy precipitate was thrown down by gentle heat, and, upon boiling, the precipitate was found to almost entirely disappear; a slight turbidity, however, remained, due to the presence of a small amount of serum albumin. On cooling an abundant precipitate reappeared, showing, as is the rule, that the albumose had been converted into an insoluble form by the process of boiling.

This urine was passed by a man in the City Hospital on the service of Dr. F. H. Williams. He had, besides this phenomenon, a chronic diffuse nephritis, and some other conditions the nature of which we could not find out. The x-ray showed that there was something peculiar at the right apex, but whether it was a healed tuberculosis or a new growth was a question. Unfortunately we could get no autopsy, so that we are left in the dark as to the cause of the albumosuria.

This substance has been found in the urine in several instances. It was first discovered by Bence Jones in cases of osteomalacia. It was afterwards found by Kühne, Hoppeseyler, Virchow, Senator and others. Senator found it in tertiary syphilis, hemiplegia, double pneumonia, diphtheria and carcinoma. Dr. R. H. Fitz has recently reported two cases of albumosuria, one of which was suffering from myxedema, and the other from sarcoma of the ribs and sternum. It has recently been reported in other cases of sarcoma of the bones of the trunk. The moral of this display to-night is that the heat test for albumin should always be performed, since it is by this means that albumose is most readily detected. Having obtained a reaction suggesting albumose, other tests are then necessary to confirm its presence. It is my custom to first apply the nitric-acid test for albumin, and, if I get an appreciable quantity, to then apply the heat test after the addition of the proper amount of acetic acid (one drop to a third of a test-tube of urine of normal acidity). By this means I am able to readily detect anything more than mere traces of albumose.

Dr. R. F. Chase read a paper entitled

THE LOCAL TREATMENT OF PNEUMONIA IN CHILDREN.[2]

Dr. Nichols: I have been very much interested in the paper by Dr. Chase. When I was a student in Vienna, in 1866, the older methods for the treatment of pneumonia were still in vogue, methods which had been condemned and abandoned here, and I was very much surprised to see the first few cases of venesection in plethoric patients afford such immediate and decided relief. The poultice was still used, and, perhaps more frequently, spongeopiline, an admirable vehicle for the application of liniments, or counter-irritants, such as turpentine, designed to allay pain and dyspnea. Hyperpyrexia was controlled by cold applications or baths. The disuse of these various moist applications has seemed, like the abandonment of bleeding, largely a matter of caprice or fashion, and the experience of the reader certainly tends to strengthen the testimony as to their value.

Dr. Otis: Dr. Chase's limitation of the subject to the local treatment of pneumonia in children restricts us in the discussion of this common disease in which we have all had more or less experience. The consideration, however, of any detail of it cannot be without value and interest. In common with, I suppose, the majority of practitioners, I have not used poultices as a routine measure, but after the favorable evidence Dr. Chase has adduced in his paper one would feel more kindly inclined towards them. Dr. Fowler in the recent conjoint work upon "Diseases of the Lungs," by Godlee and himself, remarks, "Poultices are, it is true, somewhat out of fashion, but we have seen no reason to discard them, except in some cases in children, where their weight is an objection, as tending to impede the movements of the chest. Patients frequently express their appreciation of them, and we cannot remember to have heard a complaint against a well-made poultice."

I also believe that mustard and other counter-irritants to which Dr. Chase has referred have their value. Many of these local applications, as well as many drugs, we use more or less empirically, feeling from our experience that they are of value, although we cannot say exactly how they act. For example, one feels inclined to use the ice-bag in hemoptysis, although he does not feel sure that it is of any great value; it is at least doing one thing more which may aid in turning the scale favorably, and this, perhaps, may be one of the reasons which would prompt us to use poultices.

I would like to ask the reader if an examination was made regarding leucocytosis, and if, also, the pneumococcus was sought for in his cases.

Dr. Chase: In only several of the cases were examinations made for the pneumococcus, and none for a leucocytosis.

Dr. Smith: As the Vienna treatment of thirty years or so ago was referred to, it might be of interest to some of you to know that three years ago some of us who spent a year there saw the local treatment with ice that has been spoken of, and heard the matter of bleeding discussed pretty freely by Nothnagel, Neusser and some of the others. Bleeding has been entirely abandoned, as the former speaker said. Ice, however, is used very freely, the same as it is in the treatment of articular rheumatism. Ice is usually applied by sponging with ice-water and by ice caps to the head, and occasionally the patient is immersed in the cold bath at about 70° F. About all the internal treatment we saw given was digitalis, and the reason given for not resorting to bleeding in the cases was that the volume of the blood would be restored inside of twenty-four hours, and they could not see that the blood tension would be any diminished by reducing its volume, while with digitalis the tension is readily reduced.

Dr. Otis: Regarding the treatment of pneumonia in general, I remember an incident narrated to me by an eminent practitioner in another city, two cases of this disease occurring in his practice at the same time; he bled one and with the other he used abundant stimulation, saving both cases; one being a strong plethoric man and the other a weak one; if he had treated both in the same way he would have probably lost one, as he said. With regard to the use of digitalis, to which Dr. Smith has referred, there seems to be a great diversity of opinion in the profession. Some excellent practitioners are utterly opposed to its use, while others, equally eminent, consider it of great value in proper cases. Regarding the use of oxygen, I can only say that my experience with it has not been favorable; I have seen no appreciable benefit from it.

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[2] See page 348 of the Journal.

As to the use of nitroglycerine and the nitrites, I would call the attention of the Section to an exceedingly interesting paper by Dr. Andrew H. Smith, of New York, published in the *International Magazine* for July, 1892. In certain cases and in certain stages, where an over-distention of the nervous system exists, and where bleeding might seem to be indicated, he accomplishes the same results by the use of either nitroglycerine, nitrite of amyl or sodium nitrite. He suggests giving the sodium nitrite in two-grain doses every two hours, and supplementing this with nitroglycerine in doses of one one-hundreth of a grain as occasion arises.

Recent Literature.

Clinical Lectures. By G. A. Zacharin, late Professor Emeritus of Clinical Medicine and Director of the Therapeutic Clinic of the Imperial Moscow University, Honorary Member of the Imperial Academy of Sciences at St. Petersburg. Translated by A. Rovinsky, M.D., Boston. Boston: Damrell & Upham. 1899.

The above work is one of unusual character and deserves special recognition. It possesses decided originality, and although its English text shows here and there occasional peculiarities of language, inevitable in a translation by a foreigner, they are not such as in any sense to mar the work. It is remarkable only that the English rendering should be so strikingly good as it is. It has such merit in this respect as to entitle its translator to high praise. He seems to us to have rendered the profession a distinct service by putting at its disposal the work of a man who was one of perhaps the three or four most notable of the profession in Russia, and whose mind was enriched by the careful systematic training of Germany, and subsequently by a wide experience.

In the space of a review it is impossible to more than briefly note one or two of the personal details regarding Zacharin, which occur in the course of the translator's introduction. The following paragraph is taken as an example and gives a picture of the position of the doctor in Russia not so very long ago. It is quoted from one of the speakers at the Zacharin memorial meeting at Moscow:

"We all remember the time when the physician was not allowed to sit down in the presence of his social superiors, how some of us were only allowed to treat serfs or servants, how others served The Gentlemen and The Ladies, appearing every morning to inquire after Their Graces' health, for which they were paid by an occasional gift of flour, grain, fowls, and so forth. A physician was considered an accessory to the rich household, never as a necessity, and his labor, advice and time as trifling and superfluous."

The character, example and labors of Zacharin did much toward changing this condition and placing the physician more appropriately in the social scale.

The lectures contained in this publication deal with a large variety of diseases that belong to the field of internal medicine. In addition there are several chapters devoted to special subjects, which are in the form of short practical essays. Among them is one in which the various mineral waters of France and Germany, their uses, comparative value, and applicability to certain conditions are discussed in detail. This supplies a knowledge of the subject from both a scientific and practical point of view that is rarely found in general medical writings, and which is not always free from the charge, in special writings, of seeking some commercial advantage for interested parties.

The first three lectures, which are introductory, present a careful description of the methods of examination, and of arriving at the diagnosis of cases in a way that is of great value to the student, and is one of the most reliable and complete guides in this important matter that could be desired. It gives ample evidence of the painstaking and thorough workmanship of this admirable author. The methods set forth are very similar to those employed in the German schools of medicine, but there is in addition a distinct individuality, as indeed there is throughout the book, which makes one feel as though one were actually with the author and hearing him lecture.

Zacharin, unlike some of the German instructors, was not a pessimist in therapeutics, although far from being an over-zealous believer in the efficacy of drugs. He held to the *juste milieu* between credulous empiricism and the ultraconservative types of the practitioner. His personality — and it is an interesting one — appears throughout the lectures.

It is difficult to open the volume anywhere without finding something instructive, suggestive, or of practical value.

The manner in which it is presented to the English speaking public reflects much credit upon its translator and its publishers, and we recommend it cordially to the profession as a work well worthy of attentive study.

Records of Urinary Examinations. A convenient, practical method of keeping records of urinary examinations for future reference in hospital or general practice. Arranged by Harry Morell, M.D., C.M., Trinity University, Toronto. Hartford: J. B. Burr & Co. 1898.

This book consists of alternate white and yellow blanks for urinary report, so arranged that by the use of carbon paper two records may be taken simultaneously. One sheet, which is detachable, can be sent to the sender of the specimen, the other kept in the volume for reference.

The book is certainly well arranged for the use of physicians or laboratory workers.

Helmholtz's Brain. — We learn from the *Medical News* that Professor Hansemann has examined the brain of the late Professor Helmholtz. Its weight was 1,440 grammes (about 45 ounces), and the convolutions were extraordinarily complex.

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THE ELECTIVE SYSTEM IN MEDICAL EDUCATION.

THERE is no doubt that certain reforms in medical education are imminent, and it is almost equally certain that the changes are to be brought about in the line of greater liberality of choice in the medical curriculum. A modified elective system is altogether likely, in the near future, to take the place of the narrow and rigid course heretofore prescribed. This change is being forced upon our medical institutions through the simple facts of the growth of knowledge and the duty of the medical educator to cultivate special aptitudes in his pupils.

Three notable articles have recently appeared bearing on this subject, from men whose opinions are deserving of the most careful consideration. Bowditch's address on "Reform in Medical Education,"[1] before the American Society of Naturalists, we have already had occasion to refer to. In this address Dr. Bowditch has clearly pointed out that the tendency of growth of the medical curriculum has been by a process of accretion; as new subjects have risen into a place of practical importance they have been simply added to instruction already given. This has led to a prolongation of the medical course from three to four years in our better medical schools. Such a method of growth, as Dr. Bowditch suggests, is clearly self-limited, and it is further evident that the limit is already reached, and that mere crowding of the curriculum is neither desirable, nor, in fact, possible, without a fatal sacrifice of thoroughness. The alternative is evident and inevitable: we must have elective studies in our schools, if we are to do our best by the student. Or, to use Dr. Bowditch's own words: "It seems, therefore, to be evident, that in arranging a course of medical study a distinction must be made between those subjects which it is *essential* that *every* student should know and those subjects which it is *desirable* that *certain* students should know; that is, between those things of which no man who calls himself a physician can afford to be ignorant and those which are important for certain physicians but not for all; in other words, provision must be made both for required and for *elective* studies."

Dr. Bowditch comes out squarely with his belief in a partial elective system, modified to meet the peculiar ends of medical education, but still an elective system.

At the same meeting Dr. W. T. Porter[2] read a paper dealing with the teaching of physiology in medical schools, and with improved methods of teaching in general. He scores severely present methods, and adds his testimony to the fact that knowledge has grown too broad to permit of every man's training being cast in the same mould. He must specialize, both in justice to himself and to his subject: "The force now making for reform is irresistible. It is nothing less than the conviction that the mass of knowledge in every department of medicine is grown so huge as to overwhelm both professor and student. The only refuge lies in a thorough mastery of the scientific method. The medical student must acquire power rather than information."

The latest contribution to this all-important subject is a paper in a recent number of the *Philadelphia Medical Journal* by Mall, on "Liberty in Medical Education." Mall, also, admits no alternative. In his opinion, a greater liberty of choice is absolutely demanded, if we in America are to hold a place of dignity in the field of medical education. Throughout, the paper is full of the best spirit of intelligent radicalism, and should be read by all interested in the problems of medical education. Statistics are adduced showing the gradual development of medical schools in the United States, from which it appears that seventy colleges require courses extending over four years. Fourteen of these have sessions of eight months each, and eight have sessions of nine months. Although the general admission requirements have tended to increase during the last few years, as yet but one institution requires a preliminary college education with a college degree, an example which other medical schools are about to follow.

Mall does not consider it advisable to prolong the medical course beyond four years, and sees but one remedy, which Bowditch has already suggested, namely, greater liberty in the choice of studies, as for years has been the custom in the leading medical schools of Europe. His plan as roughly outlined is to require an entrance examination, to be followed by at least two years' study of the fundamental branches; then an intermediate examination, preceding at least two years' study of the practical branches, this to be followed by a final examination leading to the degree of Doctor of Medicine. In addition to a required list of subjects, the greatest possible latitude should be allowed the student in the selection of his electives. We cannot do better than quote in part Mall's views as he has himself expressed them:

> We all know that students are very unequal in ability, as well as in capacity for work, and why should they all

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[1] See Journal, vol. cxxxix, No. 26.

[2] Loc. cit.

pursue the same course of study? It is certainly very injurious for students to take again courses with which they are familiar, feeling at the time that they do not grow from day to day. Furthermore, it is not beneficial to the true student to study with a whip over him, and we know only too well that this weapon is more often used by a poor instructor upon a good student than by a good instructor upon a poor student. If we had a liberal elective system the student would know why he takes a course, and under this condition would profit much more by it. . . . Do we, with our obligatory methods, accomplish as much? I think not. We cast out the weak and disgrace them, the mediocre continue along the trodden path, but the strong are retarded. We do wrong when we disgrace the weak, and it is our duty to develop the strong. It is poor logic and begging the question to assert that the German student develops better under the banner of liberty than the American would. It is not difficult to obtain overwhelming authority in favor of liberty in higher education; it is only degrading to our profession in America to assert that our students are not worthy of it. As long as this continues, medical education in America, in spite of the advance it has made during the last twenty-five years, will remain at its present low level in the eyes of the educators of the world.

Mall has worked out a scheme based upon a tabulation of statistics, and finds that what we are at present attempting to do is to crowd eight or ten years' work, if it were properly done, into four years. The figures are convincing; we refer the interested reader to them, if he be sceptical.

There can, we think, be no question that the conservatism which has impeded medical education perhaps more than other branches is about to yield to a spirit of liberality, and that we may look forward to changes in the near future which will permit the student to develop to the utmost his own individuality and thereby lead to the best results for the community at large. This end can be attained only through a wise freedom in the years devoted to medical education.

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MEDICAL NOTES.

The Chair of Otology in Vienna. — The two chairs in otology at the University of Vienna, formerly held by Professors Gruber and Politzer, have been united into one, with Professor Politzer as incumbent, Professor Gruber having retired.

Congress of Life Insurance Physicians. — The first international congress of physicians connected with life insurance companies will be held at Brussels from the 25th to the 30th of next September. All Europe and the United States will be represented at this congress, which proposes to establish universal formulas for the examination of persons desiring to be insured.

Dr. Guiteras to Study Tropical Diseases. — We learn from the *Medical Record* that Dr. John Guiteras, formerly president of the United Cuban Clubs of Philadelphia, and Philadelphia delegate to the Cuban Junta in New York, will, on retiring from the chair of pathology in the University of Pennsylvania at the end of the present collegiate session, go abroad for a year and make a special study of tropical diseases, after which he will settle in Havana and engage in the practice of medicine.

Increase of Medical Men in France. — The statement is published that the census of persons practising medicine in France showed, at the beginning of the year 1899, a number of 17,735; at the beginning of the year 1898, 15,984, thus showing an increase for 1899 of 1,751. This is of interest, in view of the fact that the general population is increasing very slowly, and, on the whole, disease is decreasing, owing to improved sanitation and prophylaxis in general. It should, however, always be remembered that there are now many other fields for the educated physician than merely that of practice, and that these opportunities are increasing year by year.

Color-blindness in Railway Employés. — It is reported in the *Lancet* that 3,201 employés on the Victorian railways, Australia, have been examined by the medical officers, and it has been found that defects of sight, and especially color-blindness, are not so prevalent as was supposed when the sight testing investigation was instituted; 91.3 per cent. passed the examination.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, April 12, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 43, scarlet fever 20, measles 131, typhoid fever 19, small-pox 4.

Middlesex South District Medical Society. — The Middlesex South District Medical Society has just published, under the direction of Dr. Walter Ela, its treasurer, a pamphlet containing the by-laws, officers and members of the Society, with addresses.

NEW YORK.

The Hours of Labor for Drug Clerks. — On April 6th the Assembly at Albany passed the Maher Bill, fixing the hours of labor of druggists' clerks in the city of New York so as not to exceed ten hours on week days, excepting Saturdays, twelve hours on Saturdays, and six hours on Sundays. One section of the bill provides that no proprietor of a pharmacy shall require or permit a clerk to sleep in such pharmacy, or in any store room or laboratory connected therewith, with the qualification that this does not prohibit the sleeping in any other room adjoining such pharmacy, provided that such room is properly ventilated and complies in all other respects with the sanitary regulations of the City Board of Health. In the debate on the bill Mr. Maher explained that the present act was free from the objections of the one having the same object passed by the Legislature last year, which had caused its veto by the mayor.

Dr. Nelson H. Henry, who spoke in opposition to its passage, stated that nine-tenths of the drug clerks were opposed to the bill, and that not a single drug clerk had appeared before the committee in advocacy of the measure. This bill has been the object of considerable agitation for some months, and at one of the meetings held in regard to it the secretary of the "Drug Clerks' League for Shorter Hours" made the statement that in the city of New York during the past four years thirteen drug clerks had committed suicide and seven others had attempted it. He also said that in 1897 there were thirteen deaths reported in the city from accidental poisonings through mistakes in drugs. This, however, he contended, represented but a small proportion of such poisonings, as he had been informed by Dr. Hoeber, at that time coroner, that for every death officially known to have been caused by mistakes in drugs five were hushed up.

Death of Dr. William Vissman. — Dr. William Vissman, a New York pathologist of reputation, died on March 29th at Morristown, N. J., from Bright's disease, in the thirty-fourth year of his age. He was a native of Louisville, Ky., and was graduated from the Louisville Medical College, and subsequently from the University of Berlin, Germany. After coming to New York he became an instructor at the Polyclinic, and was also appointed pathologist to the Montefiore Home for Chronic Invalids.

The Polyclinic Exempted from Taxation, etc. — Among other bills that have been passed by the Assembly are the following: Exempting from county and municipal taxation the property of the New York Polyclinic Medical School and Hospital; to secure proper sanitary conditions and proper ventilation in public buildings and school-houses throughout the State; creating a State Board for the examination and licensing of embalmers.

An Appropriation for Craig Colony. — In the Senate a bill has been passed appropriating $100,000 for the support of the Craig Colony for Epileptics, and another permitting surgeons who served in the recent war with Spain to practise medicine in the State of New York without passing the examination prescribed by the State Board of Medical Examiners.

A new Open-air Gymnasium. — At a meeting of the Executive Committee of the Outdoor Recreation League held April 7th it was voted to appropriate $1,000 for the immediate fitting up of a gymnasium and playground for school children at the William H. Seward Park, which is located on Hester Street, in the heart of the east side tenement district. A committee was also appointed to make arrangements for the second annual opening, about the first of July, of the League's Camp on Long Island Sound, at Pelham Bay Park. During its first season, last year, the camp was a great success.

Small-Pox in a Tenement House. — Some excitement has been caused in the Borough of the Bronx by the discovery that there had been a case of small-pox in a tenement house, occupied by twelve families, for three weeks without the nature of the disease being known. No physician, apparently, had been in attendance, and the existence of small-pox was unsuspected until April 3d, when Dr. E. M. Raynor, who lives in the neighborhood, was called in. He at once reported the case to the sanitary superintendent of the Borough, and the patient, a lad seventeen years old, was removed to the Hospital for Contagious Diseases, while prompt measures were taken to prevent a possible spread of the disease.

The Free Home for Incurable Cancer. — "The Free Home for Incurable Cancer," organized and conducted by Mrs. Rose Hawthorne Lathrop for the benefit of the poor, has just purchased for $15,000 a brick house on Cherry Street which will afford accommodations for twenty patients. In the small house on Water Street, where the Home is now located, there is room for only five patients.

Death of a Centenarian. — On April 7th Catharine Strain died at Syracuse, N. Y., at the reputed age of one hundred and seven years.

Death of Dr. Cheesborough. — Dr. Nicholas Cheesborough, formerly of New York, died in Summit, N. J., on April 6th. He was born in Stonington, Conn., and was seventy-eight years of age. After practising in New York City for some years he removed, in 1869, to Hoboken, where he continued to practise until five years ago, when he retired.

Death of Dr. Entler. — Dr. George F. Entler died at his home at Oneonta, N. Y., on April 3d, at the age of forty-nine. He had been surgeon for the Delaware & Hudson Railroad Company for twenty-five years.

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Miscellany.

F. W. BRIGHAM, M.D., M.M.S.S.

Dr. Franklin Whiting Brigham, of Shrewsbury, Mass., who died on February 28th, and whose death was noted in the Journal of March 9th, was the son of Dr. Adolphus Brigham, of Shrewsbury, and was born there in 1841. In his time his father was known for miles around as "the Doctor of Shrewsbury," and the same characterization might with equal verity have been applied to the son. He was educated in the schools of his native town, and later in the Leicester Academy, from which he graduated in 1859. After spending a few months at Yale College he entered the Harvard Medical School, from which he was graduated in 1865. In 1862 he served as assistant physician at the State Almshouse in Tewksbury. In 1863 he entered the United States Navy as acting assistant surgeon, and was assigned to duty on the United States blockading steamer, *Mount Vernon*, off the coast of North Carolina, and later was transferred to the *Kanowha*, off Mobile, under Commodore Farragut, serving nearly two years. After his graduation he came to his native town and has since that time, with the exception of two or three years, about 1878–80, made Shrewsbury his home. He was twice married, first to Miss Alice Bates, of Providence, R. I., who died soon after their marriage, and later to Miss Sarah Lewisson, of Worcester.

Dr. Brigham was a practitioner of excellent repute in his native town and his advice in consultation was widely sought throughout Worcester County. In his daily round of practice he visited a large number of the towns surrounding Shrewsbury, and he was frequently called to Worcester in consultation.

He was a member of the Massachusetts Medical Society, and for several years was president of the Worcester District Branch.

Although he never held public office, his advice and opinions were influential in the affairs of his native town, and he was active in securing for it a public library, as well as in other charitable and philanthropic enterprises.

Dr. Brigham's father became a subscriber to the Journal in 1827, and from that time to his son's death, or seventy-two years, the subscription was continued by father and son.

Dr. Brigham's sudden and unexpected death resulted from pneumonia, his illness lasting less than twenty-hours.

◆

CLASSIFICATION OF CAUSES OF DEATH.

A pamphlet containing an exposition of the Bertillon classification of causes of death has been issued by the American Public Health Association. This association, comprising the sanitary officers of Canada, Mexico and the United States, unanimously recommended the general adoption of this system for mortality reports at its last meeting, as did also the Conference of State and Provincial Boards of Health of North America. The system is used in France and is making progress in Europe and in South America. It is hoped that it may meet with general adoption all over the world in time to begin the mortality statistics of the next century on a uniform basis. To this end, an International Commission of Revision, representing all of the countries desiring to employ the classification, will meet in Paris at the time of the International Congress of Hygiene and Demography in 1900. The several National Commissions constituting this body are engaged in ascertaining the wishes of the registrars and users of mortality statistics of their respective countries in regard to the changes which shall be made in the present form, and the present pamphlet is issued chiefly for this purpose. It will be sent, free of expense, to all persons desiring it, and the advice and suggestions of all sanitarians, pathologists, statisticians, and others interested in the subject of statistics of causes of death are earnestly solicited. Requests for the pamphlet and for other information on the subject may be addressed to Dr. Cressy L. Wilbur, Secretary of the U. S. Commission of Revision, Lansing, Mich.

◆

DR. OSLER'S ADDRESS ON TYPHOID FEVER.

Referring to Dr. Osler's recent address on the Problem of Typhoid Fever in the United States, before the Medical Society of the State of New York, the *New York Medical Journal* remarks editorially:

"The address reminds us, in the first place, of some things we are too apt to forget — the brilliant labors of Nathan Smith in the study and portrayal of typhoid fever in the early part of the century, and those of Elisha Bartlett, James Jackson, Jr., W. W. Gerhard, George C. Shattuck, Alfred Stillé, and Austin Flint, in this country, and Sir William Jenner, in England, at subsequent periods. Speaking of Nathan Smith's Practical Essay on Typhous Fever, published in 1824, Dr. Osler says he rereads it at intervals, each time with increasing respect for the author's sagacity. 'There is,' says Dr. Osler, 'more strong sane sense in his booklet of eighty-five pages than in anything that had appeared on "the slow nervous fever" since Huxham. It is most refreshing to turn from contemporary treatises on fever in English, French, and German to this clinical masterpiece. Happy the patient who fell into the hands of the old founder of Dartmouth Medical School and the first professor of medicine at Yale! With but little modification his section on treatment might be transferred to one of our year-books as the freshest and the best.'

"The American medical profession may justly look with pride to the pioneer work it did in elucidating the subject of typhoid fever, but another picture, one by no means so pleasant to contemplate, is shown further on in Dr. Osler's address — that, namely, of the almost complete disregard shown by the American people in their collective capacity of the labors of American physicians of our own times to stamp out the disease by cleansing the soil and purifying the drinking-water. Our shameful hygienic shortcomings are eloquently shown up in Dr. Osler's address, and we hope that his appeal will not fall on barren ground."

◆

THERAPEUTIC NOTES.

At a meeting of the Hamburg Medical Society,[1] Dr. Hahn presented records of two cases of eczema of the foot, one of four, the other of two, years' duration, which, although subjected to a great variety of treatment, always tended to recur. Hahn finally subjected them to the action of the Röntgen (x-) rays, with the result that they were cured permanently. In one case the fourth application was followed by a slight reaction, as a result of which the healed surface showed a hard and somewhat raised cicatrix; in the other the cicatrix was smooth and soft.

As the yellow salve used in ophthalmology is not stable, Dr. Fritz Schauz[2] recommends the following:

℞ Hydrarg. oxid. flav. . . . . gr. ii to gr. x
Adeps lanæ } āā . . . . ʒ ss
Aquæ destil. }
Vaselini albi ad . . . . ʒ ii
M. A. D. in olla nigra. Sig. Use as an eyewash.

This salve has the following advantages: It holds the oxide of mercury in the finest subdivision possible; it is not decomposed either by the action of light, nor by that of fatty acids, and it acts at the same time as a cooling salve, thus relieving the itching and the sensitiveness to be met with in many diseases of the eye.

Simionesen[3] calls attention to the slightly appreciated fact, noted formerly by Vialloli and Türbinger, that a prolonged use of arsenic is liable to result in sexual impotence, or even in the total loss of the sexual appetite; a fact of great importance for dermatologists who use the drug so extensively. In his case a young man (who, by the way, had a gonorrhea five years ago, from which he was completely cured) had been taking for some time Fowler's solution in 20–25 (!?) drop doses after meals (for malaria), when he observed a gradual weakening of the erectile power, and finally complete impotence. Everything else (including the urine) being normal, the author ascribed the condition to arsenic, and, as a matter of fact, the discontinuance of the drug, followed by a resort to tonic treatment and hydrotherapy, soon restored the patient to his normal condition. The author advises care in the employment of this drug, which in small doses exerts an effect directly opposite to the one described above.

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[1] Deutsche med. Woch., No. 51, 1898.
[2] Klin. therap. Woch., No. 34, 1898.
[3] Bulletin Géneral de Thérapeutique, 15 Décembre, 1898.

N. Th. Talmachoff[4] highly recommends strychnine in doses of $\frac{1}{60}$ grain for constipation in pregnant women. The drug is also a good prophylactic in forestalling weak uterine contractions during labor. The author never observed any unpleasant after-effects in the use of strychnine in the above-named doses.

For Vaginismus.[5] —

℞ Cocainæ hydrochlor. . . . . . gr. i to ii
Butyri cacao . . . . ʒ i
M. Et ft. suppositorium.

or,

℞ Pulv. opii } āā . . . . gr. ¼
Ext. bellad. }
M. Butyri cacao . . . . ʒ i

Correspondence.

SO-CALLED "SPONTANEOUS" COW-POX.

Mr. Editor: — The following extract from the *Boston Transcript* of last Saturday deserves more than a passing comment:

> CASE OF COW-POX FOUND IN CANADA?
>
> "Montreal, April 8th. — The Health Department of Montreal believe they have discovered a case of *genuine spontaneous small-pox* in a cow at a small place called Cote St. Michael, a suburb of Montreal. Scientific tests are to be made to-day to place the matter beyond peradventure, and if, as Dr. Laberge, chief of the department, believes, this should prove to be a genuine case of spontaneous cow-pox, the discovery would be one of considerable scientific interest as well as being a source of profit to the owner of the animal. No case of the kind has been discovered for fifty years past, *the last one on record being at Passy, France;* and as the vaccine generated from those cases has become *constantly attenuated by its cultivation*, the owner of this animal will have a rich thing in propagating vaccine lymph. This will no doubt compensate the habitant for the fact that he has been prohibited from selling the milk of his cows."

The medical errors in the foregoing statement are worthy of notice. First, as to the use of the term "spontaneous" in connection with infectious diseases. If modern medical science has demonstrated anything within the past half-century, it is to the effect that infectious diseases propagate themselves, and do not arise *de novo*. One may as well apply the term "spontaneous" to an oak or an elm, as to cow-pox or any other pox. All of the poxes arise from antecedent cases.

Second, "The last on record being at Passy, France." This was in 1836. A more absurd misstatement could scarcely be made. As a matter of fact there is scarcely a single country in which they have not been reported in considerable numbers from that time to the present.[1] The writer visited and examined at least twenty such cases in six different towns, within eight miles of his present residence, in herds of milch-cows, during the small-pox epidemics of 1872–1873 and 1881, and tested them in several instances by vaccinating the same animals subsequent to recovery from the first attack, the vaccination in each instance proving ineffective. In one of these instances, which occurred at the village of North Saugus, Mass., a young lad who milked one of these infected animals became infected, and had the characteristic appearances upon the thumb and forefinger of one hand, which are described in Jenner's works. The term "only case on record in America" has become a cheap method of advertising, among vaccine producers, as though proprietary rights in infectious disease were a possibility. It is only a few months since a vaccine firm in Pennsylvania promulgated the fact that they also had discovered the "only authentic case."

Third, "The vaccine generated has become constantly attenuated by cultivation." This statement also bears the marks of error, since there have been a considerable number of instances not only in other countries but in America where vaccine lymph has been transmitted through series of several hundred animals, for a period of twenty-five years or more, and the product of the last of the series was quite as active, and produced the typical phenomena which were also observed in the lymph obtained from the first of the series.

Cow-pox may be produced in the cow by three methods:

(1) By inoculation with variolous matter from a case of variola.

(2) By vaccinating with lymph from the arm of a child (retrovaccination).

(3) By vaccinating with lymph from one of an artificially vaccinated series of animals.

The first method is difficult and the two latter are easily accomplished. This being true, there is no necessity for searching among dairies for so-called "spontaneous cases" in order to renew the *stock*. Much greater good can be accomplished by following out the lines of progress made by the German and Belgian authorities in the production of glycerinated lymph; the slaughter of all animals immediately after its collection in order to ascertain by autopsy their actual freedom from disease before issuing the lymph; and the collection of the lymph at a period not later than the fourth or fifth day after its insertion.

Sam'l W. Abbott, M.D.

STATE BOARDS OF REGISTRATION AND MEDICAL SCHOOLS.

Cambridge, Mass., April 3, 1899.

Mr. Editor: — The comments on the annual report of the Board of Registration in Medicine, as presented in the issue of the Journal of March 30th, are most excellent as showing in no inconsiderable measure the character of the attainments of the applicants for practice. A review of the article referred to, as well as a careful study of the various reports as offered by the Board, discloses the fact that the work inaugurated in 1894 and carried on since that date has been productive of far-reaching and beneficial results.

Too much credit, therefore, cannot be given to Dr. Harvey and the other members associated with him on the Board for what has been accomplished. All the doings of the Board to meet the important end seem to have been characterized by a spirit of fairness, justice, and an unfliching integrity. There is, however, one statement in the report which needs to be corrected. The mistake occurs in connection with the mention of the fact that 38 per cent. of the class examined were refused registration and that "seventy of the class were graduates from medical schools considered reputable, nearly all being recognized by the American Medical Association."

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[4] Vratch, xix, 1898, No. 41.

[5] Labadie-Lagrave: Bull. Gen. d. Therap., 15 Décembre, 1898.

[1] See Wood's Reference Hand-book, vol. 7, p. 510.

In order to correct the misapprehension it is necessary to say that the members of the American Medical Association consist of accredited delegates appointed from permanently organized State medical societies and such county and district medical societies as are recognized by representation in their respective State societies, and from the Army, Navy and Marine-Hospital Service of the United States. Members by application consist of such members of the State, county, and district medical societies entitled to representation in the Association as shall make application for admission in writing, accompanying the application with a certificate of good standing signed by the president and secretary of the State or county society.

Members by invitation consist of practitioners of reputable standing from sections of the United States not otherwise represented at the meeting after an introduction from and being vouched for by at least three members. Members by invitation hold their connection with the Association until the close of the annual session at which they are received.

It is no part of the function of the American Medical Association to extend recognition to medical colleges or schools. It is true that at the meeting in Denver, 1898, a vote was passed that no professor or other teacher in, nor any graduate of, any medical college in the United States which shall after January 1, 1899, confer the degree of Doctor of Medicine, such degree being on any condition below the published standard of the Association of American Medical Colleges, will be allowed to register as either delegate or permanent member of the Association. Even by this vote it will be seen that delegates and permanent members can be made only by appointment and recommendation by the regular State societies.

The American Medical Association receives delegates only from the various State societies that conform to its code of ethics. The Association in admitting delegates relies on the good faith and honor of the State or county society from which they are sent. If the Association has admitted to its fold incompetent persons it has been owing to the fact that the State society has been remiss in its obligation.

Though the Association has never discriminated in favor or against any regular medical college, it has, nevertheless, been active in endeavoring to raise the standard of requirements for admission to practice. It is not to be denied that some of the various State registration boards have in a general way sought to obtain knowledge of the character of different schools and after doing this have listed, so to speak, or ticketed such institutions as good or worthy of recognition. A similiar course has been attempted by a State society or societies. The defects of such a mode of procedure are well shown by the fact recorded by the Registration Board, that 38 per cent. of the class taking an examination were refused registration. Seventy of the class were graduates of medical schools considered reputable; and one of the schools, sending a contingent of forty for examination, had eleven failures.

As already stated, praise should be given to our State Registration Board for the valuable work it has accomplished. It is, moreover, to be hoped that soon all the other State registration boards and the State societies that may send delegates to the American Medical Association or to other great humanitarian bodies will see to it that every applicant who is to be admitted to practice be allowed to do so only after passing a full written and satisfactory examination, and not by virtue in the least of any supposed so-called recognition of the institution from which he comes.

If thorough, practical examinations are to continue to be dispensed with on account of the perfection supposed to belong to medical colleges generally, it would be far better that all authority given to such institutions for conferring degrees be speedily revoked.

Augustus P. Clarke, M.D.

METEOROLOGICAL RECORD

For the week ending April 1st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...26	29.75	30	36	21	100	55	78	N.E.	N.W.	18	15	N.	O.	23
M..27	30.17	35	41	29	55	66	60	N.W.	S.E.	12	6	C.	F.	
T...28	29.98	35	38	32	82	100	91	S.E.	E.	8	22	O.	R.	64
W..29	29.23	42	54	29	92	49	70	W.	S.W.	18	22	O.	C.	.32
T...30	29.80	34	40	29	48	39	44	W.	W.	26	10	C.	C.	
F...31	29.71	36	41	31	95	76	86	N.E.	S.	7	8	R.	O.	.10
S....1	29.80	40	44	35	48	48	48	W.	W.	18	12	C.	C.	
☞	29.78	36	42	30	74	62	68			15	14			10

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, April 1, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1262	423	9.20	20.40	1.04	.48	3.52
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	504	128	16.12	11.59	2.85	8.17	2.66
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	198	55	9.00	18.00	1.00	.50	1.50
Baltimore . .	506,389	223	63	5.40	10.35	.45	—	3.60
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	99	30	—	—	—	—	—
Washington .	277,000	118	29	15.30	12.75	.85	2.55	.85
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	62	15	11.27	20.93	—	1.61	1.61
Nashville . .	87,754	—	—	—	—	—	—	—
Charleston . .	65,165	34	3	5.88	5.88	—	5.88	—
Worcester . .	108,240	42	10	—	16 66	—	—	—
Fall River . .	95,919	46	19	8.68	13 02	8.68	—	—
Cambridge . .	89.724	19	7	10.52	5 26	5.26	—	—
Lowell . . .	88,641	36	11	2.77	40.62	—	—	2.77
Lynn	66,703	20	4	5.00	15.00	—	—	—
New Bedford .	66,340	29	15	6.90	3.45	6.90	—	—
Somerville . .	61.101	16	5	6.25	25.00	—	—	—
Lawrence . .	57,263	18	14	13.33	13.33	—	—	6.66
Springfield . .	56.501	29	6	17.25	6.90	—	10.35	6.90
Holyoke . . .	43,424	16	6	—	12.50	—	—	—
Brockton . .	37,278	7	2	—	28.56	—	—	—
Salem. . . .	36,883	8	2	12.50	12.50	—	—	12.50
Malden . . .	34,613	7	3	14.28	—	—	—	—
Chelsea . . .	33,468	15	2	13.33	—	—	—	—
Haverhill . .	32,022	8	—	12 50	12.50	—	—	—
Gloucester . .	30,589	2	2	—	—	—	—	—
Newton . . .	29,716	—	—	—	—	—	—	—
Fitchburg . .	29,438	7	4	14.28	28.56	—	9.09	—
Taunton . . .	28,167	9	2	11.11	22.22	11.11	—	—
Everett . . .	25,338	6	—	—	—	—	—	—
Quincy . . .	23,549	13	3	6.79	6.79	—	—	6.79
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	6	—	—	—	—	—	—
North Adams .	20,971	4	2	—	—	—	—	—
Chicopee . .	17,842	7	1	—	—	—	—	—
Medford . . .	16,511	3	1	—	—	—	—	—
Newburyport .	14,915	7	1	14.28	28.56	—	—	—
Melrose . . .	14,032	3	—	—	33.33	—	—	—

Deaths reported 2,906; under five years of age 863; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 308, acute lung diseases 470, consumption 311, diphtheria and croup 81, typhoid fever 61, diarrheal diseases 45, cerebro-spinal meningitis 40, scarlet fever 24, erysipelas 19, whooping-cough 19, measles 18, small-pox 1.

From cerebro-spinal meningitis New York and Philadelphia 11 each, Washington 9, Boston 4, Baltimore, Providence, Lynn, Chelsea and Newburyport 1 each. From scarlet fever New York

16, Philadelphia 3, Washington 2, Boston, Baltimore and Cambridge 1 each. From erysipelas Boston 4, New York 2, Philadelphia, Somerville, Haverhill and Brookline 1 each. From whooping-cough New York 11, Pittsburg 3, Philadelphia, Boston, Washington, Providence and Chelsea 1 each. From measles New York 12, Boston 2, Washington, Lawrence, Malden and Fitchburg 1 each. From small-pox Baltimore 1.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending March 25th, the death-rate was 23.1. Deaths reported 5,061; acute diseases of the respiratory organs (London) 604, whooping-cough 154, measles 91, diphtheria 81, diarrhea 31, fever 20, scarlet fever 20.

The death-rates ranged from 13.2 in Cardiff to 33.4 in Manchester; Birmingham 22.1, Bradford 21.6, Croydon 19.6, Gateshead 19.6, Hull 19.4, Leeds 25.0, Leicester 19.8, Liverpool 26.1, London 23.2, Newcastle-on-Tyne 19.4, Nottingham 20.5, Portsmouth 20.8, Sheffield 23.8.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 8 1899.

J. R. Waggener, surgeon, ordered to the "Glacier" for duty in connection with marine battalion, and on arrival at Manila, ordered to duty in charge of the Naval Hospital, Cavite, P. I.

J. D. Gatewood, surgeon, detached from the Havana Naval Station and ordered home to wait orders.

L. B. Baldwin, surgeon, ordered to the Key West Naval Station.

R. O. Marcour, assistant surgeon, detached from the Key West Naval Station and ordered to the Havana Naval Station.

G. A. Bright, medical director, detached from the Naval Hospital, Washington, D. C., April 8th, and ordered home to wait orders.

D. Dickinson, medical inspector, ordered to the Washington Navy Yard, April 8th, for duty at Naval Hospital, temporarily.

R. C. Persons, medical inspector, detached from the Naval Hospital, Cavite, P. I., and ordered to the "Olympia."

A. F. Price, medical inspector, detached from the "Olympia" and ordered home to wait orders.

H. D. Averill, assistant surgeon, discharged April 5th.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING APRIL 6, 1899.

Godfrey, John, surgeon. Bureau order of March 21, 1899, directing Surgeon Godfrey to proceed to Port Huron, Mich., for special duty, revoked. April 3, 1899.

Banks, C. E., surgeon. Detailed as inspector of unserviceable property in the Hygienic Laboratory, Washington, D. C. March 27, 1899.

Peckham, C. T., surgeon. To proceed to New Orleans, La., for special temporary duty. April 2, 1899.

White, J. H., surgeon. Relieved from duty at the Immigration Bureau, New York, N. Y., and directed to report at Washington, D. C., for duty. April 1, 1899.

McIntosh, W. P., passed assistant surgeon. Relieved from duty in Hygienic Laboratory, Washington, D. C., and upon completion of duties as recorder of the Board of Examiners at New York, N. Y., to rejoin station at Louisville, Ky. March 25, 1899.

Magruder, G. M., passed assistant surgeon. To proceed without delay to Port Tampa, Fla., and await orders. April 2, 1899.

Wertenbaker, C. P., passed assistant surgeon. To report at Bureau for special duty. April 4, 1899.

Nydegger, J. A., passed assistant surgeon. To proceed to Wilmington, N. C., for special temporary duty. April 5, 1899.

Thomas, A. R., assistant surgeon. Upon completion of examination to determine fitness for promotion, to proceed to the Tortugas Quarantine Station and assume command of Service. March 30, 1899.

Cumming, H. S., assistant surgeon. Upon completion of examination to determine fitness for promotion, to proceed to the Cape Charles Quarantine and report to the medical officer in command for duty. March 30, 1899.

Von Ezdorf, R. H., assistant surgeon. To inspect unserviceable property at the South Atlantic Quarantine Station. April 3, 1899.

Anderson, J. F., assistant surgeon. Granted leave of absence for thirty days on account of sickness. March 31, 1899.

Corput, G. M., assistant surgeon. To proceed to Mullet Key, Fla., for special temporary duty. March 27, 1899.

Dudley, D. E., sanitary inspector. To report to medical officer in temporary charge of the Tortugas Quarantine Station for special temporary duty. March 31, 1899.

Scott, E. B., hospital steward. To proceed to Savannah, Ga., for special temporary duty. March 24, 1899.

PROMOTION.

L. L. Williams, passed assistant surgeon, commissioned as surgeon, March 30, 1899.

APPOINTMENT.

S. C. de Krafft reappointed acting assistant surgeon, for duty at the port of Cambridge, Md. April 1, 1899.

APPOINTMENT REVOKED.

Department letter of March 11, 1899, appointing Oliver Stewart acting assistant surgeon at Port Huron, Mich., revoked April 4, 1899.

RESIGNATION.

Myron Northrup, acting assistant surgeon, resigned, to take effect March 31, 1899. April 4, 1899.

RESIGNATION.

Owen Copp, M.D., has resigned the position of superintendent of the State Hospital for Epileptics at Monson.

APPOINTMENT.

Owen Copp, M.D., has been appointed executive officer of the State Board of Insanity of Massachusetts.

SOCIETY NOTICES.

Suffolk District Medical Society. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, Wednesday, April 19, 1899, at 8 P. M.

At 8 o'clock. Short communications:

Dr. Arthur C. Jelly: "The Physician in Case of Contested Wills."

Dr. R. W. Greenleaf: "A Case of Post-febrile Delirium."

Dr. M. P. Smithwick: "How should Digestive Cases be Examined?"

At 8.45 o'clock. Dr. Henry Jackson, paper entitled: "Functional Heart."

H. F. Vickery, M.D., *Chairman.*
J. Bergen Ogden, M.D., *Secretary,*
Harvard Medical School, Boston.

American Orthopedic Association.—The thirteenth annual meeting of the Association will be held at the New York Academy of Medicine, 17-19 West 43d Street, May 31, June 1 and 2, 1899.

The Annual Dinner will be held on the evening of June 1st.

W. R. Townsend, M.D., *President.*

RECENT DEATH.

Seranus Bowen, M.D., M.M.S.S., of Roxbury, died April 7, 1899, aged fifty-nine years.

BOOKS AND PAMPHLETS RECEIVED.

Medical Education. The Physician in Practice. By Leo M. Crafts, BL., M D. (Harv.), Minneapolis, Minn. Reprints. 1898.

The Ætiology and Diagnosis of Empyema of the Accessory Sinuses of the Nose. By Jacob E. Schadle, M.D., of St. Paul, Minn. Reprint. 1899.

Dystocia due to "Accidental Hemorrhage," with Clinical Notes of Four Cases. By Stanley P. Warren, M.D., Portland, Me. Reprint. 1899.

Report on the Investigation of the Causes of Insanity and Tuberculosis at the Connecticut State Prison. By Edwin A. Down, M.D., Hartford.

Malignant Disease of the Kidney. Pelvic Suppuration, Procedure and Plan of Attack. By Byron B. Davis, M.D., Omaha, Neb. Reprints. 1898-99.

Clinical Report from the Winyah Sanitarium, Seventy-eight Cases of Pulmonary Tuberculosis Treated and Discharged in 1898. By Karl von Ruck, B.S., M.D. 1899.

Reports of the Trustees and Superintendent of the Butle Hospital for the Insane, Presented to the Corporation at it Fifty-fifth Annual Meeting, January 25, 1899.

Experimental Studies on the Preparation and Effects of Antitoxins for Tuberculosis. By E. L. Trudeau, M.D., and E. R. Baldwin, M.D., Saranac Lake, N. Y. Reprint. 1899.

Eleventh Annual Report of the Methodist Episcopal Hospital in the City of Philadelphia, 1897-98. Incorporated February 14, 1885, dedicated and opened for patients April 21, 1892.

A Leg-Apparatus for Spastic and Paralytic Cases. Play as a Factor in Development. The Hygiene of Instruction in Elementary Schools. Bed Posture as an Etiological Factor in Spinal Curvature. By G. W. Fitz, M.D., Cambridge. Reprints. 1895-98.

Original Articles.

SIR BENJAMIN COLLINS BRODIE, BART.: A SKETCH.[1]

BY JAMES G. MUMFORD, M.D., BOSTON.

A YEAR ago, after publishing an essay on Sir Astley Cooper, I was asked to write something of Benjamin Brodie. I have done so, and the subject has lent itself pleasantly to the task.

Of Brodie I found soon that this generation knows little; he is read seldom by students and other readers of our medical literature, yet the man was in some ways a great man; not so great, doubtless, as Cooper, fifteen years his senior, but a striking figure in his time; as a teacher, sound and resourceful; as a writer, facile and instructive; as a physician, accomplished and successful; a man of the world, broad, lovable, forceful, cultured.

We say that great men in any walk of life must reflect the spirit of their times — and this was true of Brodie as of Cooper. The latter was the contemporary of Nelson, Wellington, Fox and Pitt; the former, of Peel and Palmerston, Sydney Smith and Macaulay. Though Brodie lived through the stormy days of the French Revolution, he does not belong, for us, to that age, but to the calmer era that succeeded, when Europe was being reconstructed, and the strenuous work of the soldier was giving place to the labors of the statesman and the philosopher.

Brodie was the finished product of his time. Society was being reorganized, politics were being purified, and the English people were being prepared for that great wave of altruism and social regeneration that we now know. Science, too, was taking its rightful place in the eyes of men who were beginning to appreciate the great truths taught by Hunter in the last century; and in all these revivals, with their changed conditions and new interests, Brodie took a most prominent and forward part. Not a hero or a genius, but an accomplished man of exceptional talents and catholicity of view; he won and held long the foremost place among English surgeons.

Benjamin Collins Brodie was born in 1783, and died in 1862, and therefore belongs entirely to this century, so far as his work in the world is concerned. Like many distinguished Englishmen, he was the son of a country clergyman. In his charming autobiography Sir Benjamin tells of his ancestry and boyhood; and the striking facts are these: that his father, a man of Scotch lineage, was a Whig in politics and a protégé of Henry Fox, the first Lord Holland, by whom he was presented with the living of Winterslow, in Wiltshire. There he lived always, and there his children were born and educated. He was the father of many sons and daughters, whom he himself taught; and being a man of broad culture for the time in which he lived, he taught them well and thoroughly. Latin, Greek, English, French, Italian were their studies; and upon such a foundation of the best literature his distinguished son builded. This was a studious, methodical, retiring boy, given to solitary rambles, and little addicted to the sports of the day, for which, indeed, his opportunities were small. "Thorough" was his motto, his opinions were his own.

He had eager physical vigor too, though he was small of stature and delicate of frame; and his patriotism flamed out in season. In 1798, when Napoleon threatened invasion, young Benjamin, with his two elder brothers, raised a company of one hundred and forty volunteers. He was commissioned ensign by the king. It was a fine, well-drilled and creditable body of recruits.

Such a boyhood was in the great surgeon's background; but beyond this he was fortunate in family connections, professional and others, which counted to him for good. His grandfather was the grandfather also of that Thomas, Lord Denman who was the advocate of the unhappy Queen Caroline, and Chief Justice of the King's Bench, later. His paternal grandmother was a daughter of a well-known physician, Dr. Samuel Shaw. One daughter of this lady married Dr. Denman, the Chief Justice's father. Dr. Baillie and Sir Richard Croft had married his first cousins. With such a connection, it is not surprising that young Brodie came to follow some branch of the healing art. He had no "call" for it, but as he wanted a professional career, and his brother Peter had preceded him to London and was studying for the bar, he turned to surgery as his vocation, — not medicine, for he held no university degree. This was in the year 1801.

Brodie was sent to London to study surgery. The choice was made by his father, not by himself. His studies were entered upon faithfully, but without enthusiasm. A long time he felt disinclined for such work. He disliked his fellow students; and this is a notable fact of his early professional days, that he disbelieved in "calls." In his autobiography he says some interesting things in that connection. He thought, always, that he should have done equally well in the church, at the bar, or in the civil service. To him it was all a question of thoroughness; of endeavor.

In the early days of medical study those things which offend all sensitive men were especially repugnant to him; and, above all things, he disliked his associates. Indeed, the average medical student of a hundred years ago seems to have been a sorry fellow. Those youths mostly were drawn from the lower middle classes; they had little education or breeding, and were a rough, hard-drinking, boisterous, uncouth crowd, not at all pleasing as comrades to the fastidious young Brodie, the highly cultivated clergyman's son, fresh from the kindly home circle of Winterslow parsonage. But there were compensations for this in other associates — social, rather than professional. Two young surgical friends he had indeed — Crawford and Lawrence — of whom he thought highly, and they lived to justify his regard; and in the world at large men interested him, and the friends he made among them came to mean much to him. This association of his professional life with the interests of the community was typical of Brodie throughout his career; indeed, the things the man did are much less important to us than what the man was. Such men, living in a community, set their stamp upon their profession.

Brodie's professional training followed the general lines familiar to all well-educated surgeons of his time. The first two years were given to anatomy, mostly; to chemistry, and to some little pharmacology picked up in a chemist's shop. Abernethy's lectures on anatomy were attended, and the school of a Mr. Wilson, who taught in Great Windmill Street. From the outset he was diligent and successful, we must believe — though he tells his own story very modestly — for he won the confidence and regard of his seniors early, and was made their associate and treated almost as an equal when little more than a youth. That period of his life is interesting, and to be dwelt upon if there were time. He did not come in contact directly with the great teachers of the day — John Hunter was recently dead, Cline and Astley Cooper were at Guy's Hospital; but in his second year of study he became a pupil of Everard Home, whose sister John Hunter had married, and so he came to inherit the tradition and the purpose of the Hunterian school.

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[1] Read before the Warren Club, March 23, 1899.

Mr. Home, afterwards Sir Everard Home, was surgeon to St. George's, and so it came about that to this famous hospital Brodie became attached early. There he served his apprenticeship, and there he worked as teacher and surgeon through the most active years of his long professional life. There he was two years as a pupil and six months as house surgeon, when he resigned to teach anatomy in Mr. Wilson's school.

So those four years constituted his work as a student pure and simple, and as a student he merits no special mention. He became interested, he was always industrious, he early taught and taught well. Anatomy and physiology engrossed him. There are no stories of extraordinary genius for surgery, nor of neglected opportunities and riotous living. He was an efficient, painstaking young fellow, *persona grata* to his superiors.

Brodie's professional life, after the student days, began in 1805, when he was twenty-one years old, and even then, for four years, or until he was twenty-five, he was occupied in hospital work, teaching, and assisting up to the year 1809. During more than half of this time he worked assiduously in the dissecting room and in teaching anatomy; what outside surgery he did was in the capacity of assistant to Sir Everard Home, — that work consisted in operating, and in investigations in human and comparative anatomy and physiology — pursuits which were then and for long afterward grouped together. Such studies were fascinating to the young surgeon, and it so came about that he became known to the professional public first as a physiologist rather than as an anatomist.

Then in 1808, at the age of twenty-four, he was appointed assistant surgeon to St. George's. This meant more than appears, for, owing to the frequent absences of Home, who left his patients to Brodie entirely, and to the army service of Gunning, the junior surgeon, a great amount of responsibility was thrown upon Brodie, and, for all practical purposes, he was acting as full surgeon to the hospital from the year 1808 onward until his retirement from all hospital work in 1840.

During those early years of preparation Brodie's father had died, leaving his large family in somewhat straightened circumstances. Mrs. Brodie, the widow, could live in comfort on her income, but could afford little aid to her sons in their struggles. However, they were all young unmarried men, with some start made, and so their careers were not at all interrupted. Indeed Benjamin was by that time supporting himself, practically — what with his lectures and his association with Home. He lived, indeed, in a small way at a lodging house in Sackville Street, and, as we know, it was not until 1809, in his twenty-sixth year, that he took a house of his own, in the same neighborhood, put up a doorplate, and began the practice of surgery in earnest.

Brodie practised medicine from 1809 until 1862, when he died — a period of fifty-three years. He was a successful man; he came to be the most notable surgeon of his generation; he was everywhere esteemed and honored; he won the highest prizes; he made some important contributions to science and to medical literature; he met with no reverses, and yet as a story his life lacks plot. It is simple, straightforward, uneventful, and for us points a moral only as it shows what one form of success means, and what sort of a man was this one — reputed the most notable surgeon, scientist and scholar combined that the first half of our century produced.

Let us quickly glance over the tale as it is told by Mr. Timothy Holmes,[2] and then return to look at Brodie as he was — at his personality, interesting and important; at his habits, his tastes, his methods, his friends; at that thing which we moderns are calling his *environment.*

In his first year of practice Brodie worked hard for small fees, took a few pupils and lectured on anatomy; from all of these sources his income was about £250 — a very good first year even for our more expensive days. In his seventh year, at the time of his marriage, his income was £1,530; in his fourteenth year of practice, when he was forty years old, it was £6,500, and in his twenty-fifth year of practice, 1834, when he was fifty-one years old, and at the high-water mark of income, it is stated to have reached £11,000, or something less than $55,000. This is interesting to a student of statistics. Astley Cooper made twice as much twenty years earlier, and some modern surgeons make twice as much. But Cooper was *facile princeps* among surgeons in 1815, and to-day operation fees are incomparably higher than they were in 1834, when a surgeon's income was made up from innumerable small fees and when operations were infrequent.

In 1809, then, Benjamin Brodie started out with a modest establishment at No. 22 Sackville Street, and sought the patronage of the public. If success is to be measured by pounds and shillings, Brodie was successful, as we have seen, but from the start he did much more than make money. His autobiography, which is the principal source of our knowledge of his early life, tells modestly of his physiological studies, which were inspired by the recent works of Bichat. This is what he did in the first two years: He wrote a paper on the "Dissection of a Fetus which had no Heart," and this made him a Fellow of the Royal Society in 1810. In the same year he delivered the Croonian Lecture "On the Influence of the Brain on the Action of the Heart and the Generation of Animal Heat"; he also communicated a paper on "The Effects Produced by Certain Vegetable Poisons." These papers won for him the Copley Medal. Of the award, the tale is told that one of the councillors said the medal had never before been given to so young a man; to which Wollaston answered that the author's youth was an additional reason why he should have it; at any rate, there was no further opposition.

About this time Brodie began the long-continued and serious work on "Diseases of the Joints," for which he is best known in surgical annals. Briefly he himself tells the story of how, as house surgeon, he had become interested in a case of what was called "spontaneous dislocation of the hip," due to disease of that joint, and how, in this way first, he was led to study that much-neglected condition. Be it remembered that at this same time Astley Cooper was engaged on his great work on the joints, but he took up the traumatic rather than the pathological aspect of joint lesions. It is needless here to go into the details of Brodie's work. Suffice it to say that, after a long course of dissections and clinical experiments, he came to some definite understanding of the nature of chronic joint disease, especially the differentiation between true morbid processes and what are called "hysterical joints," that he saw the proper indications for treatment by rest and treatment by movements, and so doubtless his conclusions are justified, when he says, in his autobiography, "I have reason to believe that my labors have not been in vain, and that a great number of limbs are now preserved which would in former times have been amputated as a matter of course."

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[2] "Sir Benjamin Collins Brodie," by Timothy Holmes, M.A., F.R.C.S., in "Masters of Medicine" Series; Longmans, Green & Co., 1898.

It is not possible here to elaborate this subject, but this work of Brodie's was indeed exhaustive and important. His first papers were published in the Medico-Chirurgical *Transactions*, — 1813 and 1814 — and were the beginning of his principal contribution to practical surgery, his great treatise on "Diseases of the Joints."

At this period of his life Brodie gave up teaching anatomy. This came about through the withdrawal of his superior and employer, Mr. Wilson, from such work, and not from his being engrossed himself in other matters. He was still a young man, but he never returned systematically to this field of teaching, though his labors with Home and his classes in surgery kept him in fresh touch with the subject. He seems not to have regretted this change, for soon his practice and his physiological experiments, together with surgical investigations and writings, engrossed him.

Two other events occurred, important to him in these early years of practice. In 1814 he broke down from overwork and was forced to take a long vacation. In 1816 he married a wife. He was then thirty-two years old and was earning £1,530 a year. Brodie was always a prosperous man, and his only grave anxieties, which came at the beginning of his married life, were insignificant enough. He dwells upon them as the only serious anxieties he ever knew, yet they amounted to this only: that he feared lest his bride might not have all the luxuries to which she had been accustomed, he being a poor man.

His poverty did not last long. From the year after his marriage his practice and his income increased rapidly. Cooper began to retire gradually after the year 1815, and, as Brodie himself writes, "Some one else was wanted."

The years of early struggle and establishment are the eventful years in most lives. When a man is rich and prosperous, when he drives about in his brougham behind two horses, and is sought after by the great ones of the earth, his biographer finds little to record. So it is with Brodie. He himself recognizes the fact tacitly, for after this his autobiography loses force and movement. He tells anecdotes of men and manners, and philosophizes pleasantly, but his plot fades away into such talk. For us it remains only to collect a few dates, and then to look back at the man himself and see of what sort he was.

Children were born to him, among others a young Benjamin, whose son is the present baronet.

In 1821 he was first consulted by the king, George IV, in association with Home, Cooper and others. The king had a wen of the scalp. Cooper removed it and was made a baronet soon after.

In 1822 Brodie was made full surgeon to St. George's Hospital, on the resignation of Griffiths.

In 1830 he attended the king in his final illness.

In 1832 he was made sergeant-surgeon to William IV, and was continued in that office under the present queen.

In 1834, at the age of fifty-one, he was made a baronet, and became an examiner of the College of Surgeons.

In 1839 he was elected president of the Medico-Chirurgical Society.

In 1840 he resigned his surgeoncy to St. George's.

In 1849 he was president of the Western Medical and Surgical Society of London, which ceased to exist in 1871.

In 1858 he was the first president of the General Medical Council.

The next year he received the distinguished honor of being elected president of the Royal Society, an office never before held by a surgeon. This place he resigned in 1861. The year before this his eyes began to fail him and for the last year of his life he was practically blind.

He died on October 21, 1862, of malignant disease, originating in the shoulder — probably sarcoma.

Brodie is essentially worth knowing as a type of the best in his period in the evolution of medicine. He came after the great pioneer Hunter, whose teaching he followed. He preceded the age of antiseptics and the wonderful expansion of surgery that accompanied their discovery and application. So, placed between Hunter and Lister, he cultivated the wisdom of the former and helped prepare the field for the latter. To him the philosophy of medicine appealed more than it did to the rugged Cooper, and though he saw no more clearly than Cooper he saw more broadly. They both knew that truth is at the bottom of all wisdom. Cooper sought truth because he saw through it the solution of the problem in hand. Brodie, with his cultivated mind and knowledge of men past and present, felt in his soul that "Truth is mighty and will prevail." That fact the lawyers learned long since. On that great conception their courts of justice are founded. It is that which has given the law and its exponents the highest respect of men through all history. To prosecute criminals, to defend property, to draw wills, and to explain the statutes are no more honorable or laudable pursuits, intrinsically, than to save life, to fight contagion, or to study disease. But save for a few great souls, isolated in the centuries, truth was not the object sought by physicians. The cynic may say that for ages medicine was in the hands of priests: — that is a large subject.

Certain it is that with the dawn of science, since men have sought truth through anatomy, physiology, chemistry and allied studies, medicine has been rising, gradually, to a position of proper dignity, and to few men more than to Brodie do we English speaking folk owe the debt of gratitude for demonstrating this fact.

It is a fact which was long seen but dimly by physicians themselves. It is not altogether known yet save to the elect, but it has leavened the mass, and is percolating slowly through the crust of ignorance, of charlatanry, of self-deception, which so long have masked the real purpose of our art. It was this feeling for the truth — a feeling so familiar now with us as to be almost axiomatic, I presume — that inspired all of Brodie's work.

I think it was fortunate for him and for us that he did not live in the days of specialism. In his prime men of vigor found time to study science in the laboratory and at the bedside. The great anatomist and physiologist was the great surgeon also. He recognized, as do we, how much easier and pleasanter it is to *study science* than to treat disease, and he noted that the laboratory student prefers to keep out of the arena and plumes himself on his virtue. Indeed, he foresaw the time we live in, of which Holmes makes this note: "That we are here to alleviate human suffering is less recognized now than then."[3]

Brodie did more, even, than seek the truth; he sought it with thoroughness, and so he learned early to grasp it. In the very beginning of his studies he had to overcome a repugnance for his subject, and through that very struggle he came the sooner on the meaning of it all — of the interdependence of theory and practice. He spent six years in preliminary study; but those years did not unfit him for attendance on disease when his time came, and, to crown all, he possessed in a rare degree that *intuition* necessary successfully to treat the sick.

A man's writings are not a key to his character, necessarily, but we must believe that they are so in Brodie's case. He wrote much, continuously, copiously and on divers subjects. A list of what he wrote would fill several of these pages. Of his work on the joints I have spoken; that was his *magnum opus* perhaps. He wrote also on genito-urinary disease — and important writing it was. Lithotrity for calculus was what he taught. Bigelow's operation of litholapaxy was not then perfected. No one more than Brodie — no one, that is, of the greatly successful surgeons — recognized the dangers of sepsis in cutting operations; and he was never an advocate of the knife except as a last resort.

And there were his numerous fugitive articles, essays and published addresses. He made a great many scientific addresses, which are to be found in his collected works.[4] There are many introductory discourses to his students, and addresses as president of the Royal Society, and such essays as "On the Effects of Strangulation," "On the Mode of Death from Drowning," "On the Mode in which Death is Produced by a Lightning Stroke," the Hunterian Oration of 1837, essays on "Homeopathy," on "Quacks and Quackery," on the "Use and Abuse of Tobacco," "On the Establishment of Special Hospitals," etc., etc. Some few of these numerous publications are commonplace, but most are valuable and are interesting to us to-day.

Brodie's writings reveal him, too, as the many-sided man he was — physiologist, surgeon, philosopher. That publication of which his biographer speaks most — and indeed the work of which he himself thought much — is his series of essays entitled "Psychological Inquiries," — the first part "intended to illustrate the Mutual Relations of the Physical Organization and the Mental Faculties," the second part "to illustrate some Points in the Physical and Moral History of Man."

As the titles suggest, Brodie has embodied all his best thoughts on life in these essays. A *critique* or a bare synopsis would be impossible here. The essays are indeed charming and abundantly worth reading. Constructed on the lines of Bishop Berkeley's "Alciphron," they combine the manner and thought of many other writers — of Cicero in *De Senectute*, of Dr. Brown and our own Dr. Holmes — yet they are essentially Brodie's own in construction, in style and in method of reasoning. The optimism of the man shines forth continually, as well as the kindliness of the physician and the wisdom of the philosopher. He believes firmly in man's capacity for indefinite development; he asserts that the longer he lives the more thoroughly is he convinced by experience that the good in this world predominates vastly over the evil. His axiom is that "The existence of one's own mind is the only thing of which one has any positive and actual knowledge." And through it all, and differing indeed from modern thinkers, he treats the question of the existence and creative energy of God as settled.

That these disquisitions should have been written by Brodie is an interesting and curious commentary on the man. One looks for an explanation of it, and finds it at once in his often-repeated assertion that a liberal training in letters is the best preparation for the medical education.

Brodie had no Boswell, as had Astley Cooper in his Bransby, but he was better worthy of one. His appearance, manner, private life, and conversation must have been worth recording, if one may judge by a few poor glimpses. To his junior followers he was a demi-god. Charles Hawkins, his young associate, edited his works, but was "unworthy to write the life of so great a man," he said. Even Timothy Holmes, writing thirty-six years after Brodie's death, speaks of him with reverence, as the one great man, to be reckoned with Harvey and Hunter. Now Hawkins and Holmes knew Brodie; they were educated in the Brodie tradition, as we in Boston were educated in the tradition of Bigelow and the "Elder Warren." To Hawkins and Holmes Brodie was a very real living force; but, alas, to us now, the volume of that force is easy of measurement, and already his deeds have ceased to live.

The physical personality of Brodie meant less than is often the case with great men. He was small of stature, lithe, active, keen, winning, with a something that secured and held warm friends, but without that rare quality we call magnetism — to hold and sway a crowd.

In his younger days he fell in with many interesting and distinguished men, inside and outside of his profession, and such friends he cultivated always. At first there were the associates of his barrister brother, Peter, whose Academical Society he joined; in it were Merivale, Wray, Stoddard, the future Lord Campbell, and other such. He even wrote some for Baldwin's *Literary Journal*.

Then in his hospital days he was introduced to Sir Joseph Banks, president of the Royal Society, and in 1810, at the age of twenty-seven, he became a member of that distinguished body. So he knew well and mentions Herschel, Humphrey Davy, Wollaston, Young, Hatchett, Wilkins, Marsden, Rennell, Henry Cavendish, Blagden, Abernethy, Carlisle, and many others, who are far removed from us.

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[3] Dr. Johnson said of medical practice that it is only "Melancholy attendance on misery, mean submission to peevishness, and continual interruption of rest and pleasure." — Rambler, No. 19.

[4] "The Works of Sir Benjamin Collins Brodie, Bart., D.C.L.," etc., with an autobiography, collected and arranged by Charles Hawkins, F.R.C.S., in three volumes. London, 1865.

There were, too, his many social duties, which Brodie kept up, though he says they were in no way allowed to interfere with his professional work. He tells of being very much engaged "in dinner society," as his acquaintance was pretty large, but that, being of temperate habits, he always returned home at an early hour.

Brodie had a traditional interest in and loyalty to the Fox Family; so that it is not surprising to find him an intimate visitor at Holland House and a member of that delightful circle made famous by Macaulay, and so well known to us through the writings of Macaulay's biographer, Sir G. O. Trevelyan. He speaks warmly of Lord and Lady Holland, and we cannot but think that the connection was of value to him in his early days of practice.

If one had time it would be interesting to quote at length the pleasant things he tells of all these folk. It was a very live and earnest gathering of men and women, and one does not hear from such as Samuel Rogers, Sydney Smith, Allen and Macaulay that sort of smug criticism by a sham Bohemia which is not unknown to some gatherings of the present day.

Indeed a careful reading in these pages of Brodie's autobiography, with appropriate excursions into neighboring fields, as the context suggests, would give us a delightful study of the methods and manners of English life in the first half of this century. I know of no scientific man whose career seems to be in such close sympathy with the life of his time. In reading of Harvey or Hunter or Cooper one feels that they all might have belonged equally well to the fourteenth as to the seventeenth, eighteenth and nineteenth centuries. They dwelt apart, in a little world of their own, and could not have been companions altogether agreeable to live with. With Brodie it is all very different: one feels on good terms with him at once; his atmosphere is not in the least rarefied; he was a person of modest and kindly spirit, ignorant of jealousies and in charity with all men.

And after all is said, what was it that made Brodie such a power in his generation? I think it was that he did well all those things that he found to do. He was a successful teacher; he prepared his lectures carefully, he was always on hand, he went straight to the point, he won and held the attention of his pupils. They went to him for knowledge and they were never disappointed. Nothing connected with his calling was small and insignificant to him. Out of the veriest trifles he gathered something of human interest and thus held it up to his hearers. He was a convincing writer. Though a firm believer and practicer of original investigation and observation, and so not a man of text-book knowledge, he was always a great reader of good literature and was thoroughly versed in the best work of his profession. He attended scrupulously to the work in hand and undertook nothing that he could not perform. At the comparatively early age of fifty-seven he retired from the hospital; not because he was infirm or beyond work but because an engrossing practice and the numberless calls upon his time led him to feel that the interests of the hospital would thus best be served. In middle age and with advancing years he was constantly receiving high honors from home and foreign scientific bodies, and was in demand especially as a presiding officer. In this capacity he served diverse associations, most conspicuous of which were the Royal Society and the Royal Medical and Chirurgical Society. With us the functions of a presiding officer seem to have become insignificant enough, but with Sir Benjamin Brodie the position was no sinecure; he believed in debates, and encouraged discussion — that one thing which, rightly carried on, is the life of such meetings. And those meetings were largely attended. He cut short prosers, he suggested new lines of thought, and was great indeed when, the talk failing, his own chance came to sum up and elucidate the whole matter. There was always discussion when he presided. He would talk if no one else would begin, and the extent of his information, both general and minute, on nearly all subjects was a constant wonder and delight. He rarely missed his meetings and he was familiar with the subject in hand always.

It is in such pursuits that we must fancy Brodie to ourselves; as a leader and teacher of his fellows, as the great type and exponent of our art to our fellowmen. Forty years ago the *Great Duke* meant Wellington to an Englishman; the *Great Surgeon* meant Brodie. He grew to be an exemplar. In all things he saw something of good. From all men he extracted the best. In learning he found the joy of living, and he met death with a perfect courage.

To such a man: patient, industrious, brilliant, wise; sound scholar and lucid teacher, his friends dedicated the Brodie Medal and inscribed these lines of Lucretius:

> "E tenebris tantis tam clarum extollere lumen,
> Qui primus potuisti, inlustrans commoda vitæ."[5]

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TRAUMATIC CEREBRAL EDEMA: ITS PATHOLOGY AND SURGICAL TREATMENT — A CRITICAL STUDY.[1]

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(Continued from No. 15, p. 348.)

On comparing these clinical findings with the description already set forth of the pathogenesis of the conditions found in brain contusion, they will be seen to harmonize in every detail, and it will be immediately evident that the presence of the hyperemic vessels (paralytic dilatation) without the edema is merely an index of the stage in which the process was when observed. Just what Dr. Bullard means by "increased intradural pressure" is not so clear. So far as is evident from his preliminary remarks, he considers the term synonymous with "compression." If this conclusion is correct, then, from our knowledge that compression is synonymous with cerebral anemia, there is nothing debatable in this observation. An analysis of the illustrative cases cited by Bullard will, we think, show that contusion was in every instance the element which produced the bulging brain with its engorged vessels and the edema observed by him.

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[1] An essay to which was awarded the William H. Thorndike Prize (Harvard) for 1898

[5] De Rer. Nat., iii, 1, 2.

Case I. Male adult, brought to City Hospital unconscious, with hemorrhage from right ear and a scalp wound, nearly vertical in direction, three and a half inches above the right mastoid. At the bottom of this wound the bone was exposed, but no fracture was detected. There was an ecchymosis about the right eye. Examination five hours later (Dr. Bullard) showed the patient deeply unconscious, the left pupil larger than the right. All the limbs were in a condition of total flaccidity, but the face was not involved. Knee-jerks slightly increased. There was thought to have been a gradual increase of swelling about the right eye and some protrusion of the eyeball.

Operation was performed at once *without ether.* The incision was lengthened downwards and a fissure found running antero-posteriorly. On following this forward about an inch a comminuted fracture with loose pieces of bone appeared. The opening made by the removal of these loose pieces of bone was enlarged by the rongeur. The brain beneath was bright red, not covered by dura; it protruded through the opening, and did not pulsate except on pressure; no large clot of blood anywhere.

At the autopsy there was found a blood clot of considerable size over the external surface of the *left* hemisphere posterior to the frontal lobe and thickest in lower posterior region; destruction of brain tissue at site of bone removed (right lower parietal region) and multiple fractures of the base. There was also an effusion of blood in the right orbit, though no crack was visible in the anterior fossa or orbital plate.

Résumé. — Contusion is here evident clinically from the protruding, nonpulsating brain with its engorged vessels, and pathologically, by assumption, as an intermediate result of the expenditure of the force which produced the hemorrhage and laceration.

Case II. Boy, age nine years. Brought to City Hospital unconscious, with tonic spasm of left upper extremity. There was an immense antero-posterior extravasation over the whole length of the sagittal suture and ecchymosis of the right eyelids; the right pupil was dilated, knee-jerks slight; lower extremities negative.

Operation at once, without ether. The sagittal suture was found separated throughout its whole length and the longitudinal sinus laid open. There was a transverse fracture of the right frontal bone, and a piece of loose bone there was removed. The surgeon trephined over about the middle of the right ascending frontal convolution. The dura was blue and very tense. On opening it the brain protruded perhaps as much as two inches. The protruding portion of the brain was contused and disintegrated. There were no large clots beneath dura. Bubbles of air came through the trephine hole, suggesting fracture of the ethmoid.

The author himself notes the presence of contusion and disintegration (laceration) in this case, and naturally excludes ether as a causative factor in the brain bulging in both cases. Edema is conspicuous in both cases by its absence, but if we remember that the first was operated a few hours after the accident and the second almost immediately, the logical conclusion is that time was the *only* element lacking for its production.

Case III. Male, thirty years old, was struck a glancing blow on the head one morning with a hammer. This occurred seventy miles from Boston. He came to Boston by train, ate a good dinner and a moderate supper, and after supper came to the hospital as an out-patient; was seen about 9.30 p. m. There was a depression about three inches across, just to the left of the sagittal suture and immediately posterior to the coronal suture. *No symptoms;*[25] operation immediate. Depression found in region described, with several radiating fissures. Trephined and depressed fragments raised. Longitudinal sinus not injured. Dura did not pulsate. On puncture of dura considerable free fluid escaped. Recovered *without symptoms.*[25]

Here is a case seen many hours after the infliction of the injury which presents the edematous sequela of contusion. What is more, as the patient had no symptoms before operation and none subsequently, it is fair to presume that the edema had no operative significance.

Case IV. Male, eleven years old, injured by an electric car. A large portion of the left side of scalp was torn back, and two fissures were plainly visible in the cranium, one running vertically through the left parietal bone just posterior to the vertical plane which passes through the anterior edge of the pinna, the other running horizontally forward about two inches above the base of the cranium. The bone posterior to the vertical fissure was depressed and ran under the edge of the anterior fragment. The bone above the horizontal fissure was slightly depressed. Blood oozed through both fissures, but there was no hemorrhage from the ear; patient unconscious; no paralysis, no pressure symptoms, no decided difference in size of pupils. Operation under ether; trephined just posterior to vertical fissure; no clot; dura bluish, tense, does not pulsate. On incision of dura considerable cerebro-spinal (?)[26] fluid escaped; no subdural clot.

Contusion is here evident from the bulging of the brain with its engorged vessels and from the edema. The edema, moreover, was excessive and yet reproductive of no localizing symptoms.

Case V. Female, fifty-two years old, fell from an electric car, was admitted to City Hospital shortly after. Conscious; pupils equal; no paralysis anywhere. There was a depression in the right temporal region. The surgeon trephined in this region, the operation being done under ether. No extradural clot. The dura was tense and scarcely pulsated. On cutting the dura the brain bulged. No excess of cerebro-spinal fluid noted; recovered well and quickly.

Here we find the brain in the stage of paralytic vascular engorgement, as shown by the bulging and lack of pulsation. There were no localizing symptoms, and the absence of edema is a beautiful exemplification of the time element, the patient being operated upon almost immediately after the accident.

From the analysis of this series of cases it becomes evident (1) that there is not a single element in any one of the five that is incompatible with the assumption that the condition already fully described as brain contusion was the underlying cause of the vascular hyperemia, bulging and edema, so carefully noted by Bullard; (2) that evidence is still lacking of the value of this edema as a localizing factor in head injuries; (3) that recovery was in no case the indisputable sequence of operative interference.

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[25] Italics are the writer's.

[26] The writer insists that the term cerebro-spinal fluid is a misnomer for this fluid both for the reasons already adduced and from the fact that Halliburton and others have found that cerebro-spinal fluid when originally drawn off from the subarachnoid space has a peculiar chemical composition, but on being drawn off again and again after the refilling of the space it equals more nearly the composition of serum.

Walton's[27] cases and views on the subject will now be examined and discussed.

Case I. The patient, a young woman, was thrown from the back of a horse, striking the right side of her head against a fence rail. She was found unconscious, and when seen four hours later by Dr. Brooks her condition was as follows: unconscious, respiration normal, pulse 100, face flushed, pupils equal, somewhat dilated and reacted slowly to light. There was partial paralysis of the left side of the face, and complete paralysis of the left arm and leg. She had vomited once or twice since the accident. Physical examination showed a swelling in the right mastoid region extending upwards and backwards, and pressure over this area caused marked restlessness. Some hours later examination (at Massachusetts General Hospital, to which patient was taken) showed the following: pupils equal, somewhat dilated and reacting slowly to light; paralysis of left side of face; left arm flexed and rigid; left leg paralyzed and rigid; patellar reflexes normal. Large hematoma covering the right mastoid region extending well into the occipital and parietal. Pulse 96, of fair quality but of irregular rhythm; respiration about 24, normal in character. Pressure over the hematoma caused the patient to move the right arm and leg violently. The scalp was shaved and an ice-bag applied. She was given one-sixth grain of elaterium.

During the night the patient became very restless; the right arm and leg were constantly in motion. The left hand was moved a little. There was incontinence of urine. Temperature at 1 A. M. (rectal) was 102.4°; the pulse varied from 100 to 130, the respiration from 20 to 30; patient still unconscious.

Second day. In the morning the pulse was more steady and of better quality; the temperature (rectal) was 97.2°. The patient was still very restless, with constant tossing of the right arm and leg. The left arm was moved quite freely when the hematoma was pressed, though both the arm and leg were still somewhat rigid. The bowels were moved after a drachm of jalap powder and a suds-and-glycerine enema.

In the afternoon the left arm and leg were somewhat less rigid, and the patient groaned when the right side of the head was pressed, at one time making a slight attempt at articulation. In the evening the rigidity and paralysis of the left side were quite well marked, and no response was made upon efforts to arouse her.

At this point operation was performed. The scalp was incised on the right side and turned back, and a trephine applied to a point about two and a half inches above the external auditory meatus. No fracture of either table was discoverable, but the dura was seen to be tense and non-pulsating. On its incision an ounce of clear fluid spurted through the opening. The brain appeared somewhat edematous, but otherwise normal. Exploration under the dura revealed no sign of hemorrhage.

Recovery from the ether was marked by great restlessness and a weaker and more variable pulse, the latter rising at one time to 150. The left arm and leg again became rigid.

From the time of operation to the fourteenth day there were constant remissions and exacerbations in the symptoms, and a note made on this day says: "No definite paralysis, and no trace of rigidity in the left side, *though comparatively little movement was made (!).*"[28] Two days later the patient died.

Autopsy. — On removing the calvarium the dura was found to be moderately adherent, but there was no evidence of extra- or intra-dural hemorrhage. Exudation seen through the trephine opening did not extend any farther than the limits of the opening. There was no evidence of any fracture of the calvarium. The brain showed no evidence of meningeal hemorrhage, and externally showed nothing remarkable. On section, several hemorrhagic, softened areas were found in the following situations: In the left frontal, first convolution, about one centimetre from the surface, there was an ovoid area the size of a common bean, of a dark brownish-black color, soft consistency and indefinite margin. A similar area was also found in the white matter, about one centimetre anterior to the caudate nucleus. Another similar soft, dark-brown area was found just beneath the floor of the right lateral ventricle, near the outer margin of the optic thalamus. *In several places throughout the white substance of the brain there were pin-head-sized dark-brown areas which did not wash off.*[28] Careful inspection of the base of the skull did not reveal a fracture.

Among the observations which Dr. Walton makes after his study of this case are the following: "That the pressure of this fluid (the edema) played a part in the production of the hemiplegia can hardly be doubted in view of the disappearance of rigidity and improvement in motion following the relief of pressure by operation. . . ." Further: "It emphasizes, however, the importance of remembering that a fatal result may follow concussion without tangible gross lesion, unless, indeed, the two small hemorrhages in the frontal lobe, with subsequent softening, are considered adequate cause for a fatal issue. Whether this be true or not, they were certainly insufficient to produce the paralysis."

Are these conclusions warranted on close analysis of both clinical and pathological evidence? First of all, the writer can see no reason why the lacerated area found near the outer region of the right optic thalamus is not, owing to its immediate proximity to the internal capsule, sufficient cause for the left-sided paralysis and rigidity. The left arm and leg were stated to have become rigid again after the operation, and on the fourteenth day we still find very little motion in the left side. In addition to this the history tells us that the hemiplegia was present when the case was first seen, that is, a few hours after the accident, in the writer's belief a time much too short to account for the hemiplegia on the ground of edema. Can it be doubted, moreover, in view of the combination of vascular engorgement and edema with abundant and widely diffused capillary thrombi (the pin-head-sized dark-brown areas) that the case is an absolutely typical one of general contusion, and that practically uncomplicated contusion can cause death? The writer thinks not, and, furthermore, feels sure that this case is only one of a fairly large class which comes to autopsy. When associated with fracture, the latter engrosses the attention of pathologist and clinician, and the diffuse and scarcely macroscopic lesions of the generalized contusion escape observation. Hewitt's precautions [29] in regard to the danger of overlooking this condition seem abundantly justified.

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[27] Walton, G. L., and Brooks, W. A., Jr.: Observations on Brain Surgery Suggested by a Case of Multiple Cerebral Hemorrhage, Boston Medical and Surgical Journal, April 1, 1897, pp. 301–305. Further, G. L. Walton: Subarachnoid Serous Exudation Productive of Pressure Symptoms, after Head Injuries, Abstract in Transactions American Neurological Association for 1897, p. 23.

[28] Italics are the writer's.

Right here it may be stated that we have in all cases of this sort in which contusion is the paramount lesion a far safer clinical guide than any localizing symptom, namely, the temperature. This will range from 97° A. M. to 100° P. M. from the beginning of the case up to the final elevation attendant upon the fatal issue. This differs markedly from its action in uncomplicated hemorrhage and in laceration. In the former it ranges from 98.5° (after restoration from shock) to 101°, and in the latter it takes a steady upward trend almost from the beginning.

(To be continued.)

Clinical Department.

MASSACHUSETTS GENERAL HOSPITAL. CLINICAL MEETING OF THE MEDICAL BOARD.

Regular meeting, Friday, December 16, 1898, Dr. C. B. Porter in the chair.

Dr. G. L. Walton reported the following cases:

I. SPINAL CURVATURE FROM OCCUPATION, ACCOMPANIED BY AMYOTROPHIC LATERAL SCLEROSIS.

This patient, a young man of twenty, referred to the Neurological Department by Dr. Warren, presents several points of interest. The case is shown primarily with a view to calling attention to the ease with which such a curve may be mistaken for Pott's disease on casual observation. The curvature is extremely marked in the upper dorsal region, antero-posterior, with a slight tendency to lateral deviation, with some elevation of the right shoulder. There is no sharp angle, but the general appearance is not altogether unlike that of old Pott's. A fact which renders the resemblance more striking is that the patient has a typical spastic gait, causing him to toe in and scuffle the toes stiffly in walking, which he does with considerable difficulty.

The patient tells us that he was well up to the age of fifteen, at which time he began to carry heavy bags of coal upon his right shoulder and heavy baskets upon his right arm. This he did for fully twelve hours a day with only ten minutes out for dinner. His back became gradually bent, and two years ago he had to relinquish the work. I suppose this would come under the classification "butcher boy's" spine. He was not naturally delicate, and the family history is negative, both as regards constitutional and nervous affections. He has had at no time difficulty in stooping or pain in the abdomen or legs.

The spastic condition came on too gradually for its onset to be dated. Wasting and weakness of the arms appeared at about the same time. The general history would indicate that it was the approach of the trouble which caused him to give up his work, though he was not aware of the nature of the trouble. His father dates the onset from a fracture of the right arm at the elbow occurring shortly after work was discontinued, but this could have had nothing to do with the trouble.

Physical examination to-day shows the wasting in both hands characteristic of progressive muscular atrophy. He finds it, for example, difficult to approach the thumb to the little finger. There is also marked wasting of the shoulder muscles on the right, the deltoid being capable of raising the shoulder only slightly; the infraspinatus is so wasted that rotation of the upper arm is impossible, the triceps is extremely weak, and the biceps is practically wanting; fibrillary twitching is apparent. Both knee-jerks are exaggerated, and ankle clonus is present on the right; there is no loss of sensation.

The case presents, then, a fairly typical picture of amyotrophic lateral sclerosis, the lesion affecting the anterior horn cells in the cervical region and the lateral columns of the cord. The cord lesion is independent of the spinal curvature, excepting in that both may be due to the same cause, namely, overwork.

II. POLIO-ENCEPHALITIS SUPERIOR.

This is a very unusual form of nuclear disease, resembling ophthalmoplegia in the seat of the lesion, but representing an infectious rather than a degenerative process. I will remind you that ophthalmoplegia presents a bilateral paralysis of ocular muscles, named external or internal according to the muscles involved; that affection is of gradual onset, and results from progressive degeneration of the cells of the pons nuclei, analogous to the degeneration of the anterior horn cells in progressive muscular atrophy, of which it really represents an upper type.

This case, referred to the Neurological Department by Dr. J. C. White, represents a rare condition, in which similar paralysis takes place, but of comparatively sudden onset with subsequent improvement. The only satisfactory explanation of these cases is that the pons nuclei have suffered from a process analogous to that of poliomyelitis, a disease of infectious, that is, inflammatory, rather than degenerative, nature. This process has been named polio-encephalitis (*superior* when the ocular nuclei have been invaded; *inferior* when the nuclei of the medulla have suffered).

The patient, a clergyman, thirty-four years of age, first noticed diplopia two and a half months ago, of rather sudden onset. Two weeks later double ptosis appeared, so complete that the lids nearly covered the globe. At the same time appeared weakness of the legs, causing toe-drop on both sides, with a tendency for the left foot to turn in. Weakness of the hands also appeared, so that he could only write a little, though he could still manage to do this with the upper arm. These symptoms reached their maximum in about one month, since which time he has so far improved that to-day he can write several letters at a time without difficulty, and can walk perhaps half a mile. The ptosis began to improve within two weeks and has continued to do so. There was no sphincter trouble, no headache, vertigo, mental or speech defect. Family and personal history throw no light upon the case. He is said to have had "typhoid malaria" in India two years ago, and one year ago another attack of malaria.

Examination to-day shows that he can raise the lids so as to nearly show the white of the eye. Movements of the globe are impaired, both to the left and right, and upward. Downward movement is very good. The pupils are practically alike and react to light and accommodation. Examination of the arms and legs is practically negative. There is no disturbance of any variety of sensation, the gait is normal, the grasp good, the reflexes unimpaired.

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[29] Hewitt, Prescott: Holmes's System of Surgery, vol. ii, p. 4.

The diagnosis of nuclear rather than *basal disease* is made principally from the uniform bilateral character of the affection. It would be, for example, incredible that the branches to the lids should be simultaneously affected by a peripheral lesion, the nerves supplying the interior of the eyeball being meantime spared. The diagnosis from ophthalmoplegia lies in the comparatively rapid onset and steady improvement.

This disease has been observed only in adults, the eyes being usually spared in poliomyelitis in infancy. The most plausible explanation of the temporary involvement of the arms and legs is by the supposition that the initial infection attacked also the anterior horn cells of the cord.

SUPRAPUBIC CYSTOTOMY FOR CANCER OF THE BLADDER.

Dr. S. J. Mixter showed a patient on whom he had performed suprapubic cystotomy three times in a period of four years for malignant disease of the base of the bladder, the patient in the interval between operations being perfectly comfortable and able to do his work as captain of a coasting vessel. He has now a large cystic tumor in the left side of abdomen which contains blood and some cells, evidently a breaking down, malignant mass.

Dr. C. B. Porter: I would like to ask if microscopic examination shows any recurrence now.

Dr. Mixter: I don't think there has been one made since he has been in here except Dr. Whitney's examination of a specimen to-day.

Dr. Whitney: There were some cells which do not look like the ordinary bladder epithelium, but none of the large villous masses found at the previous examination.

PHOTOMICROGRAPHS OF MALARIAL PARASITES.

Dr. James H. Wright showed two photomicrographs of the parasites of malarial fever, taken at a magnification of 2,500 diameters. These were made with the new photomicrographic outfit recently acquired by the clinical pathological laboratory of the hospital.

Dr. H. F. Vickery reported the following cases:

I. NON-MALIGNANT OBSTRUCTION OF THE PYLORUS.
II. STENOSIS OF PYLORUS, AND GALL-STONES.
III. ADHESIONS BETWEEN LIVER, GALL-BLADDER AND INTESTINES.

I would like to report very briefly three cases that occurred when I was on duty.

One was a married woman, fifty-three years old, sent to me by another patient. She had been suffering for five years from pain in the region of the stomach, and vomiting, with large amounts of vomitus, two quarts or more at a time. Her symptoms had gradually grown worse. Her greatest weight had been 145 pounds, and when she came to me her weight was 95 pounds; yet she did not look cachectic; she looked merely ill and feeble. The most striking thing on examining her was the great peristaltic wave that travelled across the upper part of her abdomen. It seemed very plain that she had a non-malignant stricture of the pylorus. I urged her to enter the hospital, and there we made further study of her case, to be sure of our ground, and found that her stomach acted in a pretty healthy manner, except that salol passed on into the intestine slower than normal, not affecting the urine until nine hours after ingestion. The capacity of her stomach was a little over three quarts. Under the right costal margin it seemed as if a lump could be felt, slightly rounded and irregular, but not larger than a pecan nut. It was not certain that it was felt. Washing the stomach daily made her improve a great deal and caused the stomach to grow somewhat smaller. Her general condition was much better. Dr. Harrington, at my request, saw her, and fully agreed in the diagnosis and in the wisdom of an operation, and if he will kindly tell about that, then I will go on with my report.

Dr. Harrington: The operation was the ordinary operation for non-malignant stricture of the pylorus, pyloroplasty, the Heinecke-Mikulicz method, which consists of a longitudinal incision in the pylorus connected into a vertical one. The operation is an easy one when the parts are not tied down by adhesions. Even then careful separation makes it easy. An opening was first made in the stomach proper. It was then found that the pyloric opening was rigid and would admit a probe about as large as an ordinary lead pencil. After the operation the forefinger could be passed easily through the pylorus.

Dr. Vickery: I wrote to this patient and received this letter, the substance of which is that she remained entirely free from digestive disturbances till three weeks ago, but since then has had considerable discomfort. If my inquiry had been made three weeks ago and a prompt answer received I should have thought she was perfectly cured. I hope so now.

The next case was a patient sent to the hospital by Dr. J. O. Tilton, of Lexington. She was married, age thirty-nine, and for thirteen years had suffered much discomfort, the main symptom being abdominal pain in the navel and toward the right side and extending into the back, sometimes starting in the right inguinal region, but mainly located in the right epigastric region. The first years only one or two mild attacks occurred a year, then the attacks became more severe, and for five months before she entered the hospital, in August, she had been wretched. Vomiting did not occur very much; it was only when the attack was very severe and not at all in the typical way for pyloric stenosis — what used to be thought the typical way. Peristalsis and gurgling were very marked in her case at times. There was tenderness in the right hypochondrium on deep palpation and a small lump the size of a walnut was felt once, and there was a record that Dr. Frederick C. Shattuck in consultation had some year or two before felt some mass there. About two years before coming to the hospital she was married, and for a year and a half after that she felt perfectly well; then five months before entrance her pain began again. During that year and a half she went through normal gestation and had a baby. When I first saw her she was so ill that it was not possible to go through the routine examination of the stomach, testing its behavior with food, etc., but the diagnosis seemed to lie between certain things: one was gall-stones, one was adhesions in the region of the pylorus and liver, and then a remote possibility seemed to be a hydronephrosis. When she had the pain there was an elastic rounded mass on the right side about where a kidney would be, but there was no history like hydronephrosis. She said that she had never been jaundiced, but she had really been very deeply jaundiced only five months before she entered. In this case, again, Dr. Harrington and I agreed upon the advisability of an operation. He will report that.

DR. HARRINGTON: In this case no operation had been definitely planned except to make an exploration. We found gall-stones in the gall-bladder, and these we removed, and then rather unexpectedly we found adhesions around the pylorus. At first I thought it was certainly malignant. It separated gradually, and it seemed after working at it a while that it was inflammatory tissue. There were enlarged glands. After clearing away the adhesions it was seen that the pylorus was very much contracted, and, although the symptoms had not pointed to obstruction, it seemed that there must be pyloric obstruction. The same operation — pyloroplasty — was done in this case. A stricture was found which would admit nothing more than a small-sized lead pencil. The patient made a good recovery.

The question has occurred to me whether this operation was sufficiently radical. When we cut strictures in other parts we do not expect them to remain open very long unless we keep them dilated, and it seems to me very possible, almost probable, that we may have to resort to something more radical, although this operation is so easy that it can be done, and a patient be given a chance to gain, as they certainly do very quickly after the stricture is removed.

DR. VICKERY: This patient, Dr. Tilton told me this week, is now well. To me certain interesting points about her case were, *first*, that she had a very narrow stricture of the pylorus without any marked digestive symptoms, and *second*, that, although she was an intelligent person, and anxious to help us, she said she never had had any jaundice, when she had been deeply jaundiced within five months, and *thirdly*, that a happy marriage and pregnancy should divert her attention in such a way that these organic things should cause no pain for a year and a half, whereas, when she did have the attacks, life was unendurable.

The third case I report by permission of Dr. Cabot, who cured him. It was a man of fifty-three, who for five years had been subject to sudden attacks of severe pain in a rather small area between the navel and the tip of the ensiform cartilage and to the right of it, a little inside the normal position of the gall-bladder. There was tenderness in that place. A most exhaustive examination of his digestion was possible. It seemed to be normal; the size of the stomach and the behavior of the stomach were both what they should be. Jolting increased the frequency of attacks. He stated that he had been jaundiced two days before he entered the hospital. He was not jaundiced, and the urine contained no bile at the time he entered my wards.

In this patient, who, in point of my experience, was the first in the series, I thought we had a clear case of impacted gall-stones. Dr. Cabot said that against that was the fact that the greatest tenderness and pain were not in the right place. On operation adhesions were found around the gall-bladder, and the gall-bladder itself contained normal bile, and a most thorough search disclosed no stone in any duct or in the bladder. The gall-bladder was then sewed up. The adhesions were strong and numerous, and one of them Dr. Cabot called my attention to. I should think it was about one-half inch wide and one-sixteenth or one-eighth inch thick, and when he cut it in two there was a crunching sound, it was so tough. These adhesions seemed to be between the liver and the gall-bladder and the intestine. The stomach was not enlarged. This man was perfectly willing to run the risk of his life to get rid of the terrible pain which he suffered. For some two or three months before he entered he had pain almost every day. He has written me this week that he is now as well as he ever was in his life. The operation was done in February, 1898. It was not a pyloroplasty, but a loosening of adhesions around the gall-bladder and of one firm adhesion that went down into the depths. There was no stricture, only these bands.

DR. WARREN: I think particularly this last case is interesting, as showing the presence of adhesions in the neighborhood of the pylorus as result of perigastritis, causing severe symptoms which can be relieved by a very simple operation — division of the adhesions, or gastrolysis. I think it is a condition we ought to take into account in making a differential diagnosis and reckoning on the propriety of an operation.

The special point I want to make is that the adhesions in these cases are due to perigastritis, and that in many cases it is not necessary to open the pylorus at all; you can have great relief from simple division of these bands. They are caused by peritonitis around an inflamed stomach or pylorus.

DR. ELLIOT: I once removed some gall-stones from a gall-bladder and sewed the gall-bladder on to the abdominal wall, and the patient came back the next year with symptoms very much like the original symptoms of gall-stone, and a second operation showed that the pain was entirely due to the adhesions and the pulling of the gall-bladder. There were no more stones in the gall-bladder, and after freeing the adhesions the patient was entirely cured. It is an argument, I think, against fixing a gall-bladder when it is not necessary.

THE PRESIDENT: I should like to ask Dr. Elliot if, when he relieved the adhesions, he sewed in the peritoneal surfaces so as to cover up the raw surface.

DR. ELLIOT: I have forgotten the details of the operation. I was very much impressed with the fact that the adhesions caused as much trouble as the original gall-stones.

THE PRESIDENT: I should like to ask whether the pain was produced by the tension on the gall-bladder or by the adhesions.

DR. VICKERY, in answer to the question what he considered the source of the adhesions in this case, said: In this man, I think it is difficult to say. The pain was dreadful the first time he was sick at all. In cases like this two sources of pain suggest themselves: one a localized peritonitis outside of an ulcer in the pylorus, and the other the ulceration of a gall-stone into the intestine; the stone escapes, but leaves a scar behind. Dr. Cabot once operated on a patient Dr. Vickery sent into the hospital. He had felt a bunch of stones, and the patient had agonizing pain. When Dr. Cabot operated he found those stones just a mush, almost ready to run, like liquefied mud, out of the gall-bladder. It may be that stones may do a good deal of damage and then soften up and disappear.

DR. HARRINGTON: In regard to the causation of these strictures, I am convinced that inflammatory attacks outside of the stomach, in connection with the gall-bladder or the bile ducts, often lead to inflammatory conditions which result in contraction of the pylorus. The second case reported by Dr. Vickery suggests such a cause. I have a patient under my care, an elderly gentleman, previously very healthy, who had an "attack of gall-stones" three years ago, with jaundice and intense pain. This passed off, but a year and a half later he began to develop symptoms of dilatation of the stomach and stricture of the pylorus. His condition became very alarming, from the emaciation and loss of strength. His age alone contraindicated operation. By the use of the stomach-tube and careful attention to diet he is improving, but the stricture undoubtedly exists and is due, I believe, to the cause mentioned.

Dr. J. W. Elliot reported the following cases:

I. SUPRAPUBIC PROSTATECTOMY; THIRD LOBE.
II. SUPRAPUBIC LITHOTOMY AND PROSTATECTOMY; VERY LARGE PROSTATE.
III. SUPRAPUBIC LITHOTOMY AND PROSTATECTOMY FOR PROSTATIC BAR.
IV. NEPHROLITHOTOMY; UNUSUALLY LARGE STONE.

First, I would like to show a specimen of stones of the kidney. Here are 200 grains of stone removed from a kidney. The patient was in Dr. Gannett's ward and I saw her there first; she had a large tumor of the right side which was evidently a kidney. She was passing pus in large quantities. On opening in the back I removed part of those stones, and later I removed more of them from in front. The tumor was as large as three fists and showed how destructive the disease becomes if it is left untreated. If the stone had plugged the ureter the disease would have been less severe, but in this case the kidney had hypertrophied around it and made an enormous mass of suppurating tissue. The patient finally succumbed to the disease.

I had this summer three interesting cases of prostatectomy. The first one was a gentleman, about sixty-eight years old, who had led catheter life for about four years; the last part of the time it had come to a great deal of blood and pus and finally the catheter caused chills. He did not improve with hospital care, and the operation was done as a last resort. The prostate was very hard and, taken together with the large quantity of blood he passed, some of the consultants considered it a case of cancer of the prostate. I opened the bladder by suprapubic cystotomy and with no instrument but the dilated balloon in the rectum; without any traction whatever, a beautiful middle lobe appeared outside of the abdominal wall, so that I dissected it off and tied the vessels. There is the third lobe, about one and a half inches in diameter. (Specimen passed.) The patient was much relieved and continues fairly well.

The second case was a gentleman who had a long history of trouble with his bladder, but he came here with the ordinary symptoms of stone and very bad urine. On opening the bladder I found this stone, which is rather large (two and a half inches in diameter), and a very large prostate. The urethra was thickened, and surrounded by prostatic tissue, and so raised by the enlarged prostate that the urethral opening was just behind the symphysis pubis. At a second operation I removed a large amount of prostate. (Specimen, which filled a 4-ounce bottle, was exhibited.) As the gland was very large, and the patient was not in good condition, I did not remove all of the lateral lobes, but contented myself with clearing the urethral opening until it would drain the base of the bladder. He was quite sick, his temperature rising constantly, so that for a long time it seemed as if the operation was not a success. Suddenly his drainage-tube came out, and like magic he passed all his water without difficulty. The wound has closed up; I have not seen him till to-night, for two or three months. He has improved in his general appearance and complains only of frequent micturition at night. He is looking very well, and, considering the fact that I could not remove his entire prostate, but simply tunnel it, I think the result is very good. I show this case because he happens to come back, and also because it is an encouraging case of prostatectomy; it is a good result, in spite of very discouraging circumstances.

The third case has not appeared to-night, but I will speak of it because of the rather interesting condition I found. It is a parallel case to the previous one, so far as there was a combination of stone and prostate. He had a prostatic bar which I have never seen before. This gentleman was, I think, fifty-two years old, and had a history of gonorrhea. He had had when he came here two attacks of retention, one three years and one five months before. He came in with retention. He had been examined by a well-known genito-urinary specialist in the city, and by various other surgeons, and no stone was detected at all. His bladder was drained for cystitis by Dr. Homans. When I came on duty he was evidently getting worse, and so I did a suprapubic cystotomy, with the idea of seeing what the trouble was and if it could be benefited, and if not he could be drained above and below. To my surprise, I found he had a stone quite as large as the one I have passed around, and the condition of his prostate was very interesting and very queer. There was a very deep *bas-fond* which held a stone; instead of the ordinary enlarged prostate he had a sort of prostatic curtain or bar. I could easily imagine that every time the catheter was passed it would push the prostatic bar over the stone. As I removed the prostate I examined it very carefully; the first half-inch of the bar was mucous membrane. As I cut it out I came down to solid prostatic tissue. This man then had had a stone which could not be detected by an expert examination, and it was due to the fact that he had a prostatic bar. This was a very juicy affair and bled very much, but I was able with scissors and forceps to entirely remove it. He has healed up and passes his water in the natural way, and is now on night duty as policeman, perfectly well.

Dr. Warren: In reference to the advantage of such a method, I operated on a case this winter who several years previously had orchidectomy done and came back with symptoms of cystitis. I performed suprapubic cystotomy and found two small calculi in the bladder, and still a very small tongue of a middle lobe, about the size of the tip of the tongue and just covering the meatus. I took that away with prostatic cutting forceps and then drained the bladder. Dr. C. A. Porter, who was assisting me, removed the colpeurynter and passed his finger into the rectum and I passed my finger into the bladder, and we found all the rest of the prostate had disappeared entirely. The thickness of the bladder wall in the prostatic region was the same as elsewhere. Although the prostate had atrophied there still remained this small tongue, which prevented the relief from being obtained. The patient is now convalescent from the operation and feels much benefit. The orchidectomy had been done two and three years before. I removed one testicle and I am not sure who removed the other. There was previously enlarged prostate, for which this testicle had been removed.

THE PRESIDENT: I suppose the combination of enlarged prostate and stone is not very infrequent, because the enlarged prostate produces cystitis generally, which may produce a plug, and that forms the nucleus for stone. I think the bar Dr. Elliot spoke of is exceedingly interesting.

(*To be continued.*)

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M D., AND H. W. CUSHING, M.D., BOSTON.

(Continued from No. 15, p. 359.)

OBSERVATIONS UPON THE OPERATIVE TREATMENT OF HERNIA AT THE HOSPITAL FOR RUPTURED AND CRIPPLED.

Bull and Coley, in a joint article on this subject,[9] give the results of the operations performed at the Hospital for Ruptured and Crippled, and state that there is no longer room for doubt that hernia can, for a considerable period at least, be cured by operation. Whether these cures will prove permanent they do not, as yet, state positively. The proportion of permanent cures cannot be estimated with exactness, inasmuch as no definite limit of time can be laid down beyond which relapse may not occur. In spite of this, from a careful study of the cases operated upon up to the present time, the authors are able to arrive at certain fairly definite conclusions. The results of their operations, based upon a study of 360 cases of relapsed hernia following various methods of operation, throw valuable light upon the question as to the period when relapse is more likely to occur. They have found that 80 per cent. of these relapses occurred during the first year after operation; 64.5 per cent. during the first six months following operation, while but 11.9 per cent. occurred after a period of two years had elapsed. Of the cases that relapsed after two years, 5 occurred between ten and twenty-two years after operation, and 7 cases between five and ten years. These cases, which were not selected, but taken as they applied for treatment, ought to give a fairly accurate idea of the average time when relapse occurs.

From these facts the authors consider that one is justified in concluding in a general way that if a rupture is sound at the end of one year after operation there is reasonable prospect of permanent cure; while if it remains well for two years the chances of relapse are exceedingly small, though it is not impossible that relapse may recur as late as twenty years after operation.

Roux, of Lausanne, Switzerland, has operated upon 1,398 cases, with five deaths. Of these 324 were traced beyond two years, and 54, or 16.7 per cent. of this number, relapsed. Two hundred and thirty-five of the cases traced were operated upon by the method of Ferrari, only 53 by the method of Bassini, slightly modified by Roux, in that he substituted a purse-string suture for the interrupted suture of Bassini. Of the 53 cases operated upon by this method 35.8 per cent. relapsed. A study of the wound-healing of these cases is of much interest; of the cases that healed by primary union 15.2 per cent. relapsed; of the cases that healed by secondary union 22.4 per cent.

Halsted has operated upon 309 cases, with one death. Of 221 cases, operated upon by his own method, there were 12 relapses. It is stated that in 5 cases in which relapse occurred there was an obliteration of the conjoined tendon.

Macewen (personal communication to authors) has operated upon 224 cases by his own method, with two deaths. Of this number 107 were traced, with five relapses, and 93 cases well from two to ten years after operation.

Broca, of Paris (personal communication to authors), has operated upon 1,064 cases by his own method, with nine deaths — a very large proportion of these cases were children. The number of cases traced is not stated.

As regards the mortality following modern methods of operation for the radical cure of hernia, the authors have collected 8,594 cases operated upon during the past decade, with 78 deaths, showing a mortality of less than 1 per cent.

Of the 134 cases operated upon by the authors prior to 1890 only 49 per cent. healed by primary union, 40 per cent. relapsed within two years after operation, and most of these relapses occurred during the first year after operation. Of these 134 cases only 16 were in children under fourteen years of age.

In regard to the suture material, silk was used in twelve cases, and in every case traced a sinus developed after a longer or shorter interval after operation, remaining open until one or more sutures were finally discharged or removed. The silk was prepared by boiling in a five-per-cent.-carbolic-acid solution just before using it.

The mortality of the early series (three deaths) was considerably higher than that in the later cases. One death was caused by ligature of the omentum too close to its attachment to the bowel; one died of hemorrhage and one of peritonitis.

Of the total number of cases, 1,051, operated upon by the authors, 921 were inguinal, 96 femoral, 19 umbilical, and 15 ventral; 100 of the cases were inguinal hernia in females; 461 were children between four and fourteen years of age; 590 over fourteen years.

Methods of Operation. — Bassini's method was employed in 618 cases, with twelve relapses. Of these cases 371 were children under fourteen years of age, with three relapses, or three-quarters of 1 per cent.; 247 adults over fourteen years, with nine relapses, or 3.7 per cent. In the 80 cases in which the cord was not transplanted, but in which the other steps of the technique were the same as in Bassini's method, there were four relapses.

Of 531 cases operated upon by Dr. Coley since 1891 95.5 per cent. healed by primary union.

Mortality of new series, operated upon since 1890, was five deaths in 917 cases, or two-fifths of 1 per cent. One death was due to hemorrhage from large omental stump in an enormous femoral hernia, one was due to ether pneumonia, one to acute peritonitis, a fourth to pneumonia, pericarditis and suppuration of wound in a very weakly child suffering from spinal disease, the fifth was in an irreducible cecal hernia in a child aged twenty months, and death was apparently due to shock. Only three of the deaths followed Bassini's method. Four were in children and three in adults.

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[9] Annals of Surgery, November, 1898, p. 577.

In speaking of the final results the authors state that of the 917 cases operated upon since 1890 295 were traced and found free from recurrence for periods varying from two to seven years after operation, 486 cases were well upward of one year after operation.

THE DISCUSSION OF CONTUSIONS OF THE ABDOMEN AT THE FRENCH CONGRESS OF SURGERY.

M. Demons, of Bordeaux,[10] in a systematic paper on contusions of the abdomen, introduced at the recent session of the French Congress of Surgery, stated that as a result of traumatism there are three classes of cases: (1) The abdominal walls alone are injured; (2) the abdominal walls are injured plus one or several organs; (3) the internal organs are alone injured. The immediate symptoms vary in nature, modality and intensity. Pain is rarely absent; sometimes it is slight, sometimes very severe. The pain may be local or widespread; it may even extend to distant parts of the body. Pain may be spontaneous or provoked. It may be severe in contusions limited to the parieties, and insignificant or transitory when there are grave visceral lesions.

One or two attacks of vomiting with slight or doubtful abdominal distention teach nothing. A common and decisive symptom is abdominal rigidity. With this rigidity there is sometimes a little distention, sometimes a flattening or even an excavation of the belly. This symptom belongs particularly to rupture of the hollow viscera.

The general symptoms are sometimes severe, sometimes *nil*. The presence of shock proves much, its absence nothing.

Moderate cases may go on as follows: (*a*) More or less quickly become mild; (*b*) become sensibly worse and then recover; (*c*) become suddenly serious; (*d*) become mild and then serious.

Insufflation of hydrogen per rectum as a means of diagnosis is condemned. So also is the injection of water.

By exploratory puncture one may find: (1) blood effused but not palpable; this measure is uncertain and not without its inconveniences; (2) liquids or gases escaped from their proper visceral cavities, — bile, urine, etc. Puncture has often given good results in cases of rupture of the bladder some time after the accident; (3) at a later date serous fluids, pus and blood.

Exploratory laparotomy is most seductive; it permits direct examination of the viscera and is the first step in operative intervention, which is the most rational treatment when lesions are present. If it was without danger it would get every vote, according to the author. But to operate one requires to administer an anesthetic for a longer or shorter time, and it is wise only to have recourse to operation if its advantages are greater than its inconveniences. Operation may be early, delayed or late. Early, when there is soon such an assemblage of phenomena that one is thrown into a condition of pessimistic doubt; delayed, when the case apparently slight at first soon exhibits symptoms which cause anxiety; one may delay operation until the patient has recovered from shock. Delayed operations are done in those cases where a longer or shorter time after the accident the patient is in a condition which presumes the existence of visceral lesion. Late laparotomy is done for late complications.

Medical treatment consists in combating shock and internal hemorrhage if they exist, in soothing pain and immobilizing the injured region of the organs affected, with the object of favoring natural recovery and preventing complications. This simple treatment has had much success and is always used by surgeons in cases of severe shock or when the injury is trivial.

Unanimity ceases when cases are doubtful. The method of "armed expectancy" where one is prepared to operate on the first appearance of absolute signs of visceral lesion, but not till then, is dangerous. Experience shows that when the symptoms reveal intestinal lesions complications have already arisen.

Theoretically, laparotomy is a soul-satisfying procedure. It permits one to keep the peritoneum and viscera from being soiled by noxious liquids, or to remove these liquids if they have already escaped. It permits the sure arrest of hemorrhage and furnishes the best means of attacking certain late complications. Practically it has not yet realized everything conceived for it. It is, however, certain that its statistics will improve.

Laparotomy ought to be early. The best time to operate is between the primitive and secondary phenomena of the trouble, that is, some time within twenty-four hours of the accident. But a number of observations demonstrate that immediate operation has given successes which would probably have been impossible after from ten to twenty hours, and therefore it is preferable. There is only one formal contraindication to laparotomy, and that is shock so great that the patient could not support the surgical trauma. There is little to say about the operative technique. A little cleansing is all that is required for a superficial laceration of a full organ; for deeper rents suture is good, and if this is impossible packing may be practised. Multiple tears or pulverization require resection or extirpation if the organ is not necessary to life. Hemorrhage is dealt with by ligation, forcipressure or packing. Rupture of hollow viscera requires suturing. If the hollow viscus is not necessary to life it may sometimes be better to remove it. Rupture of the excretory tubes (conduits excreteurs) requires sometimes suturing, sometimes anastomosis into its normal reservoir, or an accidental cavity, sometimes the extirpation of the organ from which it arises.

TREATMENT OF ABDOMINAL INJURIES.

Le Dentu[11] writes that hyperesthesia of the abdomen after injury is an indication for operation. That an increase in the respirations to twenty-eight or thirty per minute makes the indication absolute, and that cold extremities are also significant.

Chauvel[12] states that the surgeon, when confronted with gunshot wounds penetrating the abdomen, ought immediately to perform laparotomy, and look out for the various perforations of the viscera to see if he can close them, without waiting until peritonitis arises to force his hand.

Michaux[13] states that abdominal section is the only treatment to apply in contusions of the abdomen. It has been sufficiently demonstrated that the symptoms are not an adequate index of the gravity of the lesion or lesions; and, if one cannot tell what the injuries are, the only thing to do is to investigate. He states that Mendy found in 289 cases of contusion from the kick of a horse that 30 per cent. of the non-operated patients died; and also 71 per cent. of those operated upon. These figures have no value; for, in many instances, no details were given, and in 18 out of 25 operative cases peritonitis was already established. Of the author's cases, 20 in all, 14 of the patients were operated upon, with two deaths, while of the six not operated upon, two died.

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[10] Revue de Chirurgie, November, 1897, supplement; Annals of Surgery, March, 1898, p. 384.

[11] Le Progrès Méd., October 27, 1897: Monthly Cyclopedia of Practical Medicine and Universal Medical Journal, January, 1898, p. 31.

[12] Lancet, October 2, 1897.

[13] French Congress of Surgery; Medical News, November 27, 1897; the Monthly Cyclopedia of Practical Medicine and Universal Medical Journal, January, 1898, p. 31.

SUTURE OF ABDOMINAL WOUNDS AFTER LAPAROTOMY.

G. Minxewitsch[14] has investigated 19 cases of laparotomy cicatrices histologically, and concludes that the linea alba is the site by preference for an incision, that silk is the best suture material, that the simple suture through all layers is better than the method of suturing by layers. The simple single suture showed the best scar. In excessively thick or thin abdomens the suture by layers gave the best result, combined with simple suture of the upper layers.

THE OPERATION OF GASTRO-ENTEROSTOMY CONJOINED WITH ENTERO-ANASTOMOSIS.

Weir,[15] in discussing the present status of this operation, summarizes his views on the subject in the following conclusions:

(1) That gastro-enterostomy as usually performed is yet an unsatisfactory operation.

(2) That its principal relievable danger is from bile or stomach retention, due to operative defects, either primary or secondary, for example, spurs, kinks, twisted or distorted openings, and possibly stomach atony.

(3) That a posterior stomach opening favors gravity action by the evacuation of the organ, particularly if it is atonied, and diminishes the risk of pressure or of pulling on the attached intestine.

(4) That the operation is best conducted by means of the Murphy button.

(5) That a gastro-enterostomy associated with an entero-anastomosis in the afferent and efferent portions of the jejunum probably gives the best assurance against obstruction. Experience in this method, while so far gratifying, should, however, be enlarged, to ascertain if the increased risk of the additional button overtops the danger of the bile and pancreatic obstruction.

SURGICAL INTERVENTION IN HEMATEMESIS CONSECUTIVE TO EXULCERATION OF THE STOMACH.

Dieulafoy[16] summarizes his views on this subject as follows:

(1) Outside of the simple ulcer, which is a frequent cause of hematemesis, there is found a superficial loss of substance of quite large extent, which the author proposes to term simple exulceration.

(2) This form of ulceration the author believes is capable of producing a more terrible form of hemorrhage than that generally seen in the case of simple ulcers.

(3) The loss of substance in simple ulceration does not go deeper than the mucous layer; it takes in the muscularis mucosæ, however. The great and frequently deadly hemorrhage which results arises from the ulceration of one of the arteries which ramify in the muscularis mucosæ.

(4) Clinically, the simple ulceration has the symptomatology of the simple ulcer as described by Cruveilhier, of which it no doubt is the initial stage, but more frequently it begins quietly, and at the same time in a latent manner, with moderately severe hemorrhages.

(5) Surgical intervention is the preferable treatment for hemorrhages consecutive to simple ulceration. The abundance rather than the repetition of the hemorrhage is the indication for intervention.

(6) The operator should never forget that the stomach may present an apparently sound appearance and yet be the seat, in some part, of a simple ulceration. It is, therefore, essential to carefully examine the entire stomach, if necessary, with a lens, to detect the exulceration, which is frequently accompanied by ecchymotic areas which are points of repair.

Suture of the area involved with a small margin of sound tissue usually suffices in these cases. The operative results are generally more successful in this form of ulceration than in the case of simple ulcers, as the limitation of the lesion favors the surgical method of treatment.

SURGICAL TREATMENT OF GASTRIC ULCER.[17]

The writer classifies the indications for operation as follows:

(1) When hemorrhage, perforation or inanition threatens life either directly or indirectly.

(2) When the suffering of the patient is severe and not relieved by careful, thorough medicinal treatment.

In deciding upon surgical treatment it is important to contrast the danger from the existence of the ulcer to the patient, with the danger from operative interference. About three-fourths of the cases recover under medicinal treatment. The mortality is from 15 to 50 per cent. The patients with unhealed ulcers are in great danger to life, and are distinctly surgical cases. After 238 operations the technique has so improved that the mortality has been lowered to 10 per cent. The writer considers pyloroplasty preferable to pylorectomy, and that gastro-enterostomy occupies the middle place. Besides unhealed, open ulcers one has to consider surgical treatment in patients with old scars, with unbearable gastralgia and the results of stenosis. The disturbances disappear in a few months after the stenosis is relieved. The patients gain in weight. Excessive secretion of hydrochloric acid gradually diminishes in all cases. Mikulicz has seen an ulcer of nine years' duration heal after pyloroplasty.

Of the different operations pylorectomy is the most dangerous. The writer mentions three methods of operation, namely, a circular resection, the removal of a segment, or the wedge-shaped resection. The operation does not give especially superior permanent results. He then contrasts the advantages and disadvantages of pyloroplasty and gastro-enterostomy.

If a case is not unsuitable, in spite of all the advantages of gastro-enterostomy, pyloroplasty is the less dangerous and more certain operation. The stomach wall should be soft, yielding and elastic. In cases of perforation an operation must be done at once, at least within ten hours. Sometimes when the operation is done during shock collapse at once follows. Mikulicz in such cases operates preferably with cocaine. He agrees with Leube, that frequent small hemorrhages indicate an operation. With active, copious hemorrhage interference is always difficult and uncertain, since the site of the bleeding vessel is almost always inaccessible.

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[14] Centbl. f. Chir. 1899, Bd. xxvi, 225.

[15] Medical Record, April 16, 1898; American Journal of Medical Sciences, October, 1898, p. 477.

[16] La Presse Méd., January 19, 1898; American Journal of Medical Sciences, October, 1898, p. 475.

[17] Von Mikulicz: Mitteilungen aus der Grenzgebieten der Med. und Chir., Bd. ii.

(To be continued.)

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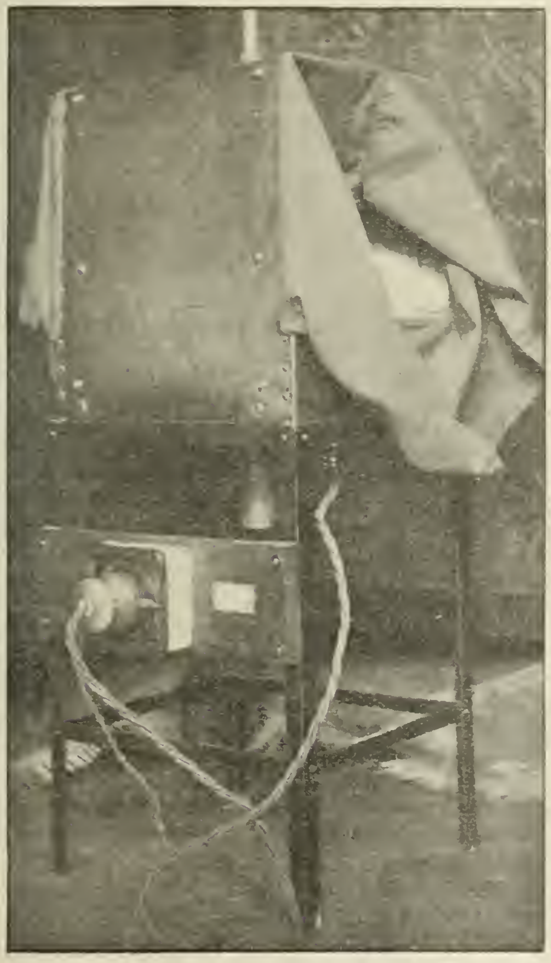
New Instrument.

AN OVEN HEATED BY ELECTRICITY FOR THE HOT AIR TREATMENT OF JOINTS.[1]

ROBERT W. LOVETT, M.D., BOSTON.



The form of hot air oven here described is one in which the heat is supplied by electricity instead of by gas or alcohol flame. The advantages of electric heat for this purpose are chiefly in the even distribution of the heat through the oven and in the impossibility of conflagration, which has occurred at times from the use of gas, which has set fire to the wrappings of the limb.

The writer's oven was one formerly heated by gas and changed over, and is merely a copper oven ten inches wide, eleven long, and twelve deep, with ventilating holes in the top. This oven is lined with asbestos board. The electric heaters are three in number, one at each side and one at the bottom. They are made of steel plates one-eighth of an inch thick, on one side of which is burned enamel in which is imbedded high resistance electric generators. These plates are so arranged that only a portion of the wires in each plate may be in service at a time, if desired, by connecting them with the different circuits, so that three grades of heat may be furnished. The maximum current supply required is ten ampères at one hundred and ten volts, which is the equivalent of twenty 16-candle-power lamps. Starting with the oven and plates entirely cold, it takes about ten or twelve minutes to develop a temperature of 300° F. The oven is connected with an electric light wire by a cord and plug; the plug can be inserted in the receptacle in the oven in one of three ways, to produce a medium, high, or low degree of heat. In practice it has proved possible to raise the temperature to the required heat and then, by changing the plug to the low degree of heat, to maintain that temperature practically constant for an indefinite time.

The cost of the oven is more than when gas heat is employed. Assuming the cost at one cent an hour for each lamp, it costs about five cents to raise the oven to a heat of 350° F., and maintaining the oven at that temperature costs one or two cents more for each half-hour.

Patients who had previously had joints heated in the same oven supplied by gas, when the change from gas to electricity was made, spoke of the greater comfort of the same degree of heat supplied by the electricity. The same degree of heat as that furnished by a gas oven is borne with no greater discomfort.

The form of oven described is by no means perfected, but has been sufficient to demonstrate the practical usefulness and advantage of electrical heat in this connection.

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Reports of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Stated meeting, January 3, 1899, Frederick Peterson, M.D., President.

A CASE OF DISSEMINATED SCLEROSIS.

Dr. L. Stieglitz presented a boy, seventeen years of age, a native of New York City, one of a family of nine children. None of the others showed his condition. When six years of age it was noticed that he walked peculiarly, and a year later he began to have attacks of intense headache and of vomiting. About three years ago the headaches became less severe, but recently they have had their former intensity. There is often trouble in urinating. Examination shows a fairly well developed boy, presenting the typical gait of cerebellar ataxia. The muscular power is generally diminished, particularly in the right arm. There is a distinct hemiplegia. There is nystagmus in both eyes, and divergent squint. The fundi appear entirely normal. The speech is thick, nasal and drawling. The speaker said regarding the diagnosis that if the affection had been more recent he would have been led to think of brain tumor. Syphilis of the brain could be excluded, not only on account of the personal and family history but because of the negative results under antisyphilitic treatment. Friedreich's ataxia could be excluded because of the hemiplegia and increased knee-jerks. He looked upon the case as one of disseminated sclerosis. Plaques in the cerebellum would account for the cerebellar ataxia, and plaques in the left hemisphere would account for the right hemiplegia.

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[1] Read at the Medical Improvement Society, February, 1899.

Dr. **Graeme M. Hammond** said that he had examined this person a number of times, but was not quite ready to accept the diagnosis of disseminated sclerosis. There were changes in the mentality, and a younger sister exhibits evidence of beginning degeneration of the brain. He was inclined to think that there was an atrophy of all parts of the cerebrum.

Dr. **Stieglitz** did not think that the deficient mentality negatived the view that the case was one of disseminated sclerosis. He had not seen the other children.

INSTRUMENT FOR MEASURING THE PATELLAR REFLEX.

Dr. **Haynes**, of Brooklyn, exhibited this instrument, which he had devised for measuring the reflexes, and demonstrated its action. The apparatus consists of an oblong iron stand on casters. To one end of this is attached an upright iron rod carrying a large metallic semicircle with convenient graduations. At the centre of the upright is hinged an aluminum arm, and the other end of this arm swings along the brass arc and can be fastened by a screw clamp. The aluminum arm is placed against the tip of the patient's foot, and the reflex tested. The arm is kicked upward by the foot to a greater or less extent, and the spring clamp is left clinging to the point on the arc to which it was kicked.

Dr. **L. Muskens** said that he had been working in the laboratory of Professor Bowditch, in Boston, with a much more accurate instrument intended for the same purpose. His work in this line had taught him that it was not so much the liveliness of the knee-jerk as its quality which was of importance both in research and clinical work. The readings in such an apparatus were also greatly vitiated by the adjustment of the instrument and the angle at which the foot strikes the arm.

SOME POINTS OF SPECIAL INTEREST IN THE STUDY OF THE DEEP REFLEXES OF THE LOWER EXTREMITY.

Dr. **Charles K. Mills**, of Philadelphia, read a paper with this title.

Ankle Clonus with Absence of Knee-jerk. — This was the first topic considered. A man had been admitted to the hospital with paralysis of both legs and painful and labored respiration. There was good muscular development, but he was poorly nourished, and suffered from organic heart disease. When examined, his right leg appeared to be completely paralyzed and semiflexed at the knee; there was analgesia over the anterior and outer aspects of the right thigh and on the leg in the same regions. There were areas of anesthesia in the left lower extremity. The areas chiefly affected were those supplied by the anterior crural and musculo-cutaneous and superficial peroneal nerves. The muscle jerk was marked, in spite of the muscular degeneration. Both knee-jerks were absent, on repeated examination. Ankle clonus was present on the left side, though it was quickly exhausted. It was absent on the right side. He died forty-eight hours after admission. The autopsy revealed pleuritic effusion, pulmonary edema, marked lesions of the aortic and mitral valves and fatty change in the heart muscle. Microscopical examination of the nerves, muscles and cord was made in the laboratory of the University of Pennsylvania. The spinal cord appeared to be perfectly normal, even after most careful examination. The anterior crural nerve appeared to be slightly degenerated, and the muscle fibres were intensely degenerated. It, therefore, seemed not improbable that many of the symptoms at first thought to be due to cord or nerve diseases were really the result of the affection of the muscles. His clinical diagnosis had been a focal lesion, probably in the second or third lumbar segment of the cord. The change within the muscle was attributed to the improper nutrition from the defective circulation arising from the cardiac disease. It was probable that the extent of diseased nerve was greater than that indicated by the microscopical examination. He attributed the loss of the knee-jerks to the disease of the muscle, or conjointly to this and disease and degeneration of the crural nerves. The explanation, however, of the distinct and persistent clonus on one side was not so easy. It was possible that the unilateral ankle clonus in this case was due to a neuritis attaching the branches of the nerve to the tendo Achillis. The knee-jerk is probably due (1) to direct stimulation of the muscle; and (2) to direct reflex influence. According to different observers, it would seem that the reflex arc may be situated anywhere from the first to the fifth lumbar segment, most probably in the second or third lumbar segment. Some clinical and anatomical considerations, including a study of special cases of tabes, seemed to indicate that the segment of the cord concerned in the Achilles reflex is situated somewhere between the first and third sacral segments. But it was not enough to know the particular segments concerned; lesions affecting the spinal cord at the proper level to include the reflex arc might, if limited to certain transverse regions of the cord, permit the reflex act to be consummated. He had been able to find a record of only eleven cases, including the one just reported, in which there had been loss of the knee-jerk and persistence of ankle clonus. In one case ankle clonus had been observed after the patellar reflex had disappeared. Erb had recorded a case in which reflex clonus and biceps tendon reflex were observed, but the patellar reflex and the reflex of the adductors could not be elicited.

The author's conclusions regarding this part of his subject were: (1) The syndrome may be due to a compressing or destroying lesion, such as pachymeningitis or transverse myelitis, involving the spinal cord between the first and fifth lumbar segments, probably between the second and third segments; (2) it may be due to disseminated sclerosis, the foci being present in the reflex arc for the patella, and in the lateral columns; (3) it may be due to focal lesions, such as hemorrhage or softening, attacking points in the reflex arc; (4) it may be due to defects in the gray matter of the lumbar segments; (5) this syndrome may be due (as in the case just reported) to a combination of muscular disease with disease of the crural nerves; (6) it is probable, on theoretical grounds, that it may be due to a cerebral lesion in the cortex, or to arrest of development associated with disease, inflammation or degeneration, limited to the crural nerves and their muscles.

The Significance of Ankle Clonus in the Diagnosis of Hysteria from Organic Disease.— This was the author's second topic. He said that the majority of neurologists seem to disagree with Gowers and himself regarding ankle clonus in hysteria and other functional affections. His own views were practically in accord with those expressed by Gowers in his published treatises. The principal reason for the different views held by other neurologists was the non-recognition of the coexistence of organic lesions, and especially focal lesions, and hysteria in the same case, together with a misinterpretation of the cases in which toxemia and malnutrition are more important than hysteria. He had collated thirty medico-legal cases — cases of traumatic hysteria — in which ankle clonus was present in three, and in all of these it was of the spurious or abortive type.

Patellar Clonus. — This was the third subject considered. He said that the most common method of producing this clonus was by grasping and pushing down the patella between the thumb and index finger. This could be facilitated by a metallic ellipse, which acts as a tractor. He had examined 100 patients in his wards for patellar clonus, but had only succeeded in eliciting it in six. In two of these it was only slight. In one hemiplegic it was slight on the paralyzed side. In a case of syringomyelia it was present on both sides. It was also well marked in two cases of cerebro-spinal syphilis. Although the patellar clonus was present in these two cases, ankle clonus was absent — a clinical fact which seemed to call in question the statement made, that patellar clonus is the highest expression of reflex irritability in the lower extremity. In one case of uremia at the first examination both ankle clonus and patellar clonus were present, but disappeared as the patient was relieved of his uremia.

Tendo Achillis Jerk in Tabes. — This was the last topic discussed in the paper. The author said that he had examined 28 well-marked cases of tabes, and in only three had the Achilles jerk been preserved. He had also examined the other 72 cases of the 100 examined for patellar clonus, and in every instance the Achilles jerk had been present. The method of examination consisted in having the patient kneel on a chair, and take hold of its back while the tendo Achillis and the gastrocnemius muscle are struck with a percussion hammer. This study of the tendo Achillis jerk had yielded no very practical results. In a case supposed to be one of cerebellar tumor there was loss of knee-jerk, quadriceps jerk, gastrocnemius jerk and tendo Achillis jerk, yet the diagnosis of tabes had been made in this case at one time. In two cases referred to him with a diagnosis of locomotor ataxia the tendo Achillis jerk was present. This test is simply confirmatory of the results obtained from examining for the knee-jerk. It also enables one to very accurately localize the degenerative process in cases of tabes.

Dr. Charles L. Dana said that he did not recall in his experience having met with ankle clonus in connection with absence of the knee-jerk. He was absolutely in accord with Dr. Mills and Dr. Gowers as to the connection of ankle clonus with hysteria. He did not believe that in true hysterical paralyses there is any ankle clonus; if it does occur, it is due to some toxemic or organic disorder. At one time he had studied a series of 20 cases of hysterical paralyses, and had been impressed by the fact that the knee-jerks were diminished and the tonus somewhat lessened in this form of paralysis. But there was a form of paralysis which might be considered, in which there is an ankle clonus. He had recently seen in consultation a lady of forty years who had had for a number of years certain neurasthenic symptoms, and who finally suffered intense pain in the back and developed partial paraplegia. Finally she could hardly move the legs at all. There was at this time a genuine and persistent ankle clonus, and it was associated with all the other evidences of exaggerated reflex excitability. After about one month the patient recovered completely. He had since seen a similar case associated with spinal irritation, neurasthenic symptoms and functional paraplegia. These cases, however, were not true examples of the hysterical state; they were examples of profound nerve exhaustion. These exceptions did not vitiate the general statement, that hysterical palsies are not accompanied by ankle clonus.

Dr. B. Sachs said with regard to the question of the loss of knee-jerk and preservation of ankle clonus, that he now had under observation a case of lumbar vertebral disease in which there was absolute loss of knee-jerks and occasional presence of ankle clonus. In this case there could hardly be any difference of opinion regarding the affection being situated in the lumbar portion of the cord. The preservation of ankle clonus was probably because the lesion was limited to the upper lumbar segments. He had only seen one other similar case. He was disposed to agree entirely with the view taken by Gowers and Mills regarding the relation of ankle clonus to hysteria. He had noted ankle clonus in a case of distinct hysterical paraplegia in a child. The child recovered in a few months, and with its recovery the ankle clonus disappeared. He had observed the same thing in a young man suffering from neurasthenia. This gentleman had been under observation for a number of years, and, while the neurasthenic condition improved, the reflexes remained almost unchanged. It was very interesting that ankle clonus should not be present in neurasthenia, in view of the frequent exaggeration of the patellar reflex. As to the question of the dependence of the absence of knee-jerk upon the degeneration of the muscle fibre, it should be noted that this was probably the explanation of the absence of knee-jerk in muscular dystrophies.

Dr. G. M. Hammond said that he agreed with the last speakers with regard to the occurrence of ankle clonus with hysteria, as a rule, and yet he had seen at least three or four cases in which the ankle clonus had certainly been present. When those conditions do exist it is exceedingly difficult to make the differential diagnosis between hysteria and organic disease. For some years he had been making some observations in such cases concerning the effect of etherization. The ankle clonus was found to be maintained even under full etherization, when there was an underlying organic disease, although this was not the case in hysterical subjects.

Dr. W. M. Leszynsky said that during the past summer he had had under observation a man with certain symptoms of transverse myelitis. Examination showed the absence of both knee-jerks and presence of ankle clonus on both sides. In addition, there was a clonus affecting the gluteus maximus muscle on one side. He hoped to be able to present this patient some time. He had seen ankle clonus at least three times in patients who had been under observation for a number of years, and who had not developed any organic disease. He asked Dr. Mills if he had ever noticed ankle clonus produced by tapping the Achilles tendon while the foot is flexed in the usual manner. It was only in this way that he had been able to demonstrate it in two or three instances.

Dr. L. Muskens said that in 33 cases of tabes, which he had examined with Dr. Fraenkel, the reflex had been absent in all. It was very important to make the percussion with the hammer very low.

Dr. Joseph Collins asked Dr. Mills if he believed that the actively contractile substance of the muscle in his first reported case was in such a diseased state that it was thrown into clonus by the tap on the tendon. Regarding the occurrence of clonus in hysterical conditions, he called attention to the fact that he had seen cases of traumatic hysteria, diagnosticated as hysterical, in which there was an ankle clonus, and in which recovery had taken place. He could not differentiate such cases from true hysteria.

Dr. F. Peterson said, regarding the presence of ankle clonus in hysteria, that he had never seen a genuine clonus in a case of pure hysteria.

Dr. Mills closed the discussion. In answer to Dr. Collins he said that the explanation in that case was not very clear, but he believed the loss of knee-jerk was due to a combination of muscle and neural disease, both of which were demonstrated by the microscope. Probably the nerve to the tendo Achillis had been in a state of neuritis earlier, and so caused an excitation of the ankle phenomena. There was, of course, a possibility of a focal lesion having escaped detection. In the examination of some of the cases of tabes for tendo Achillis jerk slight clonus was found in two. He had elicited tendo Achillis clonus by tapping on the tendon, when ankle clonus could not be elicited by simply placing the foot in dorsal flexion. The patient's knees should be placed close to the chair on which he leans, and the tendon should be percussed near the heel. As to the question of ankle clonus in hysteria, he would again emphasize the necessity for more explicit statements regarding it. In every case one should discriminate carefully between spurious, abortive and the clonus of the uniform and persistent type. He took the position that in a very limited number — probably less than five per cent. — there would be found the abortive or spurious type of ankle clonus. In one definite and limited class of cases usually regarded as hysterical, and sometimes with other stigmata of hysteria, such as the sensory changes, one meets with what appears to be ankle clonus. This is the class of cases characterized by hypertonicity. True ankle clonus with hemiparesis or hemiplegia he considered almost pathognomonic of organic disease.

A CONTRIBUTION TO THE STUDY OF CEREBRO-SPINAL MENINGITIS.

Dr. Lewis A. Conner read this paper. It was based upon 60 such cases, occurring at the Hudson Street and New York hospitals. Every effort had been made to exclude those in which the meningitis was secondary to other processes. Of the 60, 21 occurred in 1893, the year in which the disease was especially prevalent in various parts of the country. Ten occurred in each of the last two years. One-half of all the cases occurred in the spring months — March, April and May. Seventy per cent. occurred in males; 32 per cent. under the age of fifteen years, 43 between fifteen and thirty and 25 in those over thirty years. The youngest case was that of a child of two months, and the oldest a woman of sixty-five years. In only one was there a distinct history of exposure to cold immediately preceding the attack. No two of the cases came from the same family, although two negroes occupying the same room were attacked within a few hours of each other, and both died in a short time. Post-mortem examinations were made in 18 of the 41 fatal cases. In the very acute cases there was marked congestion of the meningeal vessels. The exudate was often so slight as to be scarcely perceptible, except in cases lasting two weeks or more. The lateral ventricles were often distended with purulent fluid. The greatest involvement in the cord was in the dorsal and lumbar portions, and always on the posterior surface. Microscopical examination showed constant involvement of the subjacent brain tissue. The common involvement of the cranial nerves was also noted.

Councilman and his associates are convinced that the specific cause of epidemic cerebro-spinal meningitis is the diplococcus intracellularis. In the thirty-five cases examined by them the organism was found in all but four. The organism is observed almost exclusively in the pus cells. It is an aërobic bacterium, which grows best on blood-serum agar. It had been previously considered that the diplococcus lanceolatus, or the pneumococcus, was the organism responsible for this disease. Bacteriological examination was made in ten of the cases reported in the present paper. In three autopsies in which the culture results were negative only ordinary culture media were used. The diplococcus intracellularis was found in only four of the cases, and the pneumococcus in about the same proportion. All of the usual types described were represented in this series. All of the fulminant cases were marked by early delirium and coma. Twenty-six ran their course in two weeks, and all ended fatally. There were two of the intermittent type. Thirteen lasted more than one month, and of these eleven recovered, the longest being for three and one-half months. The onset was sudden in thirty-nine cases. The temperature was markedly irregular, but there were several distinct types. In a number the temperature was normal or subnormal throughout the disease, or up to a short time before death. In a second type the temperature was moderate most of the time. In others the temperature rose gradually, and then fell, whether or not recovery took place. These cases resembled somewhat typhoid fever, but not infrequently the highest temperature was in the morning. In the fulminant cases the temperature was sometimes nearly normal for the first few hours. The pulse also varied greatly, and was independent of the variations in temperature. Retardation of the pulse was not common or marked except in two cases. Where the symptoms were active an almost constant symptom was a marked increase in the respiration-rate. Vomiting was present at some time in over one-half; in 25 it appeared at the onset, and in 15 only at that time. In 15 it remained a prominent feature throughout the disease. In no case was the vomiting "projectile." There was more or less pain in all cases, and it was usually in the form of an intense occipital headache, but there was not infrequently pain in the back, limbs and chest, sometimes especially marked on one side. The reflexes presented no constant feature. Greater or less rigidity of the muscles of the head, neck and back was present in almost every case. Rigidity of all the extremities was also common. There was no uniformity about the appearance of the pupils. In one case which recovered there was consciousness throughout. In a large proportion delirium and stupor alternated. Some of them were marked by an unusual form of delirium, simulating hysteria. Skin manifestations were observed in 25 per cent. but the hemorrhagic eruption was seen in only three of the cases. A distinct leucocytosis was present in most of the cases in which the blood was examined. The spleen was enlarged in 23 per cent. Albuminuria was a usual accompaniment of the disease.

Dr. Joseph Collins said that he thought the paper went to prove rather than disprove the theory that attacks of cerebro-spinal meningitis are entirely distinct in their causation and pathogeny from those which develop sporadically. In very few of these cases was the diplococcus intracellularis found, whereas it was almost constantly present in the epidemic cases studied by Councilman. The cases reported in the paper had been clearly shown not to be of the epidemic variety. He would, therefore, still maintain the opinion published elsewhere, that the epidemic form is entirely different in its causation and pathogeny from the sporadic, the former only being associated with an individual organism. It was true, however, that the latter was commonly associated with the diplococcus of pneumonia.

Dr. Sachs thought the statistics just presented in the paper might lead to some confusion. He did not think the diagnosis of epidemic cerebro-spinal meningitis could be made positively at the present time until post-mortem examination. The prognosis in this series was evidently rather better than that usually observed in epidemic cerebro-spinal meningitis. Recently he had seen, in consultation, a girl of eighteen who, within a few hours, was comatose, and died within twenty-four hours. The autopsy revealed the diplococcus intracellularis. Such cases should hardly be placed in the same category with the epidemic form.

Dr. Conner said that he had refrained from using the term "epidemic meningitis" because he had been unable to convince himself that epidemic and sporadic meningitis were different diseases. One or two of the cases in which the pneumococcus was found occurred in 1893, a year in which this disease was epidemic. A case which developed last summer, after exposure to the sun, was followed for two months, and was examined after death, and the diplococcus intracellularis discovered. In this case, as well as in the one referred to by Dr. Sachs, the disease was evidently sporadic, and yet the diplococcus intracellularis was present. He could not therefore accept the position taken by Dr. Collins. It seemed to be impossible to distinguish clinically between the two forms. The mortality in his cases was 65 per cent. — exactly the rate found by Councilman in the epidemic at Boston.

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EXPERIMENTATION ON THE HUMAN SUBJECT.

There is a certain danger that the enthusiasm for research, which is now everywhere apparent, may at times go so far as to bring discredit upon the profession which it is designed to enrich. We refer to experimental research with man as its subject. Had it not actually happened we should hesitate to suppose for a moment that an investigator's zeal could so far gain the mastery over his principles that he would wilfully expose to added disease any persons, however previously afflicted, or however short their term of life might be. A principle of far-reaching consequences is certainly involved in such an attitude.

An experimenter, to be successful, must above all be enthusiastic. We excuse and at times commend what to a soberer judgment must be regarded as an excess of zeal. We refrain from criticism so long as we know the feelings actuating the experiment are prompted by motives which can stand the test of a fair and liberal public opinion, even though we, in our ignorance, may not fully appreciate the bearing of such experiments. There is, however, a point beyond which experiment should not go, and that may be safely placed at man himself.

We have at times heard it remarked that condemned criminals might legitimately be made the subjects of experimental research. So far as we are aware this has never actually been done, and certainly a strong public opinion will continue to oppose an insurmountable barrier to such experiments, as it always has done in the past. From time to time, however, efforts have been made to determine questions of doubt by experimentation on human subjects. Such efforts have never passed unchallenged, and certainly we take no prudish position if we vigorously oppose their repetition, whatever the end to be attained.

A recent number of the *Medical Press and Circular* has a strong editorial commenting on certain experiments, which it rightly condemns in vigorous language. The writer refers to experiments carried out in France some years ago, the object of which was to demonstrate the transmissibility of cancer. The observations met with general condemnation, and were regarded as wholly unjustified. According to our contemporary, the idea suggested by these experiments has recently been dramatized in Paris, in an extravagant piece which is nevertheless likely to create a strong public sentiment detrimental to medical science. The plot of the play in general is as follows: A physician is represented as having attempted to transplant cancer in the person of a young woman ill with phthisis. For purposes of dramatic art, the woman rapidly recovers from her tuberculosis, but the transplanted cancer grows. Curiously enough the very day this play was being given at a Paris theatre "a member of the German Parliament" (we quote from the *Medical Press*) "called attention to the fact that a certain professor had actually published observations from which it appeared that he had injected eight healthy persons with the serum of syphilitic subjects, with the result of communicating syphilis to four of them. The minister admitted the gravity of the charge, and promised an inquiry, adding that if the facts were as stated, no consideration of persons would be allowed to stand in the way of justice being done and of steps being taken to exonerate German science from such a reproach, with the object of effectually preventing the repetition of any similar scandals."

The professor referred to is a syphilographer of note, who set himself to decide the interesting question regarding immunization from syphilis, and as to whether the serum of syphilitic persons was capable of communicating the disease to healthy persons. He made use of serum obtained from syphilitic subjects, supposedly sterile, hoping no doubt to render those experimented upon immune. With this eight girls were injected. Three years later one of the girls came to the hospital with cerebral syphilis. Three others developed syphilis, one month, five to six months, and a year, respectively, after the inoculation. Of the girls five were prostitutes and four of these developed the disease. The experimenter denies that the infection was due to the injections, but that they might have contracted the disease before or after the inoculations. If the experiment were open to so serious a source of error, why make it at all, we may ask?

After all, the principle involved is the important point. Such experiments are instituted for a definite end, which absolutely is not justified by the means. Were we to open the door to such experimentation, and look on the results with complacency, we should certainly be only next in moral guilt to the experimenter himself. We surely have no right to add to the burden of any human being by a deliberate experiment with disease, whatever the social or physical state of that person may be. The editorial from which we have already quoted admirably sums up the matter when it says:

"All measures, even if novel, which may reasonably be expected to assist in bringing about the recovery of the patient without injury to his health may legitimately be resorted to, with the consent of the patient, but measures, whether by drugs or by operation, which have not for direct object the cure of the patient, and which may prove inimical to his health or condition, are inadmissible under any circumstances, and must expose the perpetrator to professional ostracism and to penal rebuke."

THE SPITTING NUISANCE.

It is reported that the Board of Health has undertaken a crusade against the man with the spitting habit, and that it is likely that arrests may be made, in the hope that, through example, the evil may gradually be abated. We certainly wish the Board every success, though anything like a radical cure is hardly to be expected. The absolute disregard of decency, not to speak of the frequent menace to public health, is certainly reason enough for active measures. It is, after all, nothing more than a very bad public habit. Few people are obliged to expectorate, and yet comparatively few make any effort to control their desires in this regard. A slight stimulus in the shape of an occasional arrest would no doubt do much to break up this almost universal habit. The street cars are unquestionably less defiled than before the ordinance regarding spitting was placed in them, and we see no reason why the streets and public places in general should not have as happy a fate, if the reform is pushed to the point of making a public impression.

MEDICAL NOTES.

APPOINTMENT. — Dr. A. L. Nicholson has been appointed to the chair of gynecology in the Long Island College Hospital, rendered vacant by the resignation of Dr. A. J. C. Skene.

TETANUS IN THE PRAGUE OBSTETRICAL CLINIC. — For the past two years, according to the *Medical Record*, there has been at the obstetrical and gynecological clinic of the Czech University of Prague a succession of cases of tetanus, many of which, despite the employment of tetanus antitoxin, resulted fatally. The disease extended in time to the school for midwives, and recently has invaded the gynecological clinic of the German University, although the greatest care has been constantly observed to prevent the occurrence. The presence of the disease has led to the temporary closing of the clinic.

SUIT FOR MALPRACTICE AND JUDGMENT FOR TWO THOUSAND DOLLARS. — On Wednesday morning it was published in the New York daily newspapers that an action had been closed against Dr. Thomas H. Manley, and judgment ordered in the sum of two thousand dollars, no defence being offered. It appears that a woman had brought an action against Dr. Manley alleging malpractice in the surgical treatment of a disease of a thumb. As Dr. Manley had received no notice of the trial or date for a hearing judgment was given before a sheriff's jury in the amount claimed. Immediately after a motion was made for reopening the case, which was granted. This case is peculiarly interesting to the profession as the woman was a charity patient treated in a public institution.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, April 18, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 29, scarlet fever 26, measles 131, typhoid fever 25, small-pox 1.

A new Strength Record. — Henry F. Cochems, a student at the Harvard Law School, is stated to have broken all college records of strength-tests recently, by making a total of 1,761½ points. The best previous record was a total of 1,716.

Vaccination. — Owing to the fact that certain cases purporting to be small-pox have recently been discovered in the city, measures have been taken by the Board of Health to provide free vaccination. The stations are at the various schoolhouses throughout the city and already many have availed themselves of the opportunity for prophylaxis afforded them. The vaccination is being done by physicians who have volunteered for the work.

A Centenarian. — It is reported that Mrs. Betsy Young has died at the Asylum for the Insane, Middletown, Conn., at the age of one hundred and four years. She is said to have been insane for nearly forty-five years.

NEW YORK.

Hospital Saturday and Sunday Association. — The Distributing Committee of the Hospital Saturday and Sunday Association met on April 14th and apportioned to the various hospitals and dispensaries represented in the Association the proportion of the annual collection fund to which each was entitled by the number of free days' treatment provided during the year. The total collections this year reached the unusual amount of $70,000, of which $9,000 was in contributions for specially designated institutions, $3,000 was required for general expenses, and the remaining $58,000 was distributed on the basis mentioned. The institutions receiving more than $2,000 were the following: Montefiore Home for Chronic Invalids, $5,800; St. Luke's Hospital, $5,420; Mount Sinai Hospital, $5,318; Roosevelt Hospital, $3,728; German Hospital, $3,728; Hospital for Ruptured and Crippled, $2,357; St. Mary's Free Hospital for Children, $2,257; Nursery and Child's Hospital, $2,066; Home for Incurables, $2,063; Isabella Heimath, $2,005.

A New Medical Society. — There has recently been organized and incorporated a new society, entitled the Medical Association of the Greater City of New York, which is designed to represent the regular profession of all the five boroughs, and is based on the general lines of the charter of the consolidated city. On the list of thirty-six incorporators are many prominent medical men. The trustees of the Association for the first year, as named in the articles of incorporation, are as follows: Drs. S. B. W. McLeod, A. D. Ruggles, P. Brynberg Porter, John H. Hinton, Stephen G. Cook, N. G. Bozeman, William M. McCallom, R. M. Wyckoff, H. S. Benton, S. Carrington Minor, R. S. Prentiss and W. C. Walker.

Annual Report of State Commission in Lunacy. — The annual report of the State Commission in Lunacy was presented to the Legislature on April 10th. The committed insane in the State at the close of the year numbered 22,386, of whom 20,845 were in the general State hospitals, 686 in the State Hospital for Insane Criminals, and 855 in private institutions. During the year there were 4,473 original admissions, and 1,757 deaths, 1,018 patients were discharged as recovered from State hospitals, and the net increase in asylum population was 683. The congestion existing in the Manhattan and Long Island Hospitals is to be relieved by transferring a portion of the patients to the western part of the State, pending the completion of increased accommodations on Ward's Island and at the Colony at Central Islip. The average daily per capita cost of food supplies in the State hospitals is now fifteen and one-third cents, and the Commission has arranged with Prof. W. O. Atwater, the chief food expert of the United States Government, to prepare separate dietaries suitable respectively for the chronic insane and for acute or curable cases. The Pathological Institute established in New York City is specially commended in the report for its good work during the year in connection with the State hospitals.

A Physician as President of the New York City Board of Health. — For many years past the medical profession has been endeavoring to secure an enactment which would make the position of president of the New York City Board of Health eligible for physicians, and at last this seems likely to be accomplished. On April 10th the Assembly at Albany passed a bill which makes it permissible for the mayor to appoint as president of the Board of Health one of the medical men who are members of the Board.

Kissing the Bible. — The Assembly has also passed a bill providing that a witness or prisoner shall lay his hand on the Bible, instead of kissing it, while the oath is being administered. If the witness will wear gloves to protect himself from the risk of scabies or other possible skin disease he would seem now to be reasonably free from the danger of infection when taking the oath in a court of justice.

Taxation of Medical Societies. — A bill recently passed by the Assembly provides that the property of medical societies in New York and King's Counties shall be exempt from taxation provided that such exemption shall not exceed $100,000.

The Compounding of Drugs. — The compounding of drugs or prescriptions by others than licensed pharmacists or those working directly under their supervision, in the city of New York, is hereafter to be regarded a misdemeanor; provision has also been made for a system of inspection of pharmacies to insure the enforcement of the law.

Prohibition of the Six-Day Bicycle Race. — Governor Roosevelt has signed the bill passed by the Legislature prohibiting bicycle racing for a greater period than twelve hours in any twenty-four hours, so that in future the public will be spared the melancholy spectacles of exhaustion that have hitherto characterized the six days' races at Madison Square Garden.

New Vice-President of the State Board of Charities. — Dr. Enoch V. Stoddard, of Rochester, has been re-elected vice-president of the State Board of Charities.

Small-Pox from Europe. — The North German Lloyd steamship *Lahn* arrived at quarantine from Bremen and Southampton on April 13th with ten cases of small pox on board. The patients, among whom there were two adults and eight children, were, together with three mothers of the children, transferred to the Reception Hospital, at the foot of East 16th Street, and all the other steerage passengers were taken to Hoffman Island for observation.

Miscellany.

THE WOUNDED DERVISHES AT OMDURMAN.

In view of the various exaggerated newspaper reports which have been published, relative to the conditions on the field immediately after the battle about Omdurman, the following letter to the *Lancet* from a British physician in charge of a field hospital will be of interest:

> As it is impossible to reply to assertions made in the lay press will you allow me, as one who passed over the battlefield immediately in the rear of the British troops after both engagements, to contradict most emphatically the assertion that no aid was given by our medical officers to the wounded Dervishes? As far as we were able, during the brief halts which took place on our march into Omdurman, every assistance that could possibly be given, with due regard to the needs of our own men, was freely rendered by my field hospital and by the medical officers who were in charge of the stretcher-bearers and camel *cacolêts*. Whenever we halted for any space of time and none of our own people claimed our attention my men were constantly giving water and extemporising dressings (often at great personal risk) to the many wounded Dervishes who lay about. Moving slowly, as we were compelled to do, having so many stretcher cases to take into Omdurman, I had the fullest opportunities of seeing the behavior of the Egyptian native servants and *saises* towards the wounded, and only on one occasion did I see anything approaching "harsh" treatment adopted towards the wounded, and that was when a Dervish deliberately hurled a spear at an officer of the Royal Army Medical Corps who had been a moment before giving him water.

COMPLETE PENETRATION OF THE BRAIN BY AN IRON RAMROD.

A case which in some respects strongly reminds us of the historic "Crowbar Case" has been published by Barritt in the *Lancet* for January 7th. A boy of fifteen in the act of loading a gun accidentally discharged it while the ramrod was still in the barrel, driving the iron rod, which was thirty and one-half inches long and five-eighths of an inch in diameter at its largest part, completely through his head and some fourteen yards beyond. It was afterwards found with his cap, which it had transfixed. The ramrod entered slightly above one eye and came out in the upper parietal region considerably behind the median transverse line. The symptoms resulting were paresis of one arm, semi-consciousness, associated with much irritability. There was no permanent speech defect nor any impairment of the mental faculties. The skull was naturally fractured and bits of brain and bone were extruded for some time. The temperature was never higher than 100°, and, finally, practically complete recovery took place, even to the paretic arm.

In comparing this important case with the "Crowbar Case" there are, evidently, several features in common. Both were destructive injuries of the brain effected by very hard elongated objects driven at a high rate of speed, and in both instances the rod entered the head a very short distance from its point of discharge. In both cases, too, although the direction of the projectile was different, the same portions of the brain, in general, were involved. In comparing the cases, however, it should be remembered that in the "Crowbar Case" the iron rod was longer, and very much greater in circumference, and, more important still, that the accident occurred long before the importance of surgical cleanliness was recognized. By these and other cases it seems to be firmly established that the brain, and particularly the frontal regions, may be most seriously injured, without permanent mental defect. It would be of interest in Barritt's case to see if in the future there are subtle changes in character which have been so often described in lesions of the frontal lobes from various causes.

FAITH AND THE APOTHECARY.

That there are tricks in all trades, including that of the wily pharmacist, the following extract from one of Rosegger's stories goes to show:

The title of the sketch is "How they sent me after Oil of Hare." The boy, Peter, lives on a mountain farm, some way from the nearest town. When the last hog was killed a certain amount of lard had been prepared by the mother and set aside. Later on it was discovered to have become rancid. The farm hands refused to eat food prepared with it, and one of them suggested that it might be sold to some apothecary, as he alone could utilize it. So Peter is sent off to town with the rancid lard, and is instructed to obtain a certain price for it. As he is going to the apothecary one of the men who work on the farm and to whom oil of hare has been recommended as a suitable application to cure a facial neuralgia from which he has long suffered asks him to purchase for him two groschen's worth. After a long tramp Peter reaches the town, visits the apothecary, disposes of his lard at a price considerably less than he had been ordered to demand, and then asks for some oil of hare. He is told to return for it in fifteen minutes. The rest of the adventure we give in his own words:

> When I came back to the shop there were people there. I was made to wait and sat down on a bench in the back part of the room, getting from there a good view of the way in which this business of making people well was carried on. Some one came in and demanded fox grease. The little old man took down from the mantelpiece a yellow gallipot, scooped out with a pretty little shovel a small lump which he deposited on a piece of paper, and laid the whole on the small scales. "Well, friend, there are four drachms of fox grease, they cost two groschen." Next came a woman who asked for pills. Then another, who got a small vial. A boy asked for badger fat, to use for goitre. The apothecary eagerly seized the yellow gallipot on the mantelpiece, and served the article, just as before. This attracted my attention. I felt sure he had made a mistake: this gallipot contained fox grease. Then he set to making up powders, filling little boxes and all sorts of bottles. An old woman limped in, all doubled up, and inquired if she could not buy a salve good for rheumatism. "Certainly, madam," said the little man; went for the yellow gallipot again, and took out the salve for rheumatism. I began to think that this yellow gallipot on the mantel wore an uncanny look. Time slipped by, and as no notice was taken of me I finally crawled out of the corner and begged for my oil of hare.
>
> "All right, my son. So you are there. You want oil of hare!" said the little man, in a friendly tone; took down the yellow thing from the mantel, and ladled out the thick oil of hare.
>
> This precious substance was put into a small china pot, and scarcely had I deposited it in my most secure pocket, and paid the full price, when another woman appeared at the door and inquired if she could buy some fresh hog's lard for medicinal purposes.
>
> "Fresh as a daisy!" cried the apothecary; "only came to-day." And he dug some hog's lard out of the yellow gallipot.
>
> Thereupon I took my departure and commenced to meditate within myself, and to consider what a good medicine for a fool oil of hare was. Fox grease, badger fat, rheumatic salve, oil of hare and lard, all in the same gallipot! And I began to realize what a wealth of costly medicine I had brought down in my pail from the mountains.

On his return he loses his way, is overtaken by night, and finds shelter in a farmhouse, where he is hospitably received and kept till morning. The farmer's wife makes much of him. While she is seeking to console him:

> I heard in the kitchen a pitiful sobbing, and then Sepperl came in and reported that Katherl had another toothache.
>
> "What a horrid thing toothache is!" cried the woman. "All night the poor child has been tormented like a soul in purgatory. We have tried everything — put on hot cloths, given her cold water to hold in her mouth, washed it out with rose balsam, dropped in calamus spirit, rubbed on salt, hung a rosary from Maria Zell around her neck, tied two toes together with a silk thread, held her feet in the door of the stove, and done everything we could think of. You might as well have done it to a stick of wood. The poor thing howls as if her head was to be cut off, and I am at my wit's end. Katherl! Katherl! you poor good child! Wait a bit: I will put some hen dung on the back of your neck; that will draw it out; that will be good; Katherl, that will cure you for certain." And she rushed out again into the kitchen.
>
> The entire household had gathered about the sufferer, who now again began to utter heartbreaking cries.
>
> "My tooth! my tooth! Auntie, my tooth hurts me so!"
>
> "Wait a while," said the person thus addressed, consoling her; "the thing is going to take hold; you'll be better soon; there, my own dear little Katherl!"
>
> I too went out into the kitchen. On the hearth, her feet sticking in the oven door, crouched a child; she had a dear little round face; as though to implore mercy, her folded hands were clasped against her swollen right cheek, and a mighty sense of pity overcame me. Every one in the house had suggested something, and nothing had helped. Some one observed that it was a stupid thing not to take good care of the teeth, that toothache always came of that. By the Lord, thought I, if stupidity is at the bottom of it, my oil of hare will be just the thing! I dove down into my pocket and brought out the costly little pot, and out of my wise brain I envolved the idea of rubbing the swollen cheek with this thickened oil of hare.
>
> "It can't do any harm, if it is oil of hare, and comes from the apothecary — it can't possibly do any harm!" said the grandmother, and rubbed the salve into the child. In scarce five minutes the child cried out:
>
> "Auntie, it's all right!" and sprang up nimbly from the hearth.
>
> They wanted to buy all my oil of hare; I had only to set a price. They only ceased their entreaties when the child declared that the tooth was as good as ever, and could never hurt her again.

RECORD OF MORTALITY

For the Week ending Saturday, April 8, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Typhoid fever.	Diphtheria and croup.	Measles.
New York . .	3,438,899	1300	374	7.76	19.44	.56	3.04	1.12
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	224	69	6.30	6.16	—	2.70	.90
Baltimore . .	506,389	202	53	4.41	10.29	1.47	.98	—
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	110	41	20.93	13.65	1.84	.91	2.73
Washington .	277,000	111	34	12.60	16.20	—	4.50	.90
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	57	8	3.50	12.25	—	1.75	—
Nashville . .	87,754	36	14	8.31	30.47	—	5.54	—
Charleston . .	65,165	31	7	19.38	3.23	—	—	—
Worcester . .	108,240	32	13	3.13	9.39	3.13	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	23	7	13.05	26.10	—	4.35	—
Lowell . . .	88,641	30	9	3.33	29.99	—	3.33	—
Lynn	66,703	—	—	—	—	—	—	—
New Bedford .	66,340	24	2	—	12.45	—	—	—
Somerville . .	61,101	21	2	4.76	19 04	—	—	—
Lawrence . .	57,263	14	4	14.28	14.28	—	—	—
Springfield . .	56,501	18	6	22.22	5.55	16 66	5.55	—
Holyoke . . .	43,424	12	2	—	—	—	—	—
Brockton . .	37,278	7	1	28.56	14.28	—	—	—
Salem	36,883	17	6	5.88	—	5.88	—	—
Malden . . .	34,613	5	3	—	20.00	—	—	—
Chelsea . . .	33,468	12	3	—	—	—	—	—
Haverhill . .	32,022	12	3	—	8.33	—	—	—
Gloucester . .	30,589	4	1	25.00	—	25.00	—	—
Newton . . .	29,716	8	2	—	12.50	—	—	—
Fitchburg . .	29,438	11	4	18.18	18.18	—	—	18.18
Taunton . . .	28,167	8	2	—	25.00	—	—	—
Everett . . .	25,338	10	5	—	20.00	—	—	—
Quincy . . .	23,549	3	—	—	—	—	—	—
Pittsfield . .	22,643	2	—	—	—	—	—	—
Waltham . .	21,812	8	—	—	12.50	—	—	—
North Adams .	20,971	4	—	—	—	—	—	—
Chicopee . .	17,842	6	1	—	33.33	—	—	—
Medford . . .	16,511	3	1	—	—	—	—	—
Newburyport .	14,915	9	1	—	11.11	—	—	—
Melrose . . .	14,032	5	1	—	20.00	—	—	—

Deaths reported 2,397; under five years of age 680; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 179, acute lung diseases 404, consumption 302, diphtheria and croup 58, typhoid fever 25, measles 22, cerebro-spinal meningitis 19, diarrheal diseases 15, scarlet fever 15, whooping-cough 14, erysipelas 14.

From cerebro-spinal meningitis New York 10, Boston and Washington 3 each, Baltimore, Nashville and Somerville 1 each.

From diarrheal diseases New York 7, Pittsburg 3, Cambridge 2, Washington, Providence and Lawrence 1 each. From scarlet fever New York 11, Boston 2, Baltimore and Washington 1 each. From whooping-cough Pittsburg 8, New York 5, Washington 1. From erysipelas New York 5, Baltimore and Washington 2 each, Boston and Lawrence 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending April 1st, the death-rate was 23.1. Deaths reported 5,050; acute diseases of the respiratory organs (London) 505, whooping-cough 132, measles 108, diphtheria 68, diarrhea 38, fever 35, scarlet fever 20.

The death-rates ranged from 13.2 in Cardiff to 30.4 in Oldham; Birmingham 28.8, Bradford 21.4, Croydon 17.1, Halifax 26.7, Hull 20.3, Leeds 22.1, Liverpool 28.6, Nottingham 22.7, Portsmouth 21.3, Sheffield 25.3, Swansea 21.6, Westham 17.5, Wolverhampton 19.4.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 15, 1899.

G. A. Bright, medical director, retired April 9th, Section 1444, Revised Statutes.

J. H. Clark, medical director, retired April 16th, Section 1444, Revised Statutes.

W. M. Garton, assistant surgeon, detached from the "Supply," when put out of commission and ordered to temporary duty at hospital, New York, N. Y.

J. R. Waggener, surgeon, order of April 3d modified; ordered to San Francisco, Cal., when the marine battalion is ready for passage to Manila, P. I.

S. H. Griffith, surgeon, detached from duty as a member of the Marine Examining Board, Washington, D. C., and ordered to the "Prairie."

C. G. Herndon, surgeon, detached from the "Prairie" and granted sick leave for two months.

J. J. Snyder, assistant surgeon, detached from hospital, Newport Naval Station, and ordered to the "Wabash."

J. W. Ross, surgeon, retired, detached from duty at Army Hospital, Havana, Cuba, and ordered home.

W. S. Dixon, medical inspector, detached from the Naval Academy and ordered to Washington, D. C., April 15th, for duty as member of the retiring board.

N. H. Drake, surgeon, ordered to duty as member of the Naval Medical Examining Board, New York, N. Y.

T. H. Streets, surgeon, detached from duty as member of the Naval Medical Examining Board, New York, N. Y., and ordered to the "Philadelphia" as fleet surgeon, by steamer of April 19th.

W. R. DuBose, surgeon, detached from the Naval Hospital, Brooklyn, N. Y., and ordered to the Naval Academy.

J. H. Gaines, surgeon, retired, granted leave to go abroad for six months from May 6th.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, April 24, 1899, at 8 o'clock.

Dr. Stephen W. Driver will read a paper entitled "The Ethics of Reproduction."

Dr. Wm. W. Gannett will present the subject of "Mixed Typhoid Malaria Infection."

Dr. John J. Thomas will report "Two Cases of Injury of the Cord Resulting from Fracture of the Spine."

Arthur K. Stone, M.D., *Secretary*, 657 Boylston St.

Suffolk District Medical Society. — The Censors of the Suffolk District Medical Society, officiating for the Society at large, will meet to examine candidates for admission to the Massachusetts Medical Society, at 19 Boylston Place, on Thursday, May 11, 1899, at 2 p. m.

Candidates should make personal application to Dr. H. A. Lothrop, 10 Marlborough Street, and present their medical diploma or its equivalent, at least three days before examination.

John Dane, M.D., *Secretary*, 29 Marlborough Street.

APPOINTMENTS.

The following appointments have been made at the Boston Dispensary: Frank A. Higgins, M.D., to Obstetric Department; Francis P. Emerson, M.D., to Ear Staff; Joshua C. Hubbard, M.D., to Orthopedic Department; Joseph B. Howland, M.D., Pathologist; Richard F. O'Neil, M.D., George S. Whiteside, M.D., and Henry J. Perry, M.D., district physicians.

RECENT DEATHS.

James B. Gibson, M.D., formerly senior surgeon of the Manhattan Eye and Ear Hospital, died at Colorado Springs on April 9th, of Bright's disease.

Robert Loughran, M.D., of Kingston, N. Y., died on April 11th, of cardiac disease, at the age of sixty-seven. During the Civil War he was surgeon of the Eightieth Regiment, New York Volunteers, and for many years he was a pension examiner. Twice he represented the First Ulster District in the State Legislature, and for some time he was health officer of the city of Kingston.

Peter Pryne, M.D., who was medical officer of Sing Sing Prison from 1860 to 1870 and from 1871 to 1873, died at Herkimer, N. Y., April 13th, at the age of seventy-nine.

BOOKS AND PAMPHLETS RECEIVED.

A Century of Vaccination and What it Teaches. By W. Scott Tibb, M.A., M.D. (Cantab.), D.P.H. Second edition. London: Swan, Sonnenschein & Co., Limited. 1899.

Lessons in Hypnotism and the Use of Suggestion, based upon the Neuron Motility Hypothesis. By Leslie J. Meacham. Cincinnati, O.: The Bishop Publishing Co. 1898.

An Ephemeris of Materia Medica, Pharmacy, Therapeutics and Collateral Information. By Edward R. Squibb, M.D., Edward H. Squibb, S.B., M.D., Charles F. Squibb, A.B. 1899.

The Pathology and Treatment of Sexual Impotence. By Victor G. Vecki, M.D. From the author's second German edition, revised and rewritten. Philadelphia: W. B. Saunders. 1899.

Tuberculosis of the Bladder; Etiology and Pathology. By W. M. L. Coplin, M.D. Symptoms and Treatment of Tuberculosis of the Bladder. By Orville Horwitz, B.S., M.D. Reprint. 1898.

The International Medical Annual and Practitioners' Index: A Work of Reference for Medical Practitioners. With thirty-two contributors. Seventeenth year. New York: E. B. Treat & Co. 1899.

Proceedings of the American Medico-Psychological Association at the Fifty-fourth Annual Meeting, held in St. Louis, May 10–13, 1898. Published by American Medico-Psychological Association. 1898.

Albuminuria and Bright's Disease. By Nestor Tirard, M.D., F.R.C.P., Physician to King's College and Senior Physician to the Evelina Hospital for Sick Children, etc. With original illustrations. London: Smith, Elder & Co. 1899.

Records of Urinary Examinations: A Convenient Practical Method for Keeping Records of Urinary Examinations for Future Reference in Hospital or General Practice. Arranged by Harry Morell, M.D., C.M., Trinity University, Toronto. Hartford, Conn.: J. B. Burr & Co. 1898.

Annual and Analytical Cyclopædia of Practical Medicine. By Charles E. de M. Sajous, M.D., and one hundred associate editors, assisted by corresponding editors, collaborators and correspondents. Illustrated. Vol. III. Philadelphia, New York, Chicago: The F. A. Davis Co. 1899.

Twentieth Century Practice: An International Encyclopedia of Modern Medical Science. By leading authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In twenty volumes. Volume XVII, Infectious Diseases and Malignant New Growths. New York: William Wood & Co. 1898.

Chemistry, General, Medical and Pharmaceutical, including the Chemistry of the U. S. Pharmacopœia; A Manual on the Science of Chemistry and its Application in Medicine and Pharmacy. By John Altfield, F.R.S., Ph.D., of the University of Tübingen, F.I.C., T.C.S., etc. Sixteenth edition. Philadelphia and New York: Lea Brothers & Co. 1899.

The Principles of Bacteriology: A Practical Manual for Students and Physicians. By A. C. Abbott, M.D., Professor of Hygiene and Director of the Laboratory of Hygiene, University of Pennsylvania. Fifth edition, enlarged and thoroughly revised, with 109 illustrations, of which 26 are colored. Philadelphia and New York: Lea Brothers & Co. 1899.

The Ready Reference Handbook of Diseases of the Skin. By George Thomas Jackson, M.D. (Col.), Professor of Dermatology in the Woman's Medical College of the New York Infirmary and in the Medical Department of the University of Vermont, etc. With 75 illustrations. Third edition, revised and enlarged. New York and Philadelphia: Lea Brothers & Co. 1899.

Ocular Therapeutics for Physicians and Students. By F. W. Max Ohlemann, M.D. (Minden, Germany), late Assistant Physician in the Ophthalmological Clinical Institute of the Royal Prussian University of Berlin, etc. Translated and edited by Charles A. Oliver, A.M., M.D. (Univ. of Penn.), one of the Attending Surgeons to the Philadelphia Hospital, etc. Philadelphia: P. Blakiston, Son & Co. 1899.

The American Year Book of Medicine and Surgery, being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, drawn from Journals, Monographs and Text-books of the leading American and Foreign Authors and Investigators. Collected and arranged with critical editorial comments by twenty-eight American authors under the general editorial charge of George M. Gould, M.D. Illustrated. Philadelphia: W. B. Saunders. 1899.

Original Articles.

PERSONAL EXPERIENCE IN MODERN OPERATIONS FOR THE RELIEF OF PROSTATIC OBSTRUCTION.

BY A. T. CABOT, A.M., M.D., BOSTON,
Surgeon to the Massachusetts General Hospital.

In a paper written in 1896, at the request of the Executive Committee of the American Surgical Association, and read before their meeting at Detroit, I stated that I thought the time then too early for the formation of positive opinions as to the merits of the various operations for the relief of obstruction in cases of hypertrophied prostate. At that time the recorded cases were few, and many of them had been under observation for but a short time since operation, and conclusions as to the final result were often impossible.

It is this question as to the permanence of results which, next to the question of immediate mortality, has the greatest interest for us. To hasten the final correct solution of this question it is very desirable that surgeons dealing with this class of cases should put on record all observations coming within their opportunity, both of patients operated upon by them, and of those seen by them after operation by others. In this way only can we speedily accumulate the data necessary for a correct judgment.

This is my reason for presenting a short résumé of my own experience in this field of work. The present success that attends the use of our modern soft catheters in cases of prostatic obstruction has reduced the number of cases in which I have had to resort to operation to the few which follow:

SIX CASES OF PROSTATECTOMY.

Case I. W. D. was seen by the writer in September, 1892, at which time he was sixty-five years of age. He was first troubled with frequent urination *thirteen years* before. Three years later he was forced to begin the catheter life, which had thus lasted for ten years. Within the year before he was seen he had begun to have a good deal of pain in the rectum and glans penis. At the same time the frequency with which he had to use the catheter increased so that for a short time before entrance he was drawing his water two or three times an hour. The urine was ammoniacal and contained much ropy pus.

September 17, 1892, he was operated by suprapubic incision. The third lobe projected backward into the bladder, forming a tumor the size of a hen's egg, ulcerated on the surface. This was cut off level with the proper bladder face of the prostate. One month later the suprapubic opening was sufficiently closed to enable the patient to pass urine normally (the first time in ten years).

This patient has been seen at varying intervals since his recovery, the last time five years after operation. The urine has been passed completely by natural efforts, the frequency being from five to eight times in the twenty-four hours, and the urine has remained clear and acid.

Case II. C. E. L. began to be troubled with pain in urination and with increased frequency in 1888 or 1889, at which time he was forty-six years of age. In 1891 he had retention after a long march with the Grand Army of the Republic. This was relieved by the catheter, but returned some days later and troubled him more and more until 1892, when he was obliged to establish the catheter life, after this time passing no water by the natural efforts. In 1895 he had symptoms of stone and litholapaxy was done on May 23d of that year.

At this time rectal examination showed a prostate of moderate size. The litholapaxy afforded him some relief, but on May 4, 1896, he re-entered the hospital with pronounced symptoms of stone. He was advised now to have the stone removed by suprapubic incision in order that the prostate might be dealt with at the same time. Consenting to this, he was operated upon on May 6th. Four stones were removed and it was found that the obstruction at the orifice of the urethra was due to large projections into the bladder from both lateral lobes. These were cut off with rongeur forceps and were found to consist of prostatic tissue with dilated glands. Three weeks after operation the suprapubic wound was sufficiently closed to enable him to begin to pass water without the use of a catheter and from that time on he passed the greater part of his urine in this way, using the catheter about once a day in order to ensure the thorough emptying of the bladder.

In January, 1897 (nine months after operation), he wrote that he was able to pass his water without the use of the catheter but could not wholly empty the bladder. Some days he could very nearly do so, on other days he could not more than half empty the bladder naturally. He was then urinating about every two hours.

In May, 1898, he was again much troubled by pain and frequent urination. He re-entered the hospital and a small stone was crushed and pumped out. After this he was again comfortable and was able to pass water with ease.

Case III. H. T., seventy years old, was seen by the writer in 1896. He had been troubled with difficulty of passing water for the past ten years. Since 1887 he had depended wholly on the catheter. In 1886 he began to have pain and more frequent need for catheterization. At the time the prostate was large, hard and irregular in shape. Examination under ether showed the presence of a stone, which was removed by litholapaxy. After several months, however, the pain began to return and a suprapubic operation was done, five stones removed, and a ring of projections around the bladder end of the urethra was cut away. After this his pain was decidedly relieved and he has had no recurrence of stone, but he still relies on the catheter to empty the bladder.

In this case of an old and frail man it was not deemed advisable to do an extensive operation on the prostate, and only the portions that projected into the bladder and were ulcerated were cut away. It was not expected that the power of urination would be restored, but the case is reported here in order that mention should be made of every operation of the nature of a prostatectomy done by the writer.

Case IV. W. T. D., sixty years of age at time of operation. Obstruction to urination and frequency began at fifty-five. The trouble was gradually progressive until at fifty-nine the patient suffered much with pain in the back and testes. A catheter was passed and drew about a pint of urine. For a year now he depended almost wholly on the catheter, passing practically no water by the natural efforts. At the end of this time, on July 6, 1897, he had a sudden hemorrhage into the bladder. The clots were removed, and under constant drainage the bleeding stopped and the urine became clear and acid.

On July 13, 1897, a suprapubic cystotomy was done. The urethra was occluded by a third lobe, of considerable size, with projections also from both lateral lobes. All of these projecting masses were thoroughly removed with rongeur forceps. Hemorrhage was considerable but was controlled. The bladder was drained by two tubes through the suprapubic wound. Recovery was uninterrupted and satisfactory.

As the suprapubic wound closed it was found that the patient had recovered the power of voluntary urination. Two months after operation he was urinating naturally every two to three and a half hours in the day and was not up in the night and the amount of residual urine was two ounces.

At the end of seven months he noticed that the urine came a little harder and the amount of residuum varied from three to six ounces. At this time a No. 30 French sound was passed.

On April 20, 1898, the patient wrote that he was holding his water all night after passing the catheter in the evening. The residual urine varied from two to six ounces. During the day, after passing the catheter in the morning, he held his water until noon and then passed it every two or three hours until bedtime.

Case V. T. McC., sixty-eight years of age, entered the Massachusetts General Hospital March 17, 1898, having had difficulty in micturition for eighteen months. For a year he had depended entirely on the catheter. At the time of entrance he had a profuse hematuria. Examination showed an enlarged prostate, hard and somewhat irregular in shape.

A suprapubic incision was made on March 22, 1898. Upon opening the bladder much blood and many large clots escaped and an ulcerated and projecting third lobe of the prostate was found. The patient being in a poor condition the bladder was packed with gauze and two drainage tubes were inserted. This effectually checked the hemorrhage.

On April 7, 1898, his condition being much improved, the wound was dilated and the enlarged third lobe of the prostate was cut away. Drainage was provided by two tubes. Convalescence was satisfactory. The suprapubic wound slowly contracted and closed on May 16th. After this the patient passed urine freely by the natural efforts.

This patient was seen in August, 1898, and although he had considerable cystitis, the bladder completely emptied itself by the natural efforts.

Case VI. E. D. B., age fifty-eight, entered the Massachusetts General Hospital February 2, 1898. For nine years he had had frequent micturition and bladder tenesmus. On the advice of a physician he had used a catheter for over eight years, three or four times in the day and twice in the night, using a soft-rubber instrument. Several times within the past year he had found small stones in the eye of the catheter. He had also had hematuria several times.

He was operated upon February 5, 1898, by suprapubic incision. No stones were found in the bladder. The enlarged middle lobe of the prostate was cut out. Pathological examination of the fragments removed showed them to consist of dense fibrous tissue in which were imbedded many large dilated gland acini. On March 10th the patient passed about four ounces of urine naturally. By March 16th the patient passed nearly all of his urine by the urethra and catheterized himself twice a day. When discharged on the 22d he was passing increasing amounts of urine daily, although a small amount still escaped by the suprapubic opening. Soon after getting home the suprapubic opening closed and he began to pass all of his urine *per urethram.*

Mr. B. remained comfortable through the summer and autumn. As cold weather approached he began to suffer some discomfort in the bladder. Presently he began to pass a little gravel, and a small fistulous opening appeared in the suprapubic scar.

On March 6, 1899, several small, phosphatic stones were crushed and pumped out. Immediately after this operation Mr. B. again became entirely comfortable.

FIVE CASES OF ORCHIDECTOMY.

Case VII. J. W., age seventy-five, had been troubled with difficulty of urination for five years. When seen by the writer in December, 1894, he was using the catheter regularly and was unable to pass water without it. At this time a stone was found in his bladder, which was removed by litholapaxy, and at the same time orchidectomy was done, with the hope of relieving the prostatic condition. This operation was followed by a maniacal condition, which persisted for two months. He first passed water voluntarily forty-three days after operation. He gradually got better and left the hospital, passing a small part of his water himself, but requiring the use of a silver catheter for the removal of the greater part of it. He continued well for some little time, but toward the end of May he took a long ride in a carriage, which again started acute bladder irritation, and he gradually failed and died.

At the autopsy the prostate was found to be about the size of a hen's egg, and the third lobe about the size of a pullet's egg, projecting upward and backward into the bladder. On its apex was a calcareous deposit firmly adherent. In the post-prostatic pouch there was considerable fine calcareous gravel.

Case VIII. J. E. S. was seventy years of age in May, 1893, when he was seen by the writer, who removed, by litholapaxy, a phosphatic stone as large as a pigeon's egg. Previous to this operation the patient had used a catheter occasionally; after it he depended on the catheter for a time and then resumed urination by the ordinary efforts. In November, 1894, he was passing urine every hour in the day, then passing the catheter at bedtime and resting quietly all night. Residual urine at this time was about two ounces. During that winter, while in the South, his bladder was very troublesome and he came north to seek relief from the cystitis.

In January, 1895, orchidectomy was done by Dr. Fowler, of Brooklyn. He made rather a tedious convalescence, but when seen by the writer again in July, 1896, he expressed himself as very comfortable. He was at this time passing water every one or two hours in the day. At night he slept until 4 a. m. The residual urine at this time was still two ounces, but the irritation was much less than formerly.

Case IX. T. O'B., sixty-seven years of age, first noticed difficulty of urination in the spring of 1895. Soon after this he began to have pain in connection with urination and the urine six months later became muddy. The frequency of urination was constantly increasing, so that by May, 1896, he was passing water every twenty minutes, and was in a good deal of pain in the interval.

Examination showed a prostate the size of a lemon, hard but smooth. The bladder was distended so as to be felt as a tumor reaching well up toward the umbilicus. The catheter drew fourteen ounces of residual and was then withdrawn, although the urine was still running steadily. His mental condition was dull.

On the 6th of May, under cocaine anesthesia, double orchidectomy was done. The cords were tied with animal tendon, but these ligatures slipped later in the day and the wounds had to be opened and the cords tied with silk. Before these were secured he had bled considerably but not excessively. For two days he was in a delirious condition but then began to improve, and on the 14th (eight days after operation) showed decided improvement in urination, holding his water from three-quarters of an hour to an hour. Ten days after operation examination of the prostate showed a very marked diminution in size, and the catheter drew but ten ounces of residual urine. A month later the residual urine had fallen to five ounces. He was then urinating ten or twelve times in the day and three times in the night.

In July the residual urine was only three and one-half ounces. In the middle of September it was only two ounces, and a little later there was only nine drachms. He was at this time passing water every two hours in the day and only up twice in the night. The prostate was at this time about the size of a pullet's egg, some portions of it being harder than others. It did not have, however, the nodularity of a malignant prostate.

In November, 1897, he re-entered the hospital in the service of Dr. J. C. Warren. He had then for six months been having more trouble with frequency and pain in urination, and the residual urine at this time was found to be seventeen ounces. He was much improved by his stay in the hospital, but at the end of eight days left, in consequence of trouble in his family, and has not been seen since.

Case X. S. H. W., seventy-five years of age, was seen in October, 1894. At this time he had symptoms of stone, and by litholapaxy several uric-acid stones were removed. At this time urination was free and there was little, if any, residual urine. The prostate was enlarged to the size of a pullet's egg. It was not tender to the touch and its surface was smooth.

Considerable discomfort in urination was felt through the years 1895 and 1896, and in the autumn of the latter year there was so much pain that an ether examination was made to determine whether there was any recurrence of stone. Nothing was found, but following this exploration there was a rise of temperature, with pain and tenderness about the right kidney. A week later there was a complete stoppage of urine, requiring the systematic use of the catheter. The quantity of urine fell from one hundred ounces in the twenty-four hours to fifty ounces, and the patient's general condition being such as to excite apprehension constant drainage through a catheter was established. There was now an immediate improvement, and the temperature soon fell to normal, the quantity of urine again rose to the neighborhood of one hundred ounces in the twenty-four hours, and the pus, which had been considerable in it, quickly disappeared.

One testicle was now removed under cocaine anesthesia, and a week later the other was similarly removed. The wounds healed quickly by first intention. On the day following the second operation the permanent catheter was removed and he passed a catheter about every two hours. At the end of five days he began to pass some urine by the natural efforts, and from this time he was able to partially relieve the bladder in this way. At the end of three weeks the amount of residuum was only half an ounce. He at this time urinated about once an hour.

Urination continues to be frequent and associated with some pain, but he has been much stronger and more comfortable since adopting the habit of wearing a soft-rubber catheter for constant drainage at night so that his sleep is not disturbed.

Case XI. J. G. H., sixty-nine years of age, was seen in consultation with Dr. Lathrop, of Dover, N. H., May 28, 1898. For six months he had been troubled with frequency of urination — no pain. Latterly, the obstruction had become so great as to constitute serious difficulty in starting the stream, especially at night. On the morning of the day that I saw him Dr. Lathrop was obliged to draw the water for the first time, drawing one and one-half pints.

Examination showed the prostate enormously enlarged, extending beyond the reach of the finger and filling the pelvis from side to side. Its surface was smooth and regular, suggesting a condition of extreme hypertrophy. A soft-rubber catheter and a silk coudé were both tried, but failed to pass. Orchidectomy was advised, on the ground that the obstruction seemed to be from the lateral pressure on the urethra.

After the patient's return home he resumed spontaneous urination, which was accomplished, however, with considerable straining.

Two days later orchidectomy was done under cocaine anesthesia. Following this operation he had complete stoppage, and constant drainage was established through a catheter. Frequent efforts were made to dispense with this, but it was not possible to do so for more than three weeks. The power of urination was very slowly re-established, and during convalescence the symptoms pointed strongly to the existence of a subacute pyelitis.

Mr. H. was seen in August. He had recovered strength very slowly and was still feeble.

In October he was very weak and evidently failing. At this time Dr. Lathrop discovered a tumor pushing up out of the pelvis. The nature of this swelling was never positively settled, but Dr. Lathrop thought that it appeared like a new growth rather than a collection of pus or other fluid. The appearance of this tumor makes it probable that this was a case of malignant growth in or near the prostate, and this is good reason for the failure of the orchidectomy.

UNILATERAL ORCHIDECTOMY.

Case XII. A. L. began in 1890 to be troubled with considerable difficulty in urination, he at this time being about sixty-five years of age. Examination showed that residual urine to the amount of four ounces existed. Resort to the catheter led to some little irritation of the urethra, and after some trouble with cystitis it became necessary to permanently establish the catheter life. Since that time he has depended upon the catheter for passing the water.

In 1896, on returning from Europe, he took cold on board the steamer, and this was followed by inflammation and suppuration in both testes. The right testis quickly recovered on evacuation of the abscess. The left one became chronically inflamed and had to be removed. For a short time after this operation Mr. L. found himself able to pass an ounce or two of urine, but this power was soon again lost, and he returned to his catheter life as before. Since that time he has been in good health, having no inflammatory trouble with his bladder, and expressing himself as extremely well.

FOUR CASES OF ORCHIDECTOMY FOLLOWED LATER BY PROSTATECTOMY.

Case XIII. J. T. A., sixty-six years of age, in 1896 consulted me by the advice of Dr. J. M. T. Finney, of Baltimore. He first began to be troubled with difficulty of urination in 1890, and finally, in October, 1892, was obliged to adopt the permanent use of the catheter. In May, 1892, he was operated upon by Dr. W. S. Halsted, in Baltimore, for stone in the bladder, by suprapubic cystotomy. At this time Dr. Halsted found some outgrowth of the middle lobe of the prostate, the whole gland being considerably enlarged. In July, 1895, Mr. A., being again troubled with urinary irritation, applied to Dr. Gordon, of Portland, by whom he had an orchidectomy done. About a month later, a stone being discovered in his bladder, it was removed by suprapubic cystotomy. At this time, on opening the bladder Dr. Gordon found the prostate much shrunken.

He was first seen by the writer June 19, 1896, at which time he was again suffering from symptoms of stone in the bladder. A searcher, being introduced, touched a stone. In using this instrument the prostatic urethra seemed long and rather rigid, so that it offered some resistance to its passage. At this time the prostate, with the finger in the rectum, seemed to be of moderate size and had a firm resistance. The stone was removed by litholapaxy. For some months Mr. A. was comfortable, but then had a return of irritation, and again a small, soft calculus was crushed and pumped out. The next year this crushing and pumping out of calculous matter was repeated two or three times, and when it was evident that a strong tendency to the re-formation of stone existed the opinion was given Mr. A. that he had an ulcerated third lobe of the prostate upon which this calcareous matter was forming. He, however, preferred not to undergo a third suprapubic operation for its removal, and persisted in the plan of palliation, by the occasional removal of soft stones, until the autumn of 1897. He then decided to follow the writer's advice and have a cutting operation done for the removal of the third lobe, and for this purpose consulted Dr. J. M. T. Finney, of the Johns Hopkins Hospital, as he preferred to have the operation done at home.

Dr. Finney wrote me later that he operated on October 15, 1897. He found the middle lobe of the prostate about the size and shape of the last joint of his thumb. This covered the orifice of the urethra like a ball valve. It was ulcerated upon its upper or urethral surface and had particles of calcareous material adherent. In the posterior cul-de-sac, which was rather deep, was perhaps a half ounce of sand and gravel. No stone of any size existed. The rest of the prostate had entirely atrophied, so that a finger in the rectum and a finger in the bladder appeared to have but the thickness of the bladder and rectal walls between them. Dr. Finney excised the middle lobe of the prostate flush with the bladder wall. The hemorrhage was slight and readily controlled by gauze packing. Recovery was uneventful, and since that operation Mr. A. has passed the greater part of his urine by the natural efforts. He says the expulsive action seems to be improving, but is not yet strong enough to enable him to thoroughly empty the bladder.

Case XIV. J. R., age sixty-seven, had had difficulty in micturition and had used the catheter for three years. He then entered the Massachusetts General Hospital in September, 1895, and was operated upon by Dr. F. B. Harrington, who did a litholapaxy and double orchidectomy. He was much relieved by the operation and partially regained the power of voluntary urination, still, however, requiring the catheter every four hours.

The prostate was not notably changed to the rectal touch when he left the hospital, one week after operation.

On May 11, 1896, he entered the hospital again, under the care of the writer, having had a gradual return of symptoms. He had then returned to the use of the catheter for three and a half months. For two months he had had considerable hematuria and was then using the catheter every hour. The prostate was as large as a horse-chestnut. On May 13, 1896, a stone was found and crushed. After this operation the power of voluntary micturition was again partially regained.

He re-entered the hospital, for the third time, March 16, 1898, having been comfortable until five or six months previously, when he began to have pain, and again had to depend wholly on the catheter, which he used every hour. At this time the bladder would hold only about two ounces. On March 19 the bladder was opened by suprapubic incision, but no stone was found. The prostate was not enlarged, but across the urethral orifice there was a band of tissue, forming a bar at the neck of the bladder, which was cut away. Recovery from this operation was uneventful. The suprapubic wound soon closed, and the power of voluntary urination was almost wholly regained, the catheter when used occasionally showing only half an ounce of residual urine.

Case XV. J. B., seventy-seven years old. He had had difficulty of urination for six years, with burning and occasional passage of gravel. He had used a catheter for four years, and had been wholly dependent on its use for three years, passing it every two hours in the day and somewhat oftener at night. In October, 1898, double orchidectomy was done, and was followed by some relief of irritation, but without restoration of micturition.

He entered the Massachusetts General Hospital in April, 1898. Physical examination showed a much enlarged prostate. The urine was very scanty, foul smelling and loaded with muco-pus. Mr. B. was a very sick man, with dry tongue, utter inability to take food, and the mental hebetude of a patient already uremic. On April 9, 1898, he was operated by a suprapubic incision. There was much hemorrhage from the bladder wall. Thirteen stones were removed, and a mass about the size of the last joint of the thumb, projecting from the prostate below the urethral opening, was cut away. Other smaller projections encroaching on the prostatic urethra were also removed.

The patient bore the operation well, but the urine remained scanty and the evidences of uremia became more marked. He gradually failed and died on the fourth day after the operation.

The masses removed from the prostate proved to be encapsulated firm tumors. On microscopical examination they showed a structure largely composed of muscular and fibrous tissue, in which were embedded irregularly-shaped spaces filled with epithelial cells of atypical forms.

The growths nowhere showed any infiltrating tendency. They seemed to be adenomatous in character, but one pathologist thought them carcinomatous.

Against this view was the fact that these little growths were scattered through the prostate, and in every instance were cleanly encapsulated, as carcinomata are not.

Case XVI. Mr. T. sixty-eight years of age, had been troubled with urinary symptoms for ten years. He began the constant use of the catheter in 1895. In 1897 the symptoms became so severe that an operation was advised, and on the 7th of August, 1897, orchidectomy was done by Dr. J. W. Elliot at the Massachusetts General Hospital. He was somewhat relieved of pain and irritation after this, but depended wholly on the catheter until September 26, 1897, when, after eating onions, he began to pass urine naturally. He now adopted an onion diet and began to pass water quite freely, using the catheter but once a day.

In March, 1898, he again began to have pain and difficulty in urination. This increased through the spring, until in May he was confined to the bed with much pain and tenesmus. At this time he was seen by the writer in consultation with Dr. Jones, of Southboro. An operation was advised, acceded to, and the bladder was opened above the pubes. Below the urethral orifice, and to the left of it, were considerable projections, which were ulcerated and encrusted with lime salts. These were freely cut away, and some bits of calcareous matter that lay free in the vesical cavity were removed. Drainage was established above the pubes. The patient made a good recovery, as reported by Dr. Jones. The suprapubic tube was kept in, however, for six weeks, thus establishing a fistula that was slow to heal. When this finally closed, the power of voluntary urination was restored.

It is not my intention to offer any positive conclusions drawn from cases so few in number. It may be profitable, however, to make a brief résumé of the results and to point out certain ideas suggested by them.

Of the cases of prostatectomy, eight (Nos. 1, 2, 4, 5, 6, 13, 14, 16) recovered the power of urination in a very satisfactory degree.

One (Case 3), upon whom a confessedly imperfect operation was done, did not recover the power of voluntary micturition, and one (Case 15), an old uremic man of seventy-seven, did not live long enough to decide this point.

Of the cases of orchidectomy, five (Nos. 8, 9, 10, 14 and 16) were more or less distinctly improved in the power of urination. Three of these (Nos. 9, 14 and 16) afterwards relapsed and showed as much obstruction as before the operation. In one case (No. 10), while the power of expelling urine was restored, the intolerance of the bladder remained and the frequency of urination was excessive.

Three cases (Nos. 7, 13 and 15) obtained no relief from the obstruction after orchidectomy.

In one case (No. 11) the subsequent course seemed to show that a malignant growth existed in the prostate and that the case was, therefore, beyond the relief of any operation.

Perhaps the most interesting observation of all is that among these patients there are five (Cases 7, 13, 14, 15 and 16) in which an orchidectomy failed to satisfactorily relieve obstruction and in which the mechanical reason for this failure was afterwards investigated, either by operation or autopsy.

In four of these cases (7, 13, 14 and 16) the obstruction was found to be due to outgrowth into the bladder, or across the urethral orifice, of prostatic tissue that was not removed by the shrinkage following the orchidectomy. In my paper before the American Surgical Association I suggested that cases of this sort were suitable for prostatectomy rather than for orchidectomy, and the experience of these cases bears out this assumption.

In Case 15 the obstruction was also found to be due to the encroachment on the urethra of little tumors in the prostate, which, not having shrunk after orchidectomy, were found and removed by the prostatectomy. While this case, then, is not properly to be included among those of hypertrophied prostate, in which orchidectomy failed of relief, it distinctly was a case which, having all the clinical aspects of hypertrophy, was suitable for prostatectomy and not for orchidectomy.

In three cases (13, 14 and 16) out of the four that had a prostatectomy after orchidectomy the restoration of function after the obstructing tissue was finally cut away was marked and satisfactory. The fourth patient (case 15), profoundly uremic before operation, died before the effect on urination was clear.

In my former paper another conclusion, drawn from a study of the statistics then available, was, that "the functional results of the two operations seem at present to be as nearly equal as possible, and the tendency to relapse shows itself in about the same proportion of cases after either operation."

This conclusion, which seemed true in the light of events up to 1896, is not borne out by my personal experience as embodied in the above report.

My present feeling is, that prostatectomy offers a distinctly better prospect of relief than orchidectomy, and is especially applicable in the cases where the obstruction is due to the growth into the bladder of prostatic projections which encroach on the urethral orifice.

In Cases 3 and 4 it is probable that the result would have been better had the lateral lobes of the prostate been thoroughly removed, either through the bladder or by the perineal route in the manner advocated by Alexander.

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TRAUMATIC CEREBRAL EDEMA: ITS PATHOLOGY AND SURGICAL TREATMENT — A CRITICAL STUDY.[1]

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(Concluded from No. 16, p. 376.)

The following cases cited by Walton are, if we admit the possibility for motor symptoms to result from local collections of serum after trauma, beautifully corroborative of the evidence already adduced in demonstration of the power of the brain, under favorable circumstances, to rid itself of such local collections.

Case I. A boy of six years was struck by a bicycle at noon one day, was restless and drowsy, and on the following day became unconscious, with unilateral paralysis, including the face. Operation was considered but postponed. The paralysis disappeared within four days.

Case II. A child, three and a half years old, fell from a swing, striking the head. It was drowsy afterward, and the next day one arm was paralyzed. The paralysis began to lessen on the third day, and rapidly disappeared.

A case cited by Prince[30] is interesting in this connection. It was the case of a child who, after a head injury, developed absolute paralysis of the right side, with partial coma, preceded by a period of consciousness. As the child could be aroused, Prince advised postponement of operation, and on the following morning every sign of paralysis had disappeared and the child's mental condition was normal.

An important observation in connection with the class under discussion is that of White and the writer.[31] In this case, which was that of a man who was thrown from a carriage, striking on the right parietal region, there was nothing, outside of a primary loss of consciousness and a continued subnormal temperature, to indicate the serious nature of the case up to the fourteenth day. On this day the patient was suddenly, and without prodromata of any sort, seized with a trembling of his entire body, lasting about fifteen minutes. After this he became unconscious and was found about two hours later in the following condition: "The patient was lying on the left side, unconscious, and breathing stertorously. The face was cyanosed and the facial veins congested; the carotids pulsated forcibly, the eyes were closed. Temperature in right axilla 103°, in left 102.5°. The pupils were equal in size, dilated, but reacted to light. No ocular or facial palsy was apparent. The mouth was open and the tongue retracted. The right arm and both legs were in constant motion, but the left leg was not moved as vigorously as the right. The left hand and arm were extremely paretic, but were moved when forcibly pricked with a pin. Both deep and superficial reflexes were abolished on the left, lively on the right.

"Operation was undertaken within two hours, the point selected for trephining being over the arm centre on the right side. On removing the trephine button the dura bulged somewhat into the opening and did not pulsate. On opening the dura the brain pushed out moderately, but without pulsation. The pial veins were much distended. There was no evidence of fracture of either table in the region of operation. A probe swept round between the dura and pia showed an excess of edema in all directions, but a director passed first into the substance of the brain directly under the arm centre and then into the ventricle failed to disclose anything further. With rongeur forceps the trephine opening was enlarged and the dura opened more freely. For a few moments pulsations returned, only to disappear before completion of the operation."

Only slight improvement was noted in the paralyzed arm after the operation and the patient died two days later, without having at any time regained consciousness.

Every feature of this case is in harmony with the view of a generalized contusion, and the writer feels justified in making the positive assertion that the edema found on operation was not the underlying cause of the paralysis which was present. In fact, it seems probable that exactly the same conditions would have been found if the skull had been opened at random on either side.

The two following cases, selected from the records of the City Hospital, are further valuable evidence against the cortical edema theory of the production of paralysis. They are not cited as absolutely uncomplicated cases of contusion:

Case I. Patient, male adult, fell several feet, striking head. He became immediately unconscious, but could be partially roused, relapsing, however, when left to himself. The pupils were equally dilated but responded to light. Pulse on entrance was 112, gradually rising, with temperature, to 160. Temperature on entrance 100.8°, rising to 104° in the course of the next ten days, when death took place. There was no paralysis of the limbs at any time and no loss of sensation; respiration did not suffer until near the end.

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[1] An essay to which was awarded the William H. Thorndike Prize (Harvard) for 1898

[30] Prince, Morton: Boston Medical and Surgical Journal, vol. cxxxvi, No. 13, p. 312.

[31] White, H. Warren and Courtney, J. W.: A Case of Traumatic Cerebral Edema, etc., Boston Medical and Surgical Journal, July 1, 1897.

Autopsy. — Pia over convolutions contained a moderate amount of clear fluid and over the surface of the cerebellum it contained considerable blood. In the upper portion of the first left frontal convolution was a cavity containing snuff-colored fluid. The brain substance showed several points of hemorrhage and the left ventricle was filled with fluid blood. No fracture of skull anywhere present.

In this case we find edema present over the convolutions even after death, and yet there was no paralysis of the limbs at any time — in fact, not even loss of sensation.

Case II. Male adult, found unconscious in a hallway. Just after entrance free movement of the bowels. Examination showed: right pupil does not respond to light, the left does; size normal. Face drawn slightly to left. Moves arms and legs freely. Can be roused to open mouth and protrude tongue, which he does in the median line. Respirations 25, not stertorous. Next day some facial paralysis on the right, but no other signs of paralysis at any time. The pulse and temperature showed the characteristic variations of contusion. The latter was as follows:

	A. M.	P. M.
Third day	97.8	100.0
Fourth day	97.0	99.8
Fifth day	97 0	101.2
Sixth day	99.5	99.8
Seventh day	99.5	99.5
Eighth day	99.5	97.8
Ninth day	102.5 (exitus)	

Autopsy. — No fracture of skull at any point. Dura firmly adherent to calvarium, especially in the right temporal region. Meshes of arachnoid filled with excess of clear fluid over all parts of both hemispheres. On section the brain showed marked hyperemia throughout, but otherwise no abnormality. Examination of the other internal organs completely negative.

Here is a practically uncomplicated case of general contusion. We find the meshes of the arachnoid over all parts of both hemispheres filled with an excess of clear fluid, and the only clinical expression motorly was a paresis of the right side of the face.

I have already mentioned Hewitt as calling attention to the large collection of serous fluid which is sometimes found in the ventricles after cases of general contusion. This, it seems to me, is a most important observation, in view of the so-called serous meningitis of Quincke. This latter author claims that a ventricular meningitis may give rise to a serous exudate, as well as to a purulent one, and cites the analagous condition which is found in the pleural cavity in cases of pleurisy. Among the causes of the condition trauma seems to bear a prominent part, the others being mental strain, alcoholism, otitis media, and acute infectious diseases.

Pathologists have been very loth to accept Quincke's views for the reason that they are decidedly out of harmony with the well-established facts pertaining to the subject of inflammatory processes. With regard to the cases which are supposed to follow traumatism, — the only ones which at present concern us, — it seems to the writer that the scepticism of pathologists is well founded.

In illustration let us take a case cited by Prince[82] and submit it to analysis in the light of the pathology of cerebral contusion. The case was that of a woman who had been admitted to the surgical wards of the Boston City Hospital on account of injury to the head. She had been kicked about the face and head by her husband. This was about four o'clock P. M., and she was said to have been unconscious until about midnight of that day. The next day (September 15th) the examination on entrance to the hospital showed: "much swelling of left face; whole left face bruised and ecchymosed; some ecchymosis on left side of neck; slight abrasion of left arm and chest; both eyes blackened; marked tenderness over face and entire head; no sign of paralysis; temperature, 100°."

During the next four weeks the symptoms presented variations which are commonly found in head injuries in which contusion is prominent, notably, irregularity of temperature, severe headache, vomiting and mild chills.[88] To this was added more or less psychical disturbance, and a steady and gradual failure of strength. At the end of the fourth week local nervous symptoms of importance began to appear. It was then found that the right pupil was dilated and the left contracted. "Patient had a convulsion of the right arm, which began in the thumb and ran upward. Had some twitching of the left arm also. Continued to have twitchings in both arms all day. Some twitchings of the right side of face. Complains of severe pains in back of neck. For the past week has been very noisy at night; seems rather dull and stupid to-day." From this time on the symptoms as analyzed by Dr. Prince were as follows: "*General Symptoms.* — Irregular fever, slight chills, headache, vomiting, stupor, delirium. *Local Symptoms.* — (1) Cervical rigidity, tenderness and pain; (2) paralysis of the right sixth nerve; (3) paralysis of right third nerve; (4) paralysis of both pupils; (5) retracted abdomen; (6) mild rigidity of both biceps (arms); (7) localized spasms; (8) temporary weakness of right seventh nerve."

"It is noticeable," says Dr. Prince, "that the local symptoms were latent; that is, that they did not develop until the fourth week of the illness, and that up to that time there was nothing that directed special attention to the brain as the seat of the trouble aside from the fact of the injury to the head."

(On comparing this latter observation with the conditions found in the case of White and the writer the similarity of the two cases is at once apparent.)

An exploratory operation was done at the end of the eighth week, but nothing found either in the region of the cerebellum, which was first explored, or at the base. The patient never rallied from the operation. Total duration of illness was about eight weeks.[84]

Autopsy. — (Thirty-two hours post mortem.) The body was greatly emaciated.

There were scarcely visible remains of ecchymoses in the left temporal region, without definite outlines, and yellowish in color, with a bluish tinge.

The left pupil was larger than the right.

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[32] Prince, Morton: Idiopathic Internal Hydrocephalus (Serous Meningitis) in the Adult, with Reports of Three Cases (Two with Autopsies), Medical and Surgical Reports of the Boston City Hospital, 1897.

[33] The writer has found chills of moderate severity recorded not infrequently in recovering cases, where no suspicion of complicating sepsis could be entertained.

[34] This is compatible with anemia of the bulb as a cause of death in these cases on account of the slow compression induced by the edema of the brain.

The left temporal muscle showed a slight degree of infiltration with blood.

The skull was not fractured and showed no injury whatever, except the recent surgical lesions.

The dura was normal.

The surface of the brain at the vertex showed complete obliteration of the sulci and flattening of the convolutions, *with injection of the vessels of the pia*;[35] the cerebral face was dry and sticky, but *not inflamed*.

On palpation of the brain laterally there was abnormal elasticity.

At the base there was more than the normal amount of cerebro-spinal fluid, with a moist and sodden state of the brain tissues exposed.

The vessels at the base were normal.

There was no pus in the arachnoid spaces.

Section through both of the lateral ventricles found those cavities dilated to about three times their normal capacity; they contained clear fluid with a yellowish tinge to the amount of five fluid ounces.

The ependyma was pale, slightly swollen, velvety, showing a sodden aspect.

The velum interpositum was pale, swollen and moist.

There was no appearance of injury, old or recent, on section of the cerebrum.

The brain substance was *moist*,[35] but not injected.

The heart, lungs, spleen, stomach, pancreas, intestines, liver, gall-bladder, kidneys, suprarenal bodies, great vessels, womb, bladder and ovaries were normal.

Submitting this case to analysis, the writer thinks he can show very definite reasons why the conditions herein found, both clinically and pathologically, should not be considered idiopathic. First, there is a definite history of severe head injury, followed by unconsciousness lasting at least eight hours, and subsequently by more or less psychical disturbance. Second, the headache and vomiting are characteristic of any cranial traumatism, whereas the chills and vague motor manifestations are absolutely characteristic of general contusion.[36] The repeated drops of the temperature to subnormal are in themselves almost pathognomonic. Pathologically, we find not only the ventricles full of fluid, but the whole cerebrum pale and waterlogged, with the ecchymotic remains of contusion in the temporal region.

The question may be asked: "Why do we not more often find the ventricles distended in cases of contusion if contusion is the underlying cause of this condition?" The answer is to be sought in the necessarily fortuitous topographical distribution of any brain traumatism. In a given case the only conditions necessary are a primary paralytic stasis in the tributaries of the Galenic veins and a supplementary obliteration of the Sylvian aqueduct by the compression of the swollen tissues in its neighborhood.

With these facts at command, it seems unnecessary to go out of well-beaten pathological tracks in the attempt to establish a special pathology for certain cases which, in all important respects, correspond in every detail to the condition which we designate cerebral contusion. It seems imperative, moreover, that before we endeavor to evolve an idiopathic basis for the conditions found in the brain after any head injury we should carefully consider the matter in its medicolegal relations. Lastly, the subject is of importance from the point of view of priority of observation, in that Hewitt's antedates that of Quincke by several decades.

A final summary of all the evidence at command simply serves to confirm the conclusions already advanced, and these may be recapitulated as follows:

(1) That traumatic cerebral edema can find no place as a pathological or clinical entity.

(2) That it is primarily the inevitable sequence in time of that complex of pathologic conditions which we designate contusion.

(3) That inasmuch as contusion of the brain and its meninges is most commonly met with as a concomitant lesion to the more macroscopic lesions designated hemorrhage and laceration, the primary seat and extent of its accompanying edema will be largely fortuitous.

(4) That in the rare instances in which the application of a traumatizing force is expended in the production of a local contusion of the brain cortex or its meninges the brain is of itself abundantly able to rid itself of the edema through its venous channels.

(5) That in the remaining cases in which the contusion is primarily extensive in the cerebrum, or when it affects the cerebellum or bulb, the factors which enter into the mechanism of the production of the edema are such as to preclude the possibility of operative relief.

(6) That contusion can, *per se*, easily cause death.

(7) That death in such cases results from anemia of the bulb.

Considering, now, the condition under discussion in the light not of a pathological entity but of a sequence which may be present in any given case of craniocerebral traumatism, we are led to a consideration of cranio-cerebral traumatisms in general. In this regard we will confine ourselves to general observations.

Almost from the inception of the science of surgery the operation of trephining has undergone vicissitudes which constitute an unique chapter in medical history, and the old question of "post hoc propter hoc?" will always prove a barrier to the true estimation of its utility in those pathological conditions of the cranium and its contents due to trauma. Before the introduction of asepsis into surgical technique the danger of septic infection by the operative conversion of a simple into a compound fracture was, of course, the bugbear. Since the introduction of aseptic methods the enthusiasm of certain surgeons has known no bounds and the danger to be expected in trephining has been theoretically minimized to that attendant upon an amputation of the metacarpal bone. Inasmuch as inaccessible fractures of the base constitute about 80 per cent. of all which occur, and inasmuch as it is not the fracture but its consequences which are important, such enthusiasm would seem unwarranted. Even depressed bone has lost its immediate significance since we have learned to distinguish between pressure and compression.

Our knowledge of cerebral localization and function has been derived in part from experiment and in part from induction based upon the pathological findings in cases of brain neoplasms whose clinical expression has been accurately observed. In the majority of such cases the march of symptoms is slow and the portions of the brain outside of those immediately concerned in the growth *healthy*. In animal experimentation, moreover, where certain portions of the cortex have been successfully removed, this has been done piecemeal, and the remaining healthy portions of the brain not traumatized. In these two facts lies the secret of the limitations of cerebral surgery. In the removal of neoplasms the most brilliant successes have always attended those cases where limited regions of the cortex and its underlying tissue only were involved. In the surgery of cerebral traumatisms the most successful results have been obtained when the conditions underlying the immediate injury to the skull have most closely simulated those of a circumscribed cortical neoplasm, namely, uncomplicated middle meningeal hemorrhage. Upon this point there is a singular unanimity of opinion even among the most rabid advocates of the trephine. Roberts,[37] after comparing trephining to amputation of the metacarpal bone, descends to this bald statement of fact: "Hence operation is contraindicated in cases of intracranial bleeding that do not present the symptoms which are believed to be produced by accumulation of blood in either the cavity of the arachnoid or the space between the skull and dura mater."

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[35] Italics are the writer's.

[36] It is interesting to note in this case the very slight evidence of motor symptoms in connection with the enormous amount of fluid present.

How often pure, *uncomplicated* middle meningeal hemorrhage is apt to occur the writer does not know. A study of Jacobson's[38] cases shows but twenty-seven out of seventy.

Cases which are apparent exceptions to the general rule are reported from time to time as demonstrating the wonderful results of aseptic head surgery. A review of the literature will, however, reveal their analogues in the days of Berenger de Carpi and Ambroise Paré.

We may invade the pleural and peritoneal cavities with impunity, but in the cranium we are thus far met by insurmountable barriers. The outgoing century has done much toward the advancement of surgical science, but in the field of nervous surgery alone there is much for the coming century yet to do.

Clinical Department.

A CASE OF DIPHTHERITIC LARYNGITIS, SUPPLEMENTED BY BRONCHO-PNEUMONIA AND ACUTE NEPHRITIS IN A CHILD FIFTEEN MONTHS OLD; RECOVERY.

BY FRANCIS E. PARK, M.D., STONEHAM, MASS.

The reason for reporting this case is to give some brother practitioner a little hope when confronted with a similar experience.

In the early morning of February 14, 1899, I was called to see Paul J., an infant of fifteen months of age. I found a well-nourished, vigorous child, fighting for breath, with all the usual symptoms of laryngeal stenosis. On examining the throat, the tonsils and uvula were seen covered with a diphtheritic membrane. Temperature was 101°, pulse 140, respiration 60 per minute.

There was a history of a very recent case of diphtheria in the same house, and the baby had been home about a week. Antitoxin was administered on the spot, and the usual remedies were tried for relieving stenosis, with success enough to ameliorate, partially, the dyspnea. During the day he was given two more injections of one thousand units each of the State Board's antitoxin, and managed to pass a fairly comfortable night. The following day, in spite of all that I could do to prevent, the dyspnea steadily increased, and in the afternoon I invited Dr. A. W. Dudley to intubate for me. The usual relief was obtained from this procedure, and as the membrane still persisted in the throat we concluded to push the antitoxin.

The case ran an uneventful course for the next four days; the membrane all disappeared by the third day. Temperature kept at about 101° F., pulse 120, respiration 42, and he took his nourishment fairly well. During this period, acting on the supposition that the remedy could do no harm, and believing that we had a dangerous case to deal with, I administered 13,000 units of antitoxin. On the fourth day the tube was removed and all signs of the diphtheria seemed to have vanished. After waiting for two hours it was deemed best to reinsert the tube, as the dyspnea was beginning to increase in an alarming fashion.

It was left in for another four days, but no more antitoxin was used, and about 3 A. M. of the day set for its removal I was sent for again.

The picture presented this time was that of a typical broncho-pneumonia case in its acute onset. Temperature 105°, pulse 140, respiration 80. There was a distinct area in the right upper lung where the physical signs were present. Dr. Dudley removed the tube again at eight o'clock the same morning and concurred with me in my diagnosis. Not to be wearisome, I will simply state that for the next twenty-seven days that fifteen months old child was continuously and dangerously ill with pneumonia, passing through no less than four distinct exacerbations, with a temperature ranging from 103° to 105°, not able to take more than six ounces of milk in the twenty-four hours on an average.

During the second week there was also an attack of acute nephritis with edematous face and extremities. The heart action was very good all through, and not very rapid, ranging close to 120 beats per minute. Respiration was hurried but quite strong. Treatment consisted of the constant administration, at hourly intervals, of a mixture of aconitine, digitalin, and strychnine, together with calcium sulphide and nuclein, and at the end quinine sulphate. No alcoholic stimulants were used. The final drop in the temperature occurred on the twenty-seventh day after the initial rise by crisis; dropping from 104° in three hours to 97° and remaining so for two days. Since then the boy has made a rapid and uneventful recovery.

MASSACHUSETTS GENERAL HOSPITAL. CLINICAL MEETING OF THE MEDICAL BOARD.

(Concluded from No. 16, p. 380.)

Regular meeting, Friday, December 16, 1898, Dr. C. B. Porter in the chair.

Dr. J. C. Warren reported the following cases:

I. EXCISION OF TONGUE FOR CANCER.
II. RESECTION OF CECUM FOR SARCOMA.
III. CATGUT SUTURE OF PATELLA.
IV. CATGUT SUTURE OF PATELLA.

The first case is that of cancer of the tongue operated by me about a month ago. The patient is forty-four years old; first noticed a small nodule on the tongue in July, 1898, entered the hospital November 12, 1898, with an ulceration on the side of the tongue, gluing it to the jaw on the right side so closely that the tongue could not be pulled away in order to inspect the ulcer. No leucoplaque had ever been observed. The operation which I did in this case is one which I have done off and on at different times a great many years, and which I feel has great advantages; it seems to me superior to any of the standard operations for the removal of cancer of the tongue. The operation consists in making an incision from the corner of the mouth down to the chin, and thence back to the ear. The assistant seizes the lip and the operator takes the cheek, in that way controlling hemorrhage completely. This lays bare the jaw and facial artery, which latter is clamped and cut. An incision is then made along the lower edge of the jaw through the periosteum, and with a blunt dissector the soft parts are freed to and fro from the edge of the jaw. In this case two teeth were next removed and a piece of the jaw sawed out. The object of this was to remove the right side of the ulcer as well as its left side. Removal of the left side of the ulcer consisted in removing the tongue; removal of the right side necessitates removing a portion of the bone. In carrying out this idea I followed the teachings of Dr. Bigelow, who used to insist on the importance of neglecting anatomical structures entirely, and keeping strongly in view the importance of giving cancer a wide berth, no matter what parts were sacrificed; so that in this case the bone on one side and the tongue on the other side were necessarily removed. The incision through the cheek enables one to see everything inside of the mouth; to see all the limits of the disease. The moment the jaw was divided the tongue, with a piece of bone attached to it, dropped into the operating wound, and with a pair of curved scissors as much of the tongue as was necessary was excised; that included all the fore part of the tongue, and all the right half of the tongue, and leaving practically only the base of the tongue on the left side, the opposite side to the disease. The parts were dissected down from that point included in the anterior cervical triangle, the apex of which was at the lower part of the incision, and the disease and the supposed infected area were removed in mass. Before the operation one-hundredth grain of atropine had been given, and the whole mouth was dry. There was no infection of the wound. The mucous membrane of the cheek was then stitched to the stump of the tongue. The disability from the division of the jaw is very slight indeed. The patient can open and shut the mouth with very little lateral displacement of the jaw, because the mucous membrane of the cheek goes in between the fragments and prevents, therefore, very close approximation. The patient recovered well from the operation. The object in showing the case was to bring out the advantage of atropine in these operations in getting rid of saliva, and in making an incision from the corner of the mouth, instead of underneath the chin, as is customary, as it enables you to see and to operate much better.

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[37] Roberts J. B.: American Surgical Association, Philadelphia, 1885, Transactions, vol. iii, p. 50.

[38] Jacobson, W. H. A.: Guy's Hospital Rep., 1886, vol. 28, pp. 147-308.

This is a boy I presented at the meeting a year ago for sarcoma of the mesentery and the cecum, and gave an account of resection of sarcoma of the mesentery. The boy I have not seen for nearly a year, but I sent for him to day, and, as you see, he is in good health. I believe there is a slight hernia at the site of the scar. We sewed him up tight at the time. For the benefit of those gentlemen not here the last time, I will say, after resecting the cecum I brought the ends together with a Murphy button. Two or three days afterward I put in a small drain, but there was no leakage. The button was passed on the twelfth day. I show the boy to-night as a case that has so far remained well. We put him under the post-operative treatment with the Coley antitoxin. The disease was a round-celled sarcoma.

Dr. Harrington has examined a very large number of these cicatrices of the abdomen after operation of the appendix, and he characterized that as not a true hernia, but as a "bulge," or localized paralysis of the abdominal wall.

The other two cases I have to show this evening are cases of suture of the patella. You know the interest in the subject of fracture of the patella, and how the open operation has come in, beginning first with wiring of the patella. Lately there has been a tendency on the part of some surgeons to abandon the wire as being unnecessarily severe, and as leaving in the tissues a metallic substance which is not absorbed. The operations which I have done, the open operations, have convinced me that the principal obstacle to a good result after fracture of the patella is the presence of bits of fascia between the broken surfaces, and not the retraction of the ends, and the more one sees of the fresh conditions I think the more one must be convinced that that is a very important factor in preventing not only union of the bone but the formation of a proper ligament. The result is that in many cases the ligament will not be anything like the width of the bone itself, but only perhaps half the width, and, therefore, will be, of course, a very weak support to the bone. The difficulty — you may say the impossibility — of telling just how much material is placed between the ends in any given case shows the importance of the open method where it is permissible. Of course it is permissible only where proper aseptic precautions can be carried out, and should not be attempted unless the surgeon is perfectly sure of his capacity to carry out the necessary precautions. In a case operated upon by Dr. Porter recently, about a week after the fracture, this interposition of the soft parts seemed to have assumed considerable dimensions, owing to the exudation forming a thick covering over the ends of the fragments. In the fresh case the tissue between the bones appears to be thin strips of fascia or periosteum, which are torn irregularly and hang down as shreds.

The operation which I have performed in this case, and which many surgeons are doing to-day, consists simply in removing the intervening tissue and then stitching the periosteum of one fragment to the periosteum of the other and continuing the stitching up on either side of the wound into the aponeurosis and other structures forming the capsule of the joint. The material used in this case was chromicized catgut. It seems to me really of secondary importance what kind of suture is used. I think ordinary catgut or silk would be equally satisfactory. This case was operated upon a little over six weeks ago. It is now in its seventh week, and I have a skiagraph taken which shows the position of the bone and the stage of the formation of new bone. There is a small callus here between the two fragments, and the skiagraph shows that in the centre of this callus ossification is taking place, so that bony union has already begun. The patient was taken out of bed at the end of five weeks, and began to use crutches at the end of six weeks, and he is now walking about without anything but a bandage on. The question of the treatment during convalescence is important. Of course the great advantage of suture, whether of wire or of other material, is that it will shorten the period of convalescence from six to twelve months, to the ordinary period necessary to heal the average fractures in long bones, and that is what I am endeavoring to test in two cases of which this is one, and, consequently, I am getting him to use the crutches and handle himself well at the end of six weeks, and in the course of another two weeks I shall hope to see him bend the limb, and then I shall advise the use of massage, moving of the patella, limbering up the cicatrices of the aponeurosis covering the joint, and in that way favoring the movements of flexion and extension. (At eight weeks the man walks without stick or crutches and bends the knee nearly to a right angle.)

The other patient was operated upon at the same time, and she has also been round on crutches, and I will pass around a skiagraph of her case. In both these cases there seems to be good union. The amount of constitutional disturbance is slight in these cases, the temperature hardly going up at all. You see there are lateral movements of the patella. I have adopted this method now in three cases, but I do not pretend to set it up above other methods. I am trying this method instead of wiring so as to compare the two methods. As far as I have gone I feel very much pleased with it. I sutured one last year and the patient got excellent union. I think there is no difficulty about bone formation provided we get the soft parts away from between the ends of the bone.

Dr. Elliot: So far as the chromicized catgut goes, I should think it would be just as useful as wire, in that I took some out of a case the other day that had been in four years and had not dissolved. Wire, I am sure, does not last as long as that.

Dr. Warren: In regard to the statement made about chromicized gut, I think the New York surgeons claim it will hold for forty days. That is why they use chromicized gut. As I said before, I think the material is not a matter of importance.

I merely wish to take one moment more of time in passing around a *multilocular dermoid cyst* containing a lot of hair about the size of the fist; the hair has been left on the different loculi; one of them is covered by calcareous matter. The patient is a girl of about twenty-one years of age.

Dr. C. B. Porter showed the following case of

HYDATID OF THE LIVER,

transferred to him for operation by Dr. Fitz, who, at the request of Dr. Porter, made the following remarks:

Dr. Fitz: The patient was admitted to the medical ward from the out-patient department, where the diagnosis had been made by Dr. Jackson, who examined the patient. The diagnosis was rendered more easy because she stated that some eight years ago a hydatid had been removed from the liver and the scar was to be seen. She is an Icelander, but since early girlhood has been in the Northwest, and while there had a hydatid removed. The recurrence of the discomfort and shortness of breath led her to seek for medical advice, when the greatly increased area of hepatic dulness became manifest.

Dr. C. B. Porter: It may be said that the diagnosis was easy from the previous operation, but the operation was not made easier. Here is the outline of the tumor, which extended across here and down to this point and up here to the level of the nipple. That of course was tumor and liver, and this scar which you see here is what was left after the previous operation. It goes without saying that there were certain adhesions left, and the question was how I could best attack the tumor. I made up my mind that the thing to do would be to make a central incision through the abdominal wall large enough to introduce my hand and feel of the cyst, so as to decide how it was best approached. I found it was wholly in the hypochondrium on the right side. The adhesions here were marked. A second incision was made five inches long parallel to the lower border of the ribs. The tumor was exposed, tapped, and the sac fastened to the abdominal wall to prevent escape into the abdominal cavity. That having been done I took a long pair of hemostatic forceps, with gauze sponge, and swept around the interior and got out the pultaceous sac that looks like tripe. After the operation the patient ran a temperature which was more or less erratic, nothing really septic until there was a very sharp rise, which occurred when the gauze drains no longer drained. A rubber tube was introduced and the temperature came down and has been running on the normal line.

Dr. Porter: I have some photographs to present, and I will just hold one up there so that the gentlemen can see the before and the after. This was a large tumor of the neck, and the photographs will show the front view before the beard was cut off. This man had a very long beard and grown in the form of a fan, so that it covered the tumor pretty well from the front. I said, "Have it braided, and have a photograph taken before and after." At the side it did not cover it. Here was this man, with a tumor almost as broad as the shoulder, growing for ten years, apparently a large goitre, but it had already affected his voice, and he was in such condition that I feared anesthetics of any kind would finish the work before I could relieve it. I tried first putting a stitch into the skin and lifting the tumor from the trachea, but it made it worse. I knew from the sensation that it was partly cystic. Not being able to lift the tumor with any comfort, and not feeling that I could give an anesthetic, I put in a trocar on one side and then on the other, and the fact is that the fluid flowed until the tumor was only a collapsed cyst. I cut out the extra skin down to the vessels, and curetted the whole of the interior surface, with the exception of that which lay over the vessels, and found that the thyrohyoid membrane flapped to and fro like a sail in the wind as he breathed, and would flap back to the posterior wall, and he would have to shake himself to breathe. He made an uninterrupted recovery. Drainage was established on each side because a portion of the sac could not be destroyed. He was operated October 7th and left October 19th, with a little granulating surface. He has since been heard from and is perfectly well.

Dr. Whitney: The condition is a remarkable one. The microscopic examination of the cyst wall showed its structure to be that of a racemose gland with ducts. A cystoadenoma of the thyroid (goitre) was naturally what was expected; but the situation of the cyst above the thyroid cartilage would rather favor the idea that it had originated from a portion of one of the submaxillary glands that had been misplaced in its development. There are also little glands of a racemose character with ducts, described as normally lying low down in the neck, close to the thyroid, and the possibility of its origin from these cannot be overlooked.

Dr. Porter: I have some sketches from skiagraphs of fractured patellæ which have been wired, and I won't repeat what Dr. Warren has said with regard to the fragments of the tissue which fall between, and which are such an important element in preventing osseous union, but will state some reasons I have for not approving of the soft sutures, either silk or catgut, but my preference for wire. I shall have some cases to show, but I would like to show the skiagraphs of one or two not here. This is the skiagraph of a case whose patella was fractured probably by muscular contraction, and the fragments in very good position at the time of entrance ten days later. The operation was done two weeks after the injury. The capsule and blood-clot were between the fragments, so that I had to scrape with a curette to clean the bone surfaces and make them fresh so as to approximate them, and the picture represents the separation of the fragments, which was filled in practically by the blood-clot, and you see how the fragments were approximated after the wire was put in. The sketches go in pairs and so marked that one can tell the before and the after operation.

I have a case here, that I have shown before, where he had fractured his patella eight months previously,— three inches of separation,— and I show the skiagraph again now because he has returned within a few weeks for a picture to be made. This is interesting because there were eight months of separation, and when I got the wires into the fragments it was impossible to get them together. Dr. Newell was assisting me at that time, and it took us an hour to approximate them, and we broke the wires once or twice. I cut the quadriceps four or five inches above the patella down to the bone, and approximated these fragments by dividing bands as they appeared. There is the picture a year or more afterwards showing the wire in position, and he came to us with motion well to the right angle, and saying he was able to carry bags of 250 to 300 pounds in weight, and is capable of attending to his work after as before the accident. In a case like that catgut would not stand the strain, and the wire broke where the twists were taken. Nothing but the silver wire would stand, and the silver wire is now in the patella.

Here is a similar case, and you can see the separation of the fragments, three and one-half inches, at the time the patient entered the house. Here is a picture showing the position of the fragments of the patella now and the wire in. This woman had an injury five years previously, and the fracture probably due to muscular contraction. In doing this operation the quadriceps was divided, the capsule divided, and three large silver wires used; the wound was drained at the corner. When you see the patient you will see the reason. She is a large fat woman with a broad leg, and the resulting wound was so large that I did not like to close it absolutely and entirely, but the wicks were taken out in a day or two and the wound closed immediately.

I would like to speak of another case, as it shows three fragments of the patella. The straps holding the fragments together show in this picture. This was done twelve days after the injury. That third fragment you see could not be adjusted in position and was taken out, and there are the two remaining fragments, and the wire which shows at the side shows the point at which the bone was taken out.

This man came to my office a year and a half after this was done, and showed me his knee with an acute synovitis from falling on it. On examination I found the patella held. He has met with other mishaps since, and within two or three weeks he has been here and the picture was taken, and that shows the wire through the fragments and the separation that has taken place since the last injury.

I have a feeling with regard to the use of wire in contradistinction to silk or catgut, that just so strong as the wire is so much stronger is the union of the patella. I have never been obliged to take it out but twice, and then it had done no harm because it is not introduced deep enough.

Here is a case wired five weeks ago to-morrow. He has been on crutches a week. This patella is quite movable. The temperature rose to 100° on the day after the operation and dropped to normal and has been practically on the normal line since.

It is the present perfection of wound treatment that makes it safe to do this. I would have it done on myself if I were hurt to-morrow; would submit to the treatment rather than the long confinement it requires to recover from this injury in the ordinary way. This man said to me, "I cannot be laid up this length of time if anything can be done to shorten my getting well." I have always presented the case to the patient that there was a possibility — that no one could do perfect work every time, and sooner or later we should have trouble. I have wired, I think, thirteen, and never had any trouble from any one of them. I should advise operation as soon as the synovitis has subsided, but I am not sure it would not be possible to do away with the synovitis if it were done at once. I have waited ten to twelve days until the synovitis was gone, but I have been thinking whether the opening at once and relieving the tension would not cure the synovitis, so to speak. You get rid of the blood-clot which fills the joint, and takes a long time to be absorbed.

SKIAGRAPHS OF CALCIFIED ARTERIES.

Dr. R. H. Fitz showed some skiagraphs of extensive calcifications of the arteries of the wrist and hand. He also showed a case of extensive circumscribed tympanitic distention of the abdomen, presenting many of the characteristics of phantom tumor. The vagueness of this term was emphasized, and the suggestion made that permanent lesions of the intestine remediable by surgery have been included under this term.

HEMORRHAGIC OVARIAN CYST; TWISTED PEDICLE; EXCISION; RECOVERY.

Dr. H. H. A. Beach reported the following cases:

The patient was a single woman of twenty-six years. She entered the hospital with the history of an attack of pain in the left iliac region one year ago, and of another attack in the same region three weeks since.

The pain was relieved by poultices, but again returned three days ago. Her temperature was 102°, pulse 100, upon the morning of her admission, and she was flowing.

Upon examination, a tumor of the size of two clenched fists was found in the right iliac region, extending nearly to the median line and bimanually into the posterior cul-de-sac. The temperature and pulse lowered to a normal point, and the flow stopped after a few days of rest in bed. A median incision of five inches disclosed a chocolate-colored cyst, from which had exuded a mass of clot that extended posteriorly, and suggested in appearance the tube of an extra-uterine pregnancy. The pedicle was twisted for the space of an inch and attached it to the left side of the uterus. After removal the cavity was washed out with salt solution. Patient's recovery has been rapid and uneventful.

EXTRA-UTERINE PREGNANCY.

Patient thirty-nine years of age, and married. Seven months ago flowing began and continued for three months, with pain in the lower part of the back and left iliac region. Two months ago flowing began again, accompanied with pain of the same character.

Upon examination, uterus was found retroverted but not much enlarged. A rounded and tender mass of the size of an orange found in the left iliac region; white blood count 12,700. Median incision of four inches; a double loop of intestine found adherent to the anterior abdominal wall and to the fundus of the uterus, suggesting the appearance of a malignant growth.

The intestine was carefully detached from the abdominal wall and from the uterus. The loops were separated, and then appeared a distended tube of the left side containing old clots. The tube and ovary were removed, and upon examination by Dr. Whitney proved to contain chorionic villi.

Report of Dr. Whitney's Examination. — About six centimetres of the Fallopian tube covered with firmly adherent fibrin and blood clot. On removing this the tube was found dilated, but unruptured, and the fimbriated end so contracted as hardly to admit a small probe. The tube contained no blood, but there was a small fragment of shaggy tissue lying free in the cavity, and about three centimetres from the end was another similar fragment attached to the wall. Microscopic examination showed the tissue to be covered with clubbed branching filaments similar to those of the chorionic villi of the eighth to thirteenth week; ectopic pregnancy.

Dr. Whitney: The tube was interesting in that on removal of the clot there was no rupture of the tube to be found; it was rather larger than the thumb, and on opening it there was a small bit of shaggy looking tissue lying loose midway in the tube; and more tissue also showed the chorionic villi at the uterine end. This was a case of tubal abortion, which must have occurred some time ago — one of the cases of chronic bleeding in which there was no active hemorrhage, and one which possibly might have recovered after a time, the active process having entirely ceased. This is borne out by the history of the case. The woman had symptoms of some trouble six or seven months ago, and that would very likely correspond to the time the fetus aborted in the tube, and from that time on there has been hemorrhage from the fimbriated end of the tube formed, and the mass was more or less lamellated blood clot, which surrounded the tube. The condition is parallel to the cases of blighted ovum within the uterus, where after twelve or thirteen months from the first symptoms of pregnancy one finds an embryo of not more than twenty-eight or thirty days, showing that abortion has taken place at this early period and the ovum been retained. In the same way in tubal pregnancy there may occur an early abortion, and the symptoms persist some time. Those are cases which probably in former times recovered without an operation.

RECURRENT SARCOMA OF SCALP.

The photographs shown illustrate the facility with which the large area of denuded periosteum and bone was covered with a new scalp. The growth had existed for six months before entering the hospital, having recurred within a few weeks after its removal in another city.

The President: I would like to ask if microscopic examination shows any recurrence now?

ACUTE INTESTINAL OBSTRUCTION FOUR WEEKS AFTER ABDOMINAL SECTION FOR GENERAL PERITONITIS.

The patient, a boy thirteen years old, entered the hospital in September with general peritonitis, due to an extension of sepsis from an attack of appendicitis. For this condition Dr. W. A. Brown opened the abdomen by an incision in the right iliac region, removed the gangrenous appendix and washed out the peritoneal cavity with salt solution; drainage with gauze. Great relief to all of his symptoms followed, and the wound slowly closed and became a linear granulating surface.

Four weeks after the operation a visitor called and presented him with some fruit, of which he ate at once three peaches and five bananas. This was followed by an attack of indigestion and vomiting, which persisted in spite of remedies until it became fecal. He was etherized, and the abdominal cavity reopened in the median line, midway between the ensiform cartilage and the umbilicus, as that seemed to be the point of greatest distention and distress.

After separating a few adhesions, I found a band constricting the small intestine. It was divided and the loosened intestine withdrawn for examination. It was so much distended by gas and fluid that I opened it and discharged its contents into a basin. After carefully cleansing the vicinity of the incision it was sutured and the gut returned to the abdomen. The wound was filled with gauze. Vomiting ceased during the night, and on the following morning he had a movement of the bowels. Since that time his recovery has been steadily good, and the wound has nearly healed.

The Centennial of the Medico-Chirurgical Faculty of Maryland. — The Centennial Anniversary of the founding of the Medical and Chirurgical Faculty of Maryland will be celebrated on April 25th. The programme includes an address by the president, Dr. Samuel C. Chew, and a reception by the faculty. The annual address, by Dr. W. W. Keen, of Philadelphia, subject, "The Debt of the Public to the Profession," will be delivered on April 26th.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D., BOSTON.

(Concluded from No. 16, p. 383.)

A NEW TYPICAL FORM OF ACUTE INTESTINAL OBSTRUCTION.

Hochenegg[18] reports an interesting series of five cases of intestinal obstruction, which demonstrates a new typical form of intestinal obstruction which he has named "Combinationsileus."

In all the cases it was noted that a stenosis of the colon had existed for some time, producing an hypertrophy of the walls of the gut. Besides this lesion, all the patients suffered from an acute intercurrent obstruction of the small intestine, either by bands, contracting scar tissue, or herniæ, the acute activity of which was produced by the drawing back of the intestinal contents, in the first place, by the obstruction in the large intestine. The intestine is distended between these points of stenosis and above them, and is marked by increased peristalsis. If the operation is undertaken at this stage only the obstruction in the colon would be detected.

The chronic condition present in the colon would cause an hypertrophy of its walls, and there would be greater force in its peristalsis, which would be more effectual than that of the small intestine, and in consequence the retrograde peristalsis from the colon would finally force all its contents above the seat of stricture in the small intestine.

An operation undertaken at this time would undoubtedly remove only the obstruction in the small intestine, while the primary cause of the trouble would go undetected. This occurred in all the author's cases. At first there was apparent improvement, the patient gaining for a few days, when suddenly the symptoms of obstruction returned, with all their former severity, the subsequent operation alone demonstrating the true condition. Since the former operation and the patient's subsequent condition have so altered the force of the peristaltic movements in the colon that they are scarcely visible the condition is difficult to differentiate from peritonitis.

Such a condition is a very serious one for an operator to face who believes that he has already removed all cause of obstruction, and it has probably frequently happened that patients have died because the possibility of such a complication was not thought of. The long interval between the relapses which some of the cases showed was possibly due to a temporary subsidence of the edema present at the primary point of obstruction, caused by the rest and treatment of the secondary lesion. The occurrence of five cases in fifty-two operations performed by the author for intestinal obstruction shows that the condition is not so rare as might be supposed.

The diagnosis is materially assisted by considering the patient's statements as to where he first experienced pain and what the locality was in which the obstruction seemed to him to be situated. More certain is the observation in the early stages of peristaltic movements in the distended colon and the subsequent change in the location of the symptoms. The change is generally one from a condition in which therapeutic measures might be considered to one in which only immediate operative interference can be considered.

The symptom at the time of operation which will lead to the detection of such a condition, when it is suspected, is the contrast between the two portions of the colon. Above it is hypertrophied from the continued action required in overcoming the chronic condition prior to the complete obstruction, while below in the descending colon the intestinal wall is of normal thickness.

IDIOPATHIC DILATATION OF THE COLON.

Treves,[19] in an article on this subject, states that of late years there has crept into medicine the term "idiopathic dilatation of the colon." The term has been applied to certain morbid conditions in which a few common clinical manifestations appear to have given expression to varied and possibly diverse pathological states. Whatever may be the structural changes which give rise to this dilatation of the bowel, the clinical phenomena included under the term are more or less definite and unvaried. The main features are these: The colon, and especially the lower part of it, is enormously dilated. It is tympanitic, and distended with gas to a degree that in some instances almost surpasses belief. The patient suffers from certain mechanical effects of this distention and notably from shortness of breath, palpitation of the heart, edema of the legs, and possibly albuminuria. The patient may be unable to move, and the difficulty of breathing may be such that the face and extremities become livid. Marked constipation is usually a conspicuous feature, while vomiting and troublesome hiccough are not uncommon. The particular term "idiopathic dilatation" is based upon the assumption that the distention of the bowel is not due to any obstruction in its lumen. The author, therefore, excludes from his category all cases of dilatation of the colon due to volvulus, to the impaction of fecal masses or foreign bodies, to the lodgment of concretions, and to the existence of stricture of any type. In like manner he excludes cases in which the colon or rectum has been narrowed or occluded by the pressure of a tumor having its origin without the bowel wall. The author states that any part of the alimentary tube may become dilated without there being the least obstruction in its lumen. At one time it was supposed that whenever the stomach was dilated there was some obstruction at the pylorus which prevented the escape of the gastric contents and allowed the organ to be dilated by the gaseous products of decomposition. In like manner in marked tympanites of the bowel it was loosely assumed that the bowel was distended with gas which could not escape owing to some obstruction in the distal part of the canal. These assumptions have long since been shown to be without foundation. Obstruction in the lumen of the intestine is not the most ready means of inducing meteorism. Interference with the innervation and blood supply of the bowel wall will cause a much more speedy tympanitis. In animals the ligaturing of the main mesenteric vein is followed by quite intense meteorism, and one of the most extreme cases the author has seen of tympanites of the small intestine in the human subject was due to thrombosis of the superior mesenteric vein. From a clinical point of view it is desirable to recognize most fully that distention of any portion of the alimentary canal may be entirely dissociated from any obstruction in the lumen of the tube. Idiopathic dilatation of the colon of moderate degree is well seen in what may be termed masked peritonitis. A little inflammatory focus within the abdomen (and without the pelvis) is a common cause of persisting dilatation of bowel. The author, after recording a number of cases, among them being a case in which the entire rectum, sigmoid flexure, and descending colon were excised, ventures the opinion that there is strong evidence to support the suggestion that all cases of "idiopathic dilatation of the colon" in young children are due to congenital defects in the terminal part of the bowel, that there is in such cases an actual mechanical obstruction, and that the dilatation of the bowel is not idiopathic. The marked hypertrophy of the distended gut suggests in the most emphatic way that there is an obstruction to be overcome, and such hypertrophy is quite inconsistent with the conception of an "idiopathic" dilatation of the bowel.

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[18] Weiner klin. Woch., December 23, 1897; American Journal of Medical Sciences, October, 1898, p. 476.

[19] London Lancet, January 29, 1898, p. 276.

THE PATHOLOGY AND TREATMENT OF RECTAL STRICTURES.

Rieder,[20] in discussing the questions whether there are such lesions as syphilitic stricture of the rectum, and whether it can be recognized by microscopical examination, comes to the following conclusions: syphilitic stricture of the rectum does exist; it arises from the blood-vessels (perhaps, also, from the lymphatics); this origin is the cause of its relative frequency among women.

Concerning the venous involvement early in the disease, the author says it is of practical interest. If the veins of the skin are seen filled with cellular infiltration, which probably is the bearer of syphilitic virus, if the newly-formed and inflamed tissues are seen to press into the lumen of veins, then it can be recognized not only that local but that general dissemination of the disease may take place through this route, as was established years ago by Auspitz and Unna. It is readily understood how the hard sore practically always occasions general infection, and how excision of the primary sore no more saves the patient than does the disinfection or excision of an infected sore preserve a patient from pyemia once the necessary poison has gained access to the venous circulation. The reason why syphilitic stricture of the rectum is much more common in women than in men is found in the anatomy of the parts. In women the lower group of rectal veins anastomose directly with the external pudendal, which arise from the posterior vulvar commissure. This commissure is not rarely the site of a primary sore and of secondary, but more especially of tertiary, lesions. In the male the syphilitic poison when taken up by the veins has to take a roundabout course through the vesical plexus before it can go from the foreskin or glans to the rectal vessels. In women the syphilitic virus taken up by the vulvar plexus is at once carried into the hemorrhoidal veins.

TRAUMATIC AFFECTIONS OF THE LIVER.

Waring,[21] in discussing the treatment of traumatisms of the liver, gives the following as the clinical conditions which he considers may form indications for the removal of a portion of that organ:

(1) Carcinoma of the gall-bladder, in which the disease has not extended beyond the gall-bladder and the adjacent portion of the liver and there are no signs of secondary growths either in other parts of the liver or in other viscera.

(2) The presence of a localized non-malignant tumor of the liver, such as angioma, angiofibroma, or adenoma, which is increasing in size and giving rise to trouble.

(3) The presence of a localized hepatic tumor which is due to a mass of echinococcus multilocularis.

(4) Congential hernia of a portion of the liver in which the herniated portion cannot be returned within the abdomen.

(5) Sarcoma, primary or in the liver, occasionally occurs, and has been treated by excision. In one case the patient was alive two years afterwards and in the other the disease recurred in a few weeks and the patient died.

Primary sarcoma of the liver is exceedingly rare. If it is in the form of a localized tumor an attempt may be made to remove it. The liver is frequently the seat of secondary malignant growths, but operation is contraindicated in such cases.

The author states that his original researches on animals and the study of the results produced in reported cases have led him to the following conclusions:

(1) That the dangers of hemorrhage after removal of portions of the liver have been much exaggerated.

(2) That the best method of controlling and arresting hemorrhage from liver tissue after it has been incised or torn is temporary compression of the vessels in the gastro-hepatic omentum, and then ligature of the divided vessels.

(3) That when the liver is the seat of growths such as are classed as operable a surgeon ought to be prepared to carry out an operation for their removal.

(4) That the mortality which will result from operations of this kind is not greater than in many of the recognized abdominal operations, such as resection of the intestine.

REMOVAL OF BILIARY CALCULI FROM THE COMMON DUCT BY THE DUODENAL ROUTE.

McBurney,[22] in an article on this subject, in describing his operation to reach the point where the common duct joined the intestine by entering the duodenum through the anterior wall of its descending portion states that he made a vertical incision, about one and a half inches long, at the point referred to, and found the papilla which marked the entrance to the common duct directly opposite the incision. A probe was introduced without difficulty, which, after passing about half an inch upward through the duct, came in contact with a firmly impacted stone. The orifice of the duct was first slightly incised, then, with the aid of forceps, largely stretched, until it was possible without difficulty to dislodge the calculus and draw it down into the intestine. Large quantities of bile immediately flowed into the gut. The wound in the intestine was then sutured with three rows of silk. The parts that had been exposed were carefully cleansed and the abdominal wound sutured with catgut, leaving only a small orifice for drainage by means of a piece of iodoform gauze.

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[20] Arch. für klin. Chir., Band lv., S. 730; American Journal of Medical Sciences, December, 1898, p. 726.

[21] British Medical Journal, March 19, 1898; American Journal of Medical Sciences, February, 1899, p. 224.

[22] Annals of Surgery, October, 1898, p. 481.

When a gall-stone lies in the common duct, at any point in the upper two thirds of that passage, the approach to it through the wall of the duct is not difficult. In most cases, however, the management of the wound may be left open and the space about it drained through the anterior abdominal wall with comparative safety, yet, of course, one would much prefer, when it is possible, to avoid long continued drainage with its accompanying dangers. Suture of a wound in the common duct can occasionally be accomplished with comparative ease, more especially if the patient is thin and no adhesions exist to interfere with clean intraperitoneal work; but very frequently the complete suture of a wound in the common duct is exceedingly difficult, especially when the wall of the duct has become more thinned by distention, and successful suture may be quite impossible. When a stone is situated at the extreme lower end of the passage, and when it cannot be dislodged to a place higher up in the duct, its removal without opening the intestine is a matter of great difficulty and not a little danger. Under such circumstances, the author thinks that the removal of the stone through the intestine — or rather by the duodenal route — is clearly indicated, there being no possible objection to the method, excepting the fact that the intestine is necessarily incised. When one remembers, however, how much easier, on account of proximity, it is to suture the anterior wall of the duodenum than to suture the incised wall of the common duct, and when one remembers the rapidity and perfection with which properly sutured intestinal wounds heal, the choice of operation in suitable cases seems, to the author, to lie clearly in favor of the method which he has described. His conviction is that this operation has a much wider application than he has thus far given it, and his experience leads him to prefer this plan for the removal of a calculus situated at almost any point from the termination of the cystic duct to the point of entrance of the common duct into the duodenum. The author has found the orifice of the duct very easily dilatable, and it may be freely incised for at least half an inch with perfect safety. The operation is quicker, cleaner and safer, in the author's opinion, than the operation which is usually done. It has also the advantages that, by the introduction of a probe, the bile-ducts can be examined for a long distance upward towards the liver, and also, the orifice of the duct having been dilated to a large extent, there is far less likelihood that overlooked fragments of gall-stone, granular material, or thick bile will be retained and give rise to further obstruction.

THE OPERATIVE SURGERY OF THE JOINTS.

Marsh,[23] in regard to operation on the joints, says that there is an obvious parallel to be drawn between the joints and the abdomen in regard to the results that have followed the introduction of asepsis into surgical practice. It is certain that it is just as safe to open the knee, or any other joint, as it is to open the abdomen, and that, as in the case of the peritoneum, so in that of the synovial membranes, the old view that these structures are in some way inherently unsuitable for operative treatment is erroneous.

As an illustration of the truth of this statement he relates the results which he has obtained in the open treatment of different joints for the various injuries. In operations for loose cartilages in the knee-joint he prefers their removal to suture, and in all of the twelve cases operated upon the functional result has been perfect and the recovery afebrile.

Loose bodies in the knee are also favorably operated upon, and in two recent cases which he reports extensive manipulation was extremely well borne, with a perfect recovery and complete restoration of function.

Suture of the patella represents a test-operation by the open method in recent or old fractures. The results obtained appear to show conclusively that the operation has taken its place on the list of recent advances in practical surgery, and the evidence it affords as to the tolerance, by the joints, of active interference is sufficiently conclusive.

The general safety with which excision of the joints can now be performed is best illustrated by the results obtained in the case of the knee — the largest of the joints — and that in which an operation involves the most extensive wound of the soft parts, and the largest exposure of cancellous bone. Yet when care is taken to select appropriate cases primary union after excision of the knee is as certain to take place as it is after ovariotomy or removal of the appendix.

Operation in sacro-iliac disease the author believes to be as free from danger under aseptic conditions as in operating on the other joints, and he holds that excellent results can be obtained even where the disease, in this particular region, has advanced to a considerable extent. He illustrates the results obtainable by the histories of five cases where operation produced gratifying results.

A CLINICAL AND HISTOLOGICAL STUDY OF CERTAIN ADENO-CARCINOMATA OF THE BREAST.

Halsted,[24] in an article on this subject, gives the results of operations for breast cancer at the Johns Hopkins Hospital from June, 1889, to April, 1898, and states that during the two years preceding the writing of his paper the majority of the breast operations have probably been performed by his assistants, Drs. Finney, Bloodgood and Cushing, but that prior to that period almost all the breast cancers were operated upon by himself. He states that 133 cases have been operated upon; 76 of these more than three years ago. There have been 13 (9 per cent.) local and 22 (16 per cent.) regionary recurrences. Of the 76 cases operated upon three or more years ago, 31 (41 per cent.) are living without local recurrrence or signs of metastasis; 10 died more than three years after the operation, and one as late as five and a half years thereafter; of these 10, one had a local recurrence. Forty cases, therefore (52 per cent.), lived more than three years without signs of local or regionary recurrence. Some of the 10 cases which died may have had at three years signs of metastasis; but the author does not make a positive statement as to this point. Thirty-five cases (46 per cent.) died within three years of the operation, and seven of these with local recurrence.

BIER'S NEW OSTEOPLASTIC AMPUTATION.

Payr[25] reports three cases in which this new osteoplastic method of amputation was employed with success, as demonstrated by a skiagraph taken a year after the operation.

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[23] British Medical Journal, March 5, 1898; American Journal of Medical Sciences, December, 1898, p. 728.

[24] Annals of Surgery, November, 1898, p. 557.

[25] Centralblatt für Chir., 1898, No. 19; American Journal of Medical Sciences, March, 1899, page 351.

The purpose of the method is to unite the extremities of the tibia and fibula by an osteoperiosteal flap, which is derived from the tibia in the following manner:

A musculocutaneous flap is formed from either the anterior and external or the anterior and internal aspect of the leg in the ordinary manner. The tibia is freed to a considerable distance below the point at which it is desired to amputate. A transverse incision is then made at a distance below the line of amputation equal to the length of the desired bone-flap. This incision forms the base of a wedge-shaped portion of the tibia, that after removal permits the insertion of a flat saw-blade and the cutting of the osteoperiosteal flap to the line of amputation. The periosteum is now raised over the line of amputation at the base of the osteoperiosteal flap. A grooved director is based beneath the periosteum, and with a narrow saw the portion of the bone-flap is removed, which will permit it to bend over without interfering with the circulation, on which it depends for its nutrition. When this has been accomplished the flap of bone is turned back and the tibia cut through. The fibula is cut at the same level and the osteoperiosteal flap is fastened upon the resected ends of the two bones. The wound is closed in the usual manner. Asepsis or the use of only non-irritating antiseptics is essential to the success of this operation. The Röntgen ray picture showed that the osteoperiosteal flap had retained its original thickness throughout, and that it was firmly united to both the tibia and fibula. The functional result attained was all that could be desired.

FURTHER OBSERVATIONS REGARDING THE USE OF THE BONE-CLAMP IN UNUNITED FRACTURES, FRACTURES WITH MALUNION, AND RECENT FRACTURES WITH A TENDENCY TO DISPLACEMENT.

Parkhill, in an article on this subject,[26] in which he gives the histories of a number of cases where the bone-clamp had been used, claims for his instrument:

(1) That union has been secured in every case in which it has been used, as against 56 per cent. of cures by all mechanical means, according to the statistics of Bruns and Gurlt.

(2) That it is easily and accurately adjusted.

(3) That it prevents both longitudinal and lateral motion between the fragments.

(4) That the presence of the shafts in the bone stimulates the production of osseous tissue.

(5) That nothing is left in the tissues that might reduce their vitality or lead to pain and infection.

(6) That no secondary operation is necessitated.

ASEPSIS IN OPERATIONS.

Quenu[27] says, in discussing the work of Mikulicz in perfecting aseptic technique in operating, that asepsis is not to be abandoned and a return made to antisepsis, but that the defects in aseptic operating must be discovered and means found for overcoming them.

The employment of gloves in operating produced such marvellous improvement in Mikulicz's results as to render his technique almost perfect.

Quenu has found that ordinary white cotton gloves, such as worn by servants, when sterilized in the usual manner serve all the desired ends. They are not impermeable, and the hands should be rendered as aseptic as possible by the ordinary scrubbing, alcohol and antiseptic washings. In a short operation one pair of gloves is enough, but if the operation is longer they become soaked through, and one or two changes are necessary. They do not interfere with the ordinary manipulations in operating, and their ready employment is only a matter of habit. The employment of sterilized gauze before the mouth to prevent infection from coughing and speaking is favored by this author.

In his service for the past six years he has never examined a suppurating case the morning before an operation of grave character, such as laparotomy. His wards are divided for suppurating and non-suppurating cases, and all suppurating cases are operated upon by his assistants. Of course, he is obliged to make rectal and vaginal examinations, but these are never made on a morning preceding a grave operation. Immediately after such examinations the hands are thoroughly scrubbed with soap and water, washed in alcohol, then in permanganate of potassium, followed by bisulphite of soda, and, finally, in alcohol again.

The greatest care is given to the periungual spaces. After thorough sterilization they are painted with tincture of iodine. He agrees with Mikulicz in admitting as few as possible into the operating-room, and does not perform major operations in a large amphitheatre. He also believes that speaking should be avoided as far as is practical during the operation.

CATGUT VERSUS SILK.

Heidenham[28] describes his method of sutures and ligatures in an interesting article, and states that he has become convinced that silk is far better and surer to use for this purpose than catgut. In fact, since July, 1898, he has used silk only. He was induced to discard catgut on account of the difficulty he had of surely sterilizing it. He was occasionally troubled with late suppuration, twelve to fourteen days, after immediate union of the wound, which then reopened. Since discarding catgut he has had only one case of wound infection. He quotes the case published by Koch,[29] of tetanus infection from a piece of catgut. He considers that the delayed infection of the wound corresponds to the setting free of bacteria (confined in the catgut) by its disintegration. He uses very fine silk, No. 0, and prefers twisted to braided. It is prepared by steam sterilization on the morning before the operation, is brought to the operating-table in a 0.1-per-cent. sublimate solution, from which it is taken with sterile forceps as needed. The middle, only, of the piece, which is tied about the vessel, is left in the wound, since this does not touch the hands of the operator or assistant.

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of the Section in Orthopedic Surgery, February 17, 1899.

HYPERTROPHY OF THE TIBIA.

Dr. S. Ketch presented a girl four years of age whose right tibia was greatly lengthened and thickened, with decided anterior bowing. He had first seen the patient in December, 1898. The epiphyses were thickened, but the enlargement was not confined to them. It was most marked at the middle of the shaft but included the whole bone, as was seen by the x rays. Length: right leg, 19½; left leg, 18⅝; right tibia, 9¼; left tibia, 3¾. Circumference: right thigh, 9½; left thigh, 10¼; right calf, 8⅝; left calf, 7⅞. The disease had begun eighteen months ago with a small lump on the leg, and pain at night and when she walked. This was Dr. Ketch's second patient of the kind. The first one was a girl eleven years of age, who had been presented to the Section in November, 1897, had been operated on for the purpose of shortening and straightening the bone, and had again been before the Section in March, 1898, with resulting improvement and ability to walk about.[1] The bone had been found to be solid, the cavity being obliterated. Neither of the patients had received any benefit from antisyphilitic treatment. There was doubt as to the cause of this growth of the bone. It was not improbable that the trouble began in the periosteum. It was a question whether something ought not to be done early in the way of an operation to arrest the process, such as an incision through the periosteum, which might at least relieve the tension.

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[26] Annals of Surgery, May, 1898, p. 553.

[27] Revue de Chir., March 10, 1898; American Journal of Medical Sciences, March, 1899, p. 349.

[28] Centbl. f. Chir., 1899, Bd. xxvi, 225.

[29] Deutsche Zeitschr. f. Chir., Bd. xlviii, p. 417.

Dr. T. H. Myers said that this affection was extremely rare. He did not think that any drug could produce a material improvement, though it might prevent further progress of the disease. Such cases were sometimes assumed to be syphilitic for lack of better information, though no history or symptoms of that infection could be elicited.

Dr. V. P. Gibney suggested a linear incision through the periosteum, and, if that could be done with perfect safety, going farther, by denuding the bone from the anterior surface and shaving off the redundant portion, suturing the periosteum and letting it heal primarily. The growth in length could not be stopped except by attacking the epiphysis, which would be hazardous.

Dr. H. Gibney said that, in addition to the treatment which had been suggested, he would go farther, and complete the operation, straightening the leg by the removal of a wedge-shaped piece of the bone and maintaining the correct position by plaster-of-Paris dressings.

Dr. Myers thought that incision would only relieve the pain. He would not operate until the child had attained its growth or the disease had stopped.

Dr. G. R. Elliott said that it was of pathological interest that the tibia alone was affected while the fibula remained normal. There was but little deformity compared with the decided bowing which had been an indication for operation in Dr. Ketch's former patient, in whom the pathological findings were diffusely distributed throughout the entire thickness of the bone. He asked what effect tying the nutrient artery of the bone would have on the progressive atrophy.

Dr. Ketch said it would probably stop the growth of the bone.

Dr. Elliott suggested the possibility of resulting necrosis.

Dr. A. B. Judson said that if the whole limb were affected symmetry might possibly be promoted during the growing period by checking the vascular supply of the larger limb by bandaging or lacing the whole limb, and increasing the vascular supply of the smaller limb by venous compression. At the same time the functional activity of the one could be lessened, and that of the other increased, by the use of an ischiatic crutch or other apparatus having the same effect, with a high sole under the shorter limb. But as the diagnosis was absent and the pathology unsettled he could not suggest a reasonable treatment.

Dr. Ketch said that at an earlier stage some of the operative procedures suggested might have arrested or prevented the abnormal growth of the bone, but, on the other hand, they might have promoted it. He was opposed to the removal of a portion of the bone during the growing period. As the parents of the child desired active treatment, an incision might be recommended as likely to stop the pain, which he thought was due to tension.

ENLARGEMENT OF EPIPHYSES.

Dr. Myers presented a girl, sixteen months old, whom he had seen for the first time on January 10, 1899. The epiphyses of the radii, femora, tibiæ, and the entire phalanges of several fingers were enlarged. The joints of the ankles, knees, fingers, wrists and the right elbow were swollen and somewhat restricted in their motions. The enlargement at the ankle-joint was peculiar, several of the tarsal bones sharing in it. She walked with difficulty, with knees and hips flexed. Flexion of the knees and unwillingness to walk had been observed immediately after an attack of cholera morbus in October, 1898. The knees were kept a little flexed, and there was a very slight effusion in these joints. The child did not sleep well but otherwise seemed to be in good health. Potassium iodide, four to eight grains, had been given three times daily for a month without improvement. The teeth were not notched. There was no syphilitic history. It was not typical scurvy. The child had been for three months on a general diet, including eggs, meat, potatoes and fruit. It was certainly not a typical case of rickets. She had cut teeth early, and walked at ten months; the head was well formed and the abdomen not prominent. The diagnosis remained uncertain.

Dr. Ketch said that the obvious feature of the case was a very exaggerated change in nutrition — an overgrowth of some kind, the effect of some not so obvious diathetic cause. He had seen localized changes in scorbutus which were very similar.

Dr. V. P. Gibney said that the changes were similar to those seen in chronic rheumatoid arthritis which he had repeatedly seen in typical forms in children seven and eight years of age, and he did not see why it should not attack a child sixteen months old. This, however, would not explain the growth of the long bones and phalanges. His first thought was of scorbutus, but the condition would have disappeared with the child on the diet stated. Syphilis could be excluded. If pushed for an opinion he would say it was a case of multiple bone tuberculosis, a condition which could be less easily excluded than any of the others mentioned. The boggy feeling of the joints, the fact that there was effusion in the joints and the statement that flexion of the knees and an unwillingness to walk had followed an attack of cholera infantum, all supported the view that it was an instance of bone tuberculosis. He would raise the question whether synovitis was not one of the earliest signs of tuberculosis in a child. He advised putting the child in a wire cuirass and keeping the limbs extended. It was not good to allow the child to walk.

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[1] See Boston Medical and Surgical Journal, January 13, 1898, pp. 36, 37.

Dr. Ketch said that primary synovial tuberculosis was rare in children.

Dr. Judson had noticed the contraction of the knees and hips, but thought it was not the result of the reflex muscular action of joint disease, and that the fact that the contractions were nearly symmetrical pointed to a more general cause than the tuberculosis of the joints affected. He did not think that synovitis was an early incident of osteitis, and that primary synovitis could be differentiated by the absence of the usual signs of osteitis, which were muscular atrophy and reflex action and a prolonged history of inconstant lameness and pain. Synovitis should not be considered as liable to run into osteitis, although practically it was well to relieve a synovitic joint from weight bearing.

Dr. Ketch said that he had rarely seen synovitis as an early sign of tuberculosis.

Dr. V. P. Gibney said that the focus of diseased bone might suffer a traumatism and thus cause an extension of the process and give rise to this outward manifestation. He recalled a case seen twenty years ago. The child's knee was full of fluid. It was thought surely to be synovitis, and a glowing prognosis of recovery in a few weeks was made, but after six or seven years' treatment recovery took place, with a stiff knee. Primary osteitis with secondary synovial distention occurred before the gross signs of the osteitis, which called the attention of the practitioner to some trouble in the knee. At this stage the trouble could be cured.

Dr. Elliott said that fluid in a joint immediately after a traumatism pointed clearly to a synovitis directly due to traumatism. If tuberculosis followed it resulted from a further injury to the bone itself, which made a proper nidus for the tubercular growth; in other words, a dual injury, and the fluid in the joint was entirely distinct from the true tubercular lesion and in no way connected with it. The later tubercular development might delay the absorption of the primary synovial excess and thus the latter might come to complicate the tubercular joint.

Dr. Myers has seen effusion early in tubercular joint disease but did not consider it of diagnostic value. In spite of the fact that the patient had had apparently an antiscorbutic and antirhachitic diet, he could not help thinking that the trouble was due to one of these diseases rather than to tuberculosis. The child was not very sick. The principal changes were in the epiphyses and phalanges and seemed to him to be due to some form of nutritional disease. The congested epiphyses could fully account for the pain and tenderness, but he would adopt the suggestion made and protect the joints by keeping the child quiet.

CASES OF COXA VARA.

Dr. Myers also presented a boy eight years of age who had waddled, and was walking worse every year, since he began to walk. His muscles were strong. A certain rigidity of all the muscles of the lower extremities made examination somewhat difficult. The motions of the hip-joints, especially flexion and abduction, were somewhat limited. There was no dislocation, but the neck of the femur was seen in the skiagram to be bent down as in coxa vara. The diet had been very good. The boy was a little bow-legged and flat-footed.

Dr. H. Gibney found no shortening and trochanters but slightly above the line. He thought the waddling might be due to flat feet.

Dr. V. P. Gibney said that the radiograph showed forward rotation and a little bending backwards of the femoral neck at its junction with the shaft.

The opinion was expressed by several speakers that the boy had coxa vara in a mild and not strictly typical form.

Dr. Elliot thought that the condition dated from early rhachitis in all probability. The picture was a logical one and the femoral neck had changed simultaneously with the bowing of the legs, both having been more or less plastic.

Dr. Ketch said that the traces of rhachitis were obvious. Coxa vara was sometimes made to include cases that were not dependent on bending of the bone. Some cases were due to deviations caused by abnormal epiphyseal growth resulting in a change in the angle of the neck of the femur. On the other hand, the peculiar gait of coxa vara was not infrequently attributed to knock-knees or bow-legs.

Dr. Judson said that coxa vara might be considered to mean an abnormal, or various, relation of the neck of the shaft caused by lesions of different kinds, all of which were not yet recognized.

Dr. V. P. Gibney said that in coxa vara we had found one new disease or condition to rule out in our study of hip disease. Many cases of "hip disease" in adolescents which recover and have relapses, but never get very bad, having from one-half to three-fourths inches' shortening, were really cases of coxa vara.

Dr. Ketch presented a boy, aged eleven years, who had had a limp (left leg) in winter but not in summer, for three years. Pain and inability to walk on rising disappeared entirely in the afternoon. There had been no history of rickets or rheumatism. Abduction was limited, especially in flexion. Outward rotation abnormally free, trochanter one-half inch above the line, no atrophy. Right 28, left 27⅝. The skiagraph showed a change in the angle of the neck.

TREATMENT OF COXA VARA.

Dr. Judson suggested mechanical means for permitting locomotion while the affected part is relieved from the weight of the body as long as the bone was in a growing or plastic state.

Dr. V. P. Gibney said that when the affection was single good results could be obtained from the use of the hip-splint. He saw no objection to the wearing of a jointed splint for some months, affording not absolute but modified protection, enough to shut out traumatism.

Dr. H. Gibney said that the ischiatic crutch for this purpose was easily adjusted and comfortably worn and allowed the limb to hang free.

Dr. Myers said that when both femora were affected mechanical protection was attended with difficulties and it was not easy to keep the adolescent patient, like the one he had presented, quiet.

Dr. Judson suggested the use of a bicycle.

Dr. Ketch in such a case would improve the general nutrition and prepare the parents for a long wait.

PAIN RELIEVED BY TRACTION.

Dr. Myers related the history of a patient, twenty-six years of age, who had suffered five and one-half years from rheumatism in the ankles, neck, shoulders, elbows and wrists, and the right hip. For the first year improvement had followed massage and medical treatment. For the past four and one-half years the right hip had gradually become stiff and painful in walking. When first seen by Dr. Myers, in February, 1898, there was some spasm but no shortening. Motion of hip: flexion, 16 degrees; abduction, 10 degrees; external rotation, 10 degrees. A short traction hip-splint was at once applied and is still worn. There had been no pain since June, 1898, and the man considered himself greatly improved.

Dr. Ketch recalled the case of a man in whom the terrific pain of a sarcoma of the femur had not been relieved by powerful narcotics but had been relieved for a time by traction made with a long hip-splint and afterwards, as more convenient, with a short splint.

FRACTURE OF NECK OF FEMUR IN AN INFANT.

Dr. Myers showed a specimen of fracture of the neck of the femur in a child eight months old. A large amount of callus was present within and without the periosteum. There was a lateral displacement of the lower fragment inward one-third the diameter of the bone. There was no change in the length of the bone. No history could be obtained except that the injury must have occurred before the fifth month.

A NEW PELVIC REST.

Dr. Myers also showed a pelvic rest, especially well suited for the application of spica bandages, which included the trunk and thighs, as it could remain in place until the spica was fully applied and could then be easily withdrawn. It was made of a piece of sheet steel, $\frac{1}{4}$ x $1\frac{1}{2}$ x 14 inches, bent upon itself so as to form three sides of a square. The ends were hammered out so as to form oblong planes about three inches broad and five inches long. When in use one of the planes rested upon the table, and the other supported the sacrum, while the upright connecting them was directed towards the feet.

Recent Literature.

Diseases of the Skin. An Outline of the Principles and Practice of Dermatology. By Malcolm Morris, F.R.C.S., Surgeon to the Skin Department, St. Mary's Hospital, London. New (2d) edition. Revised and enlarged. In one 12mo volume of 601 pages, with 10 colored plates and 26 engravings. Philadelphia and New York: Lea Brothers & Co.

In this second edition Mr. Morris has succeeded in compressing a great deal of matter into a comparatively small space. It is refreshing to find a text-book on dermatology (of which we have altogether more than we need) written in an original and spontaneous manner, and not suggesting, as so many text-books do, a close following of those that have preceded, with only an occasional original observation. The arrangement of subjects is not a convenient one, and few will be able to agree with the author that so many affections should be classified under neurotic affections of the skin. The merits of the book lie in its compactness and originality.

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THE BRITISH PARLIAMENTARY REPORT UPON WATER-GAS.

The controversy in regard to the question of permitting the manufacture and distribution of water-gas in Massachusetts culminated with the repeal of the carbonic oxide limit in 1890, and since that date, as might be expected and as was confidently predicted, the deaths from gas-poisoning have enormously increased.

As often happens, when great financial interests are at stake, the important question of human life and health is winked out of sight. And now, ten years later, the same question is before the British Parliament. In February, 1898, a committee, consisting of Lord Belper, H. H. S. Cunynghame, Esq., Drs. J. S. Haldane and H. F. Parsons, and Prof. Wm. Ramsay, were appointed to inquire and report upon:

(1) The extent to which water-gases and other gases containing a large proportion of carbonic oxide are manufactured and used for heating, lighting and other purposes.

(2) The danger attending such manufacture and use.

(3) The means by which such dangers may be removed or diminished, either by the discontinuance of the use of such gas or gases or otherwise, and what regulations for the prevention of danger should be established.

The committee held twelve sessions and examined twenty-four witnesses, seven of whom were physicians. A considerable number were persons who were already interested in the manufacture and distribution of water-gas as an illuminating agent.

The report is followed by seven appendices containing valuable information and some new contributions to knowledge upon the subject. Dr. Haldane's Appendix presents some tables, giving the annual deaths which would have occurred in London from gas-poisoning, based upon the experience of American cities with water-gas, in which he says, "Roughly speaking, the loss of life arising in one way or another — accident, suicide or homicide — appears to be fully a hundred times greater with water-gas in America than with coal-gas in this country."

Table 5 gives a series of careful observations as to the percentages of carbonic oxide present in rooms where gas was allowed to escape from open burners, unburned.

Table 6 illustrates the rate of change in the air of rooms, with suggestions as to methods of regulating the maximum escape of gas.

Dr. Parsons's Appendix is devoted mainly to the information derived from official United States sources, and chiefly to such as could be obtained in the report of the State Board of Health of Massachusetts for 1884, and to the more recent reports of the Gas Commission of Massachusetts, which contain the most accurate information to be found in America.

In Appendix 6 appears a considerable amount of American correspondence, among which are several letters from the same officials who came from New York to Boston in 1884 to testify before the Massachusetts Legislative Committee as the paid experts of water-gas manufacturers. It is not surprising to find that they still testify to its comparatively harmless nature.

In Appendix 7 Prof. J. L. Smith details a series of thirteen experiments, which differed from the Massachusetts experiments of 1884, in which the object was to determine by experiments on animals the comparative danger to life of coal and water gas. Prof. Smith's experiments were made upon smaller animals (mice and guinea-pigs), and had for their object to determine whether any other ingredient of illuminating-gas besides carbonic oxide is poisonous. The experiments showed that the carbonic oxide is the poisonous element, and that marsh-gas, ethylene and benzine in the percentages normally present have no visible effect.

The recommendations of the commission are briefly as follows:

(1) That it be made illegal to make and distribute, for heating and lighting, any poisonous gas which does not have a distinct and pungent smell.

(2) That all persons applying for authority to make and distribute gas should state in their application the kind of gas which they propose to sell.

(3) That before any kind of water-gas is to be distributed in any place due public notice must be given, and as long as there is any water-gas in a gas-supply the fact must be stated in every demand note.

(4) Records to be kept, by producers, of amounts of gas issued to each area, and as to the day and night supply; these to be open to inspection, and a column added stating the kinds of gas issued.

(5) Power to be conferred upon a Central Department to limit the proportion of carbonic oxide in the public gas-supply at night to twelve per cent., or more, as the Department may deem desirable.

(6) Power to be given to make by-laws relating to distribution of gas; having special reference to the carbonic oxide limit, to the character of burners, gas-fixtures, etc.

(7) Gas to be tested by a responsible officer and results to be published. The commission also recommend that more specific details be required of coroners in cases of death from gas-poisoning.

It remains to be seen whether the English Parliament will adopt the excellent suggestions of the committee. Should the Standard Oil Company succeed in getting its grip upon British legislators as successfully as it has done upon American communities, in its desire to find an outlet for its naphtha, we may look for a general disregard of the recommendations of the committee.

It is not to the credit of Massachusetts that the same methods, which in Delaware fortunately proved unsuccessful in a recent senatorial contest, were in an earlier controversy and under the same leader successful in Massachusetts, in securing the repeal of a wise and just law, which, had it been retained as an existing statute, would have saved more than three hundred lives.

The ten per cent. carbonic oxide provision was repealed April 30, 1890, and since that time the deaths from gas-poisoning in Boston alone, a city supplied with water gas, have been 255, while in the cities of Cambridge and Chelsea, supplied with coal-gas, there have been no deaths from gas-poisoning in the same period.

THE NUTRITIVE VALUE OF PETROLEUM EMULSIONS.

The not infrequent employment of emulsions of petroleum as a substitute for cod-liver oil in the case of tuberculous patients who find the latter difficult to take has led Hutchinson[1] to undertake an investigation of their nutritive value.

Since petroleum belongs to the paraffin series, a class of oils which are characterized by great resistance to chemical change, it would seem only natural to expect that they would not be readily assimilated by the body.

Hutchinson employed a well-known and widely advertised emulsion of an exceedingly pure petroleum, and administered 30 cubic centimetres, the equivalent of the usual daily dose of the emulsion in question, to a healthy man, who was kept on a constant diet containing a moderate amount of fat. The feces were collected, dried and the fat extracted by ether. It was found that the daily administration of the 30 cubic centimetres of petroleum emulsion increased the ether extract of three days' feces by 25.6 grammes. On separating the petroleum from the other fats in the ether extract it was found that almost exactly the same amount of petroleum was found in the stools which had been ingested in the emulsion. From this and similar experiments the author rightly concludes that petroleum is not absorbed in the human intestine, and can, therefore, not be regarded as a food or a substitute for cod-liver oil.

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[1] British Medical Journal, March 25, 1899.

It is difficult to conceive how the petroleum can have any remote action upon the lungs, or how, if it is not absorbed from the intestine, it can be of any value in the treatment of pulmonary tuberculosis. Whether it might have any value as a local application in intestinal diseases is undecided.

MEDICAL NOTES.

Sick and Wounded at Manila. — Latest reports from General Otis give the ineffective strength, from wounds and sickness, as only a fraction over seven per cent. of the command.

Small-pox in Eastern Virginia. — This disease having got beyond the control of the State authorities, the State Board of Health has asked the governor to request the Secretary of the Treasury to detail an officer of the Marine-Hospital Service to visit the infected district and assist in the efforts being made to control the disease.

Investigation of Typhoid Fever. — Major Walter Reed, surgeon U. S. Army, president of the board which investigated the outbreak of typhoid fever in the military camps last summer, has been sent to Porto Principe to investigate a severe outbreak of typhoid fever which has occurred in the 8th U. S. Cavalry, stationed in that province. The 8th Cavalry is the only regiment in which typhoid prevails to any extent, no reports of the occurrence of this disease in the 15th Infantry, also stationed in Porto Principe, having been received.

Officers of the Congress of American Physicians and Surgeons. — At a recent meeting of the Executive Committee of the Congress of Physicians and Surgeons the following officers were elected: President of Congress, Dr. H. P. Bowditch, Boston, Mass.; Secretary of Congress, Dr. W. H. Carmalt, New Haven, Conn.; Treasurer of Congress, Dr. Newton M. Shaffer, New York City; Chairman of Executive Committee, Dr. Landon Carter Gray, New York City; Secretary of Executive Committee, Dr. W. K. Simpson, New York City. The next Congress will meet at Washington, D. C., in May, 1900.

Ptomaine Poisoning in San Juan. — A second attack of ptomaine poisoning occurred at the General Hospital, San Juan, Porto Rico, on March 18th. Like the previous outbreak, the symptoms were severe colic, vomiting, diarrhea, marked depression and dilatation of the pupils. Forty-eight persons were more or less affected. With one exception, in which case the symptoms could be otherwise accounted for, all of those affected had used milk and many of them milk only. The milk used was not sour but chemical examination showed the presence of a considerable amount of tyrotoxicon. Inspection of the dairy from whence it was obtained showed it to be clean and well kept, but the dairyman had been in the habit of putting the milk in cans at once after milking and sending it to the ice factory in San Juan for cooling. The time occupied in this transportation was one and one-half hours, and it is believed that the change occurred during this time. To avoid similar trouble in the future it has been recommended that all milk used in the hospital be sterilized.

Quarantine at Savannah, Georgia. — The City Council of Savannah has voted to turn the local quarantine establishment over to the Marine-Hospital Service, the Secretary of the Treasury having agreed to accept it. Measures to this end have been pending for some time. Passed Assistant Surgeon J. H. White has been placed temporarily in command, on the part of the Government, but the quarantine officer, recently on duty under the local management, and the former quarantine employés will be retained in the service. This is the fourteenth quarantine station conducted entirely by the Marine-Hospital Service.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the eight days ending at noon, April 26, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 45, scarlet fever 34, measles 135, typhoid fever 17, small-pox[1] 4.

Boston Society of Medical Sciences. — At a meeting of the Society held April 18, 1899, Dr. Benjamin Tenney read a paper on the "Treatment of Weak Feet and Measurement of the Longitudinal Arch." He showed wherein shoes are at fault, and laid stress upon the fact that shoes commonly are not made to fit the instep, and that the standing weight should be on the heel. He was of the opinion that a proper shoe, rather than a plate, was frequently the best treatment. Dr. Woods showed models of the intestine as used in the teaching of histology at the Harvard Medical School. Mr. Frederick P. Gorham spoke on "Some Physiological Effects of Reduced Pressure on Fish." He showed experimentally that a peculiar disease of fish in aquaria, characterized by gas production, is due to a reduction of pressure, and not to a specific gas-producing organism. Drs. Franz Pfaff and J. J. Putnam read papers on Rachford's "Paraxanthine Poisoning Theory," and demonstrated the inaccuracy of Rachford's conclusions. Dr. E. W. Taylor spoke briefly on "Miliary Aneurism of the Brain" and demonstrated the lesion in lantern-slides. Dr. E. G. Brackett showed a series of lantern-slides illustrative of the varieties of human gait, both of civilized and savage peoples.

Massachusetts Emergency and Hygiene Association. — At a recent meeting of this Association Dr. James J. Minot was re-elected president. A report on the work of training of attendants was read. The pupils do the actual work of nursing in the homes of the poor. The course is only three months, and the instruction extremely practical.

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[1] These cases are small-pox, not purported, cases.

Miscellany.

THE CARE OF THE WOUNDED AT MANILA.

The following report of Chief Surgeon Henry Lippincott, Department of the Pacific and Eighth Army Corps, under date of Manila, P. I., February 28, 1899, will be of interest to our readers, as showing the efficiency of the Medical Department of our Army at Manila:

"For many days we were in expectation of an attack on our lines, and this came about 9 P. M., on the 4th and lasted until the morning of the 7th. Although the firing was active in front of several parts of our lines, nearly all wounds were received after midnight of the 4th and later in the month. A few of the mortally wounded arrived at the hospital before death took place. Those not mortally wounded gave every sign of hope of recovery on arrival. All were quickly brought in and dressing went on in order and with proper rapidity. They received instant attention on the field, for although the attack was sudden and perhaps not looked for on that night, everything had been done in advance to secure the most thorough first aid in the event of an engagement.

"The division surgeons and the medical officers of regiments were alert and everything necessary was in readiness for immediate use. The ambulance company was reassembled, ambulances thoroughly equipped and the men served with travel rations. A full supply of first-aid packages, litters, lanterns, water, beef extract, dressings, stimulants, etc., was at hand, and the ambulances re-enforced by carriages and *carromatas*. I am able to say that our department was in fine condition at the moment of the first fire and continued to improve from day to day, so that there never was a delay in securing excellent attention for the wounded. The hospitals, too, were in readiness, the First Reserve Hospital (Crosby's) being used for all the severe cases and many of the slight ones; a few minor cases, however, were sent to the Second Reserve Hospital (Keefer's), while a number of slight cases found their way to the regimental hospitals.

"The men of the Hospital Corps were properly equipped and every man understood the part he was expected to take days before the attack, and there was greatest enthusiasm among the men in performing the duty assigned to them.

"The wounded are doing well at this date. They have every reasonable comfort, and the prospect for their ultimate recovery is very encouraging.

"Our supplies have been so liberally granted us that not a wish has been expressed that I have not been able to meet, and for all this we are grateful to the surgeon-general.

"It is a matter of congratulation that first-aid instruction had been given for some time, systematic teaching having been instituted in the regiments, so that the Corps men were quite skilful in their first-aid work. The distance the men had to be taken before arrival at the First Reserve Hospital was from two to six miles, and this distance was covered quickly, though with every due consideration for the wounded.

"The Government ambulances worked well, but we should have more of them; only eight were available. However, with the other carriages we managed very well. Some of the wounded were taken in box cars from Caloocan, properly furnished with cots, blankets, pillows, etc., and on arrival at the depot in Manila they were carried in ambulances to the hospitals. Many of the slighter cases have returned to duty and others will soon do so. Thus far there have been no primary amputations, excepting a few of fingers."

Correspondence.

[Special Correspondence.]

CONDITIONS AT HAVANA AND YELLOW FEVER.

Port Antonio, Jamaica, April 3, 1899.

To the Editor: — It is very evident that the problem at present confronting the United States in Cuba is sanitary rather than military. The so-called Cuban army, in all perhaps ten thousand men, has, for some months, been disintegrating rapidly wherever opportunity for employment has presented itself, despite the strenuous efforts of the military politicians who have so long controlled its actions. Just now this disintegrating process is unfortunately delayed by the anticipated action of the United States in paying off the insurgent forces, and the ignorant Cuban mind is fully impressed with the advisability of holding out as long, and for as much, as possible.

In the three months of the American occupation of Havana much has been accomplished, but much still remains to be done. The city is superficially clean, and the improvement since my visit to the city early in January last is most marked. The streets are, without exaggeration, in better condition as regards cleanliness than are those of the poor quarters of any of our great cities. The pollution of the streets with refuse has been prohibited, an efficient garbage collecting service has been established, and all refuse is daily taken well out to sea in barges and thrown overboard. The public buildings, as well as many private ones, have been cleansed, disinfected and put into excellent condition. Judicious action and assistance by the Government has largely neutralized the effects of the reconcentration policy — in Havana almost entirely so. The reconcentrados have almost entirely disappeared from that city. Most of them are dead — the remainder are now nearly all self-supporting. Business is now active and crippled industries are reviving. The future of Cuba, under the control of a stable government, is startling in its possibilities of prosperity.

To the sanitarian, however, the most important matters are not those which impress the tourist so favorably. The city has no general sewer system and only a few drains, chiefly private, for the removal of house and storm waste. I am told that the existing drains are all box shaped, leaky and of poor construction and grade — being rather provocative of disease than otherwise. Their contents are delivered along the water front of the quiet harbor, in the heart of the shipping districts, and, putrefying in the tropical heat, fill the air with pestilential odors.

Another question now troubling the engineers is that many of the streets, constructed without regard to grade, do not drain themselves, and hence will require special arrangements for the disposition of the sewerage. No satisfactory sanitary work can be instituted until such time as a proper general sewerage system shall have been constructed — a matter of several years' time, and the expenditure of many millions of dollars. In putting in such sewerage system the disturbance of the ground, soaked for centuries with the indescribable organic filth of a Spanish town, will certainly be followed by a serious outbreak of disease. Proper disinfection of the sewer trenches and the earth removed from them scarcely seems possible.

In this connection it may be well to say that the engineer officers of Havana are strongly in favor of a proprietary disinfectant of but comparatively weak antiseptic powers and one to the use of which the medical officers are unanimously opposed. It seems unfortunate that the Medical Department cannot be supreme in matters for the failure of which, justly or unjustly, it will surely be held responsible by public sentiment. In view of the several cheap and reliable germicides which are always available, investigation as to the virtues of alleged antiseptics in Havana at the present time seems unjustifiable to say the least.

The water supply, too, while excellent in quality, is deficient in quantity. Spanish corruption pervaded everything, and the contractor who put in the system, after paying $50,000 to the Spanish inspectors, was enabled to put in work and material much inferior to that called for under his contract. As a result, he saved considerable money, the pipes will not support more than half the required pressure, and the work must be entirely done over in the near future.

Without sewers and water carriage the proper disposal of the dejecta in a crowded tropical city like Havana is a most serious problem, until the solution of which the city cannot fail to remain a stronghold of yellow fever. Under each house is a large cesspool, usually not cemented, in which the accumulated fecal matter of many years is carefully preserved. The greater the rapidity with which the porous ground absorbs the fluid constituents of the dejecta the more highly prized the cesspool, for the housholder never thinks of cleansing such a receptacle until it is completely filled with filth and such action is necessary to render it fit for further use. In the cleansing of these cesspools little appears to have been done. I am told that only recently have odorless excavators been supplied by the Quartermaster's Department and that all such work was done by hand — a tedious, dangerous and offensive process. In these foul cesspits we have a constant source of danger which no amount of superficial cleanliness of streets or whitewashing of houses can ever remove. In direct opposition to Anglo-Saxon ideas the sinks in Spanish houses are located in, or in close proximity to, the kitchens. Even at the best hotel in Havana, the "Inglaterra," the one most patronized by Americans, the public closets and urinals are situated in a dark, dirty, and absolutely unventilated alcove of the main kitchen, the only entrance for the visitor or fresh air being through the latter room. It is certainly not a pleasant way of "making extremes meet," and is probably largely responsible for the dissemination of disease, especially among those who have not become adapted to such environment. Such pestilential conditions must be promptly done away with if yellow fever is to be stamped out, and the prospect that a recrudescence of this disease will not occur during the coming summer is not bright. I am told that the volunteer medical officer on General Ludlow's staff is an energetic and indefatigable worker, but is without adequate experience in practical sanitation. There appears to be some criticism of his methods among those best qualified to judge of such matters.

The condition of Havana harbor is lately much improved, as its pollution has been to a large degree stopped. Having frequent occasion both during day and night to make trips to and from the shore in the ship's launch, I never detected any bad odors except in the vicinity of the sewers, and often saw fish even farther up the bay, between Regla and the wreck of the *Maine*. As compared with New York harbor, the water of Havana harbor appeared much cleaner, clearer and purer. Still, yellow fever is a land, not a water, disease, and in its direct bearing on this affection the condition of the harbor is of but trifling importance, if any.

All in all, the condition of Havana is outwardly better as regards cleanliness than most of our great cities, and this condition is steadily being improved. That yellow fever will, as usual, prevail during the summer I have no doubt. The stamping out of this disease from the city is a tremendous task, and one which requires years, not days, for its accomplishment.

X.

OZONE IN ILLUMINATING-GAS ASPHYXIA.

250 Marlborough St., Boston, April 19, 1899.

Mr. Editor: — Twice I have suffered serious inconvenience from ozone. The first time the attack of coughing was so severe it was almost impossible to breathe. Remembering how heavy ozone must be, I stretched out on a plank in my laboratory head down, hoping to aid the escape of the gas. The second time, remembering that ozone had powerful oxidizing properties and that the carbonic oxide in illuminating-gas craved oxygen, I sucked the gas as it escaped from a burner, and felt better. It then occurred to me to turn the method about and use ozone in the treatment of asphyxia from illuminating-gas. It would be a simple matter for some one with a hospital service to use the method. All that would be necessary would be a hand static machine, which could be easily found now they are so much used for the x-rays. If a small glass tube were made to enclose the spark gap and connected by a flexible tube and face plate to the patient the gas would be furnished as rapidly as it would be safe to use it. There are, of course, much better methods of producing the gas, and I mention this only because it would require so little new apparatus.

W. Rollins.

RECORD OF MORTALITY

For the Week ending Saturday, April 15, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Typhoid fever.	Diphtheria and croup	Cerebro spinal men.
New York . .	3,438,899	—	—	—	—	—	—	—
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	520	153	16.72	11.75	7.22	3.61	2.66
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	215	64	5.98	23.92	.46	2.76	.46
Baltimore . .	506,389	223	63	4.95	13.50	.90	1.35	.90
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	132	51	15.20	10.64	8.36	—	—
Washington .	277,000	113	34	13.20	13.20	3.84	10.24	1.28
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	78	14	6.40	14.08	—	—	3.84
Nashville . .	87,754	46	13	10.85	19.53	—	—	8.68
Charleston . .	65,165	33	7	—	18.18	—	—	—
Worcester . .	108,240	31	6	9.69	16.15	3.23	—	—
Fall River . .	95,919	41	17	4.86	14.58	—	—	—
Cambridge . .	89,724	22	6	4.15	24 90	—	—	—
Lowell . . .	88,641	28	12	17.85	10.71	3.57	7.14	3.57
Lynn	66,703	24	4	—	4.16	—	—	—
New Bedford .	66,340	34	10	5.88	17.64	2.94	—	—
Somerville . .	61,101	14	4	21.42	14 28	—	7.14	14.28
Lawrence . .	57,263	35	17	10.40	17.10	—	2.85	—
Springfield . .	56,501	15	5	20.00	13.33	—	13.33	—
Holyoke. . .	43,424	12	3	8.33	16.66	8.33	—	—
Brockton . .	37,278	15	5	6.66	26.66	—	—	6.66
Salem. . . .	36,883	14	3	7.14	7.14	7.14	—	—
Malden . . .	34,613	9	2	11.11	11.11	—	—	—
Chelsea . . .	33,468	10	3	—	—	—	—	—
Haverhill . .	32,022	2	2	50.00	50.00	—	—	—
Gloucester . .	30,589	3	—	—	—	—	—	—
Newton . . .	29,716	7	5	—	57.12	—	—	—
Fitchburg . .	29,438	8	—	37.50	37.50	—	—	12.50
Taunton. . .	28,167	13	3	7.69	15.38	—	—	—
Everett . . .	25,338	8	3	25.00	—	—	—	25.00
Quincy . . .	23,549	12	2	—	—	—	—	—
Pittsfield . .	22,643	8	—	—	—	—	—	—
Waltham . .	21,812	6	2	16.66	33.33	—	—	—
North Adams .	20,971	6	1	—	16.66	—	—	—
Chicopee . .	17,842	8	2	12.50	25.00	12.50	—	—
Medford. . .	16,511	8	5	—	12.50	—	—	—
Newburyport .	14,915	8	—	12.50	37.50	12.50	—	—
Melrose . . .	14,032	1	—	—	—	—	—	—

Deaths reported 1,785; under five years of age 525; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 196, acute lung diseases 275, consumption 168, typhoid fever 62, diphtheria and croup 45, cerebro-spinal meningitis 35, diarrheal diseases 18, whooping-cough 13, measles 9, scarlet fever 8, erysipelas 6.

From diarrheal diseases Philadelphia 5, Pittsburg 4, Baltimore, Washington and Fall River 1 each. From whooping-cough Philadelphia 5, Pittsburg 3, Boston 2, Providence, Cambridge and Lawrence 1 each. From measles Fitchburg 2, Boston, Pittsburg, Nashville, Worcester, Lowell, Somerville and Malden 1 each. From scarlet fever Philadelphia 4, Boston, Pittsburg, Nashville, Worcester, Lowell, Lawrence and Malden 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending April 8th, the death-rate was 21.7. Deaths reported 4,755; acute diseases of the respiratory organs (London) 470, whooping-cough 125, measles 85, diphtheria 75, fever 39, diarrhea 33, scarlet fever 22.

The death-rates ranged from 11.8 in Cardiff to 39.9 in Wolverhampton; Birmingham 23.7, Bradford 20.5, Gateshead 16.6, Huddersfield 21.7, Hull 22.9, Leeds 22.3, Liverpool 25.7, London 20.8, Manchester 25.9, Newcastle-on-Tyne 22.1, Nottingham 20.3, Sheffield 21.1, Swansea 19.1, West Ham 16.3.

METEOROLOGICAL RECORD

For the week ending April 15th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....9	29.74	43	50	36	67	58	62	S.W.	W.	10	20	C.	C.	
M..10	30.07	42	51	34	68	39	51	W.	N.	9	11	C.	C.	
T...11	30.28	38	43	34	50	56	53	W.	S.E.	10	5	C.	C.	
W..12	29.98	42	49	35	38	86	62	S.W.	S.	7	6	O.	O.	.08
T...13	29.88	50	56	43	66	54	60	N.W.	W.	17	12	O.	C.	
F...14	29.88	52	61	43	72	49	60	S.E.	S.W.	4	12	O.	R.	
S...15	29.92	57	66	48	35	29	32	N.W.	N.W.	10	10	C.	C.	.01
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 22, 1899.

M. H. **Crawford**, surgeon, ordered to duty at the naval recruiting rendezvous, Chicago, Ill.

J. S. **Taylor**, assistant surgeon, detached from the recruiting rendezvous, Chicago, Ill., and ordered to the "Independence" temporarily.

C. H. **DeLancy**, assistant surgeon, detached from the "Amphitrite" and ordered to temporary duty at the marine recruiting rendezvous, Savannah, Ga.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING APRIL 20, 1899.

White, J. H., surgeon. To proceed to Savannah, Ga., for special temporary duty. April 15, 1899.

Carrington, P. M., surgeon. Upon completion of inspection duties to proceed to the Brunswick (Ga.) Quarantine Station while *en route* to rejoin station at Washington, D. C., for special temporary duty. April 7, 1899.

Cobb, J. O., passed assistant surgeon. To proceed to Fort Stanton, N. M., for the purpose of establishing a marine hospital at that place. April 19, 1899.

Wertenbaker, C. P., passed assistant surgeon. To proceed to Newport News, Norfolk and Portsmouth, Va., for special temporary duty. April 8, 1899.

Nydegger, J. A., passed assistant surgeon. To inspect unserviceable property at Wilmington, N. C. April 8, 1899.

Wikes, H. W., assistant surgeon. Granted leave of absence for seven days. April 8, 1899.

Cumming, H. S., assistant surgeon. To proceed to Norfolk, Va., for special temporary duty. April 8, 1899.

Mathewson, H. S., assistant surgeon. To inspect unserviceable property at the San Francisco Quarantine Station. April 15, 1899.

Von Ezdorf, R. H., assistant surgeon. To proceed to Savannah, Ga., for special temporary duty. April 7, 1899.

McConnell, A. P., acting assistant surgeon. Granted leave of absence for four days from April 17, 1899. April 17, 1899.

Marsh, W. H., acting assistant surgeon. Granted leave of absence for five years from April 25, 1899. April 18, 1899.

Todt, W. C., acting assistant surgeon. Granted leave of absence for five days. April 17, 1899.

Dudley, D. E., sanitary inspector. To proceed to the Tortugas Quarantine Station for special temporary duty. April 7, 1899.

La Grange, J. V., hospital steward. To proceed to Fort Stanton, N. M., and report to Passed Assistant Surgeon J. O. **Cobb**, for duty and assignment to quarters. April 19, 1899.

BOARD CONVENED.

Board convened to meet at Philadelphia, Pa., at 10 o'clock a. m., April 18, 1899, for the physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Surgeon H. W. **Austin**, Chairman; Assistant Surgeon M. J. **White**, Recorder.

APPOINTMENTS.

E. D. **Hill**, of Massachusetts, appointed acting assistant surgeon, U. S. Marine-Hospital Service, for the physical examination of keepers and surfmen in the Life-Saving Service at Plymouth, Mass., and vicinity. April 15, 1899.

D. C. **Howell**, of Michigan, appointed acting assistant surgeon, U. S. Marine-Hospital Service, for the physical examination of keepers and surfmen in the Life-Saving Service at East Tawas, Mich., and vicinity. April 15, 1899.

SOCIETY NOTICES.

Suffolk District Medical Society. — The Censors of the Suffolk District Medical Society, officiating for the Society at large, will meet to examine candidates for admission to the Massachusetts Medical Society, at 19 Boylston Place, on Thursday, May 11, 1899, at 2 p. m.

Candidates should make personal application to Dr. H. A. Lothrop, 10 Marlborough Street, and present their medical diploma or its equivalent, at least three days before examination.

John Dane, M.D., *Secretary*, 29 Marlborough Street.

Suffolk District Medical Society, Surgical Section.— The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, May 3, 1899, at 8.15 o'clock.

"A Contribution to the Surgery of the Bile-passages," by Dr. Wm. S. Halsted, of Baltimore.

The presentation of specimens, instruments, etc., of surgical interest is invited.

Paul Thorndike, M.D., *Secretary*, 244 Marlborough St.

IN MEMORIAM.

E. P. Hurd, M.D.

At a meeting of the Board of Trustees of the College of Physicians and Surgeons of Boston held March 29, 1899, the death of Dr. E. P. Hurd, of Newburyport, being announced, the following was adopted as an expression of feeling by those present:

That in the death of E. P. Hurd, M.D., of Newburyport, the medical profession of Massachusetts has lost one of its most scholarly and devoted members.

That the College we represent suffers a double loss, in its Professor of Pathology and its Registrar, and we feel it has been deprived of one who has ever shown an unselfish interest in its welfare, doing all that he could to elevate its standard and broaden its influence.

That as Professor of Pathology, from 1893 to the time of his death, in this school, he has been an inspiration to the students and an example to his fellow teachers.

That as Registrar of the College his intercourse with all has been courteous and kindly.

That the Faculty is deprived at once of a wise counsellor and a sincere friend, whose place can never be easily filled.

Geo. M. Hobbs, *President.*
Julius L. Clarke, *Clerk.*

RECENT DEATHS.

William M. Kemp, M.D., a well-known New York practitioner, died after a brief illness on April 20th, at the age of fifty-three. He was graduated from Bellevue Hospital Medical College in 1870.

Arnold Vandain, M.D., died at his home in Tremont, Borough of the Bronx, New York, at the age of seventy. He was born in Dover, Del., and was a graduate of the Medical Department of the University of Pennsylvania in 1852.

Charles Mason, M.D., attending physician to the Peekskill Hospital and a former president of the Westchester County Medical Society, died in Peekskill, N. Y., on April 19th, from fracture of the skull, received in a fall in alighting from his carriage.

Original Articles.

THE ABUSE OF MEDICAL CHARITY: THE PASSING OF THE "CHARITY" HOSPITAL AND DISPENSARY.[1]

BY AGNES C. VIETOR, M.D., BOSTON.

Attending Surgeon and Gynecologist, Out-Patient Department, New England Hospital, Boston; late Instructor in Physical Diagnosis and Surgery, Woman's Medical College of the New York Infirmary, and Clinical Assistant in the New York Polyclinic Medical School and Hospital, and in the New York Post-Graduate Medical School and Hospital, etc.

A STUDY of medical charity impresses upon one two considerations that seem to be fundamental:

(1) That medical charity is only one division of the great subject of charitable relief, and that its problems must be solved along the lines evolved by workers in the main subject. The same laws are followed: as soon as general charitable relief was instituted it began to be abused; similarly, as soon as medical charity was instituted it also began to be abused. The abuse of general charitable relief always tends to outgrow and to destroy the resources of charitable relief unless constantly kept in check. The abuse of medical charity has the same tendency, and it now threatens to destroy all the sources of relief, which are, *first*, the medical profession, and, *second*, the hospitals and dispensaries. I place the medical profession first because a circle of medical charity radiates from every individual doctor, and it is only when the individual doctor has been overburdened that the community has required hospitals and dispensaries.

(2) The second prominent consideration forced on one's attention is that practically all students of the right administration of charitable relief — those who have had the most extensive practical training in the work — are unanimous in their condemnation of the existing system of medical charity. Not only do they condemn the system as being wrongful and evil in itself (as is all indiscriminate charity), but as being by its peculiar nature singularly fitted to begin a process of personal degradation.

I could quote from every writer on the subject, but will limit myself to a few, the remainder being but repetitions, but spoken with equal earnestness, as the outcome of the experience and conviction of the writer. I call special attention to the fact that these are all non-medical people. I begin with Lord Brougham,[2] who, in 1818, when serving on a parliamentary committee on The Abuse of Charities, expressed himself in words which cannot be improved upon to-day, and whose views must be accepted as a starting-point by every one who would attain a rational solution of the vexed question of charitable relief in all its forms. He said:

> I take it to be a principle which will admit of no contradiction, that the existence of any permanent fund for the support of the poor — the appropriation of any revenue, however raised, which must peremptorily be expended in maintaining such as have no other means of subsistence — has upon the whole a direct tendency to increase their numbers. It produces this effect . . . by discouraging industry, foresight, economy, and by encouraging improvident marriages. . . . But charitable funds will prove harmless (and may be beneficial) exactly in proportion as their application is limited to combinations of circumstances out of the ordinary course of calculation, and not likely to be taken into account by the laboring classes in the estimate which they form of their future means of gaining a livelihood.

Henry Fawcett[3] says:

> Thousands in whom it is most important to promote prudential habits are discouraged from making any self-sacrifice, when they observe that the parish does nothing for the industrious, whereas it creates a refuge and an asylum for those who have spent their resources improvidently or those who have wasted their substance in drink.

Mr. George E. McGonegal,[4] of New York, says:

> There is nothing except intemperance in the use of alcoholic liquors which is more demoralizing to the head of a family or more ruinous to children than to become imbued with the idea that the public is bound to provide for them. . . . If people could only realize when they recommend, bring or send a family composed in part of bright, intelligent children who have never yet received public aid . . . and insist upon aid being furnished, that such an act was almost sure to ruin these bright children, and educate them for pauperism or crime when they become men and women, it seems to me that such people would exhaust every other resource to provide a way for such families to overcome their immediate difficulties before incurring the fearful responsibility of being instrumental in making them paupers. People very soon after coming to receive public aid lose their energy and self-respect, finding it easier to rely upon the industry of others than to exert themselves; their children are almost certain to follow in the footsteps of their parents.

Mr. George S. Hale,[5] of Boston:

> It has grown to be an axiom of this [the charitable] branch of social science that no system of charitable relief should be encouraged which weakens the spirit of independence or tempts the recipient to rely upon others. In this respect, the influence of the prevailing system of medical relief is more dangerous and insidious than any other. Men who would not beg — who might not accept alms — may be led to accept this form of relief, and thus gradually be prepared for a condition from which at first they would have shrunk. The care and relief of the sick do not seem to require the same caution as the administration of other forms of charity; we give more readily, we investigate less carefully. . . . Gradually, a portion of the community tend, more or less consciously, to the feeling that they are entitled to expect such relief from it, and come to feel that it may be demanded as a right rather than solicited as a boon. Habits of thrift and caution, nay, even that care which keeps away disease and its expenses, are discouraged.

Mr. W. Chance,[6] of England:

> While outdoor medical relief is open to the same objections as outdoor relief generally, the main objection to it is that in so many cases it is the beginning of a career of pauperism. . . . "Why should I pay when the people next door get their medical relief for nothing?" The facility with which medical relief is obtained encourages among the poor the belief that medical aid differs in kind and eligibility from other relief. Guardians [of the poor] are too apt to regard it in the same light, and are apt to be lax in granting medical relief because it costs [them] nothing.

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[1] Read before the New England Hospital Medical Society, February 16, 1899.

[2] The Pamphleteer, 1818: A letter to Sir Samuel Romilly, M.P., from Henry Brougham, Esq., M.P., F.R.S., upon The Abuse of Charities.

[3] Henry Fawcett, M.P., and Millicent Garrett Fawcett: Essays and Lectures on Social and Political Subjects: Pauperism, Charity and the Poor Law, p. 80.

[4] George E. McGonegal, Superintendent of Poor of State of New York, 1882, in Public Relief and Private Charity, by Josephine Shaw Lowell, p. 55.

[5] George S. Hale: Medical Charities, p. 3.

[6] W. Chance, M.A.: The Better Administration of the Poor Law, p. 115.

I quote from the "Introduction to the English Exhibits in the Bureau of Charities and Correction" at the Columbian Exposition, 1893, p. 19:

> The newer Poor Law Infirmaries are large, well-equipped hospitals. Admission is obtained with comparative ease, and the indoor pauperism in London and in some other towns is in part to be accounted for by the numerous and constant admissions to them.

Bradfield Board of Guardians, 1893[7]:

> . . . a long experience has only strengthened their conviction that free medical relief, unless carefully guarded, is an open door to pauperism, and is, in the long run, not a boon but an injury to the poor. They are of the opinion, moreover, that it is *prima facie* the duty of heads of families to do their best to provide medicine as well as other necessities both for themselves and their children, and that anything which may encourage the expectation that such responsibility may be shifted on to the shoulders of the ratepayers will weaken the sense of this duty, and is calculated to hinder the growth of habits of thrift and forethought.

Sir Charles Trevelyan[8]:

> Of the various modes in which our people are educated to dependence and mendicancy, there is none more pernicious than the arrangement by which they are relieved from all necessity for forethought and thrift in providing for the care of their health.

Report on Metropolitan Medical Relief in London[9]:

> In hundreds of thousands this system of medical relief is the entrance gate to those habits of dependence . . . so that our London hospitals and dispensaries have been converted into schools of pauperism. Our people are educated by them to improvident and mendicant habits by being entirely relieved as regards this requirement of civilized life from all necessity for forethought and thrift. . . . All the arts of deception flourish in connection with misapplied charity. In 1870 a society organized for the improvement of the permanent condition of the poor soon came to the conclusion that one of the most powerful causes by which their condition had been depressed was this system of gratuitous, indiscriminate medical relief, and that every other arrangement for their benefit must fail in producing its full effect while this evil remained unremedied.

Medical Committee Charity Organization Society, London, 1871:

> Your committee believes there is no one class of charity which is doing so much to pauperize the population, to undermine their independence and self-respect and to discourage habits of providence, as the medical charities.[10]

The study of this tendency to take advantage of any and every opportunity to shift one's burdens to another is a curious one. Traces of it are seen in every class and phase of society. It is not the reaching out of the self-respecting man to help and be helped in turn; on the contrary, it is a species of *parasitism* leading to degeneration or reversion to a lower type. It is not surprising that this tendency to reversion should be so widely diffused in man, waiting merely a favorable environment for its development, when it is remembered that "of the animal kingdom as a whole more than half the species are parasites,"[11] and when it is also remembered that the tendency to reversion to a lower type is always imminent.

The most alarming evidences of degeneration resulting from this *parasitism* are seen first in the youngest, and hence most perishable, faculties of the human race — in the higher spheres of mentality — though, if the degeneration proceeds unchecked, the lower centres, and, later, what are called the more purely physical, and even the vegetative, spheres are affected. A fully-developed human parasite undoubtedly shows aberrations in all his functions. The chain is intact; beginning with a moral obliquity, hypocrisy and deceit follow, then a conscious or unconscious tendency to malinger and to shift to the doctor responsibility for health that should be assumed by the patient (and met by avoidance of sources of disease and of indulgence in temptations which undermine health or strength, by regular work and exercise, by cleanliness of person and home surroundings, etc.), next a shifting of responsibility to the hospital for sustenance during temporary depression of health. From this it is scarcely a step to shift to the community at large the responsibility for his sustenance when well. What he can demand for himself he demands for his wife and his children. They follow in his footsteps and recommence the vicious circle.

But the striking fact elicited by the study of this question is that the parasite fastens himself most readily upon the community through the medium of medical charity. To express it differently: *Parasitism* appears to be latent in us all; indiscriminate charity of any kind develops a rapid and luxuriant growth; the most favorable culture medium is medical charity — exposed to the stimulating effects of this, few of us would fail to respond and send out little clinging, grasping shoots. I tremble to think of the effects if landlords would compete with each other in offering free rent and skilled attendance to doctors.

Let me quote some figures showing with what luxuriance parasitism grows when fed freely with medical charity. I quote largely from Mr. Henry C. Burdett, of England,[12] who has devoted an immense amount of time and labor to the question of hospital administration, and whose writings are admitted to be standard:

In Birmingham, in 1876, there had been an increase in ten years of 56 per cent. in the number of applicants for medical charity, though the population of the town had increased only 13.8 per cent., and the prosperity of the town had not appreciably decreased. At the Queen's Hospital, investigation showed that 30 per cent. of the applicants to the out-patient department were unfit objects for charity. Again, 10 per cent. were able to pay the full, ordinary fee of a private doctor, as proved by the test question: "Are you able to pay a lump sum for a doctor's bill, say $20 or $25?" At the Birmingham and Midland Hospital for Sick Children . . . "the out-patient department is growing beyond the power of the staff to prescribe for, beyond the capacity of the waiting-hall to hold with safety, beyond the strength of the dispenser to deal with or of the porter to keep in order, finally, beyond the revenue of the charity." Finally, in 1876, about one-third of the entire population of the city was receiving free medical treatment.

In London, during a period of years, while the population had a little more than doubled, the number of out-patients at eight hospitals had increased more than fivefold. At the Royal Free Hospital, investigation showed 74 per cent. of the applicants to be unfit objects for charity. Finally, in 1879, one-fourth of the whole population of London was receiving free medical treatment. In 1877 one-half of the population of Liverpool was equally favored.

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[7] W. Chance, M.A.: The Better Administration of the Poor Law, p. 122.

[8] Sir Charles Trevelyan: On the Extension of Provident Dispensaries throughout London and its Environs, p. 3.

[9] Quoted in full in Medical Relief to the Poor; compiled by William R. Lawrence, M.D., p. 6.

[10] Loc. cit.

[11] Herbert Spencer: Principles of Biology, i., p. 342.

[12] Henry C. Burdett: Pay Hospitals and Paying Wards Throughout the World.

In America, parasitism is growing with equal or greater vigor. In 1886 about one-fourth of the population of Boston, in 1893 one-fifth of that of Philadelphia, and in 1897 about one-half of that of New York were estimated as receiving free medical treatment.

Side by side with this growth of parasitism, and proportional to it, has been the suffering of the medical profession and the hospitals, until now both are merely staggering along under the weight of this ever-enlarging Old Man of the Sea.

THE EFFECT OF PARASITISM ON THE MEDICAL PROFESSION.

The requirements for the medical profession have been steadily increasing; a more advanced preparatory education, a longer college year, a greater number of years, a greater variety of books and scientific apparatus, a longer or shorter course of clinical or technical study after graduation, are now demanded of even the average physician. This means a large increase in the expense of medical education and a restriction of candidates to the ranks of those who possess a certain financial surplus. When a graduate at last is ready to begin his lifework he finds practice difficult or impossible, according to the stage of development of medical parasitism in his neighborhood. There is plenty of work if he wishes to do it, but no financial return. Why should people pay him for that which they can get for nothing around the corner? The result is, he sits in his office alone, or, filled with a blind desire to work and develop his powers, regardless of the consequences to others, he gives of his strength to feed the parasites. Meantime his resources are disappearing. Long ago "Poor Richard" warned him that "Always taking out and never putting in soon comes to the bottom." When he comes to the bottom he drops out — often one knows not where. Sometimes, trying desperately to cling to some faint trace of his chosen profession, he acts as agent for a medical publishing house, a medical journal, a more or less reputable drug house; sometimes the less reputable beguile him with a mess of pottage into lending them the endorsement of his legitimate title of M.D.; sometimes he falls into quackery, selling the prescriptions of his old professors as secret remedies; sometimes he accepts the golden offering of the abortion seeker; sometimes, and more often of late, he chooses the radical remedy of suicide.

So it is coming to pass more and more that the survival of the fittest among physicians means the survival of the financially strong, and that more and more the ranks of the medical profession must be recruited from among those men and women who possess a living income outside of any expected professional returns, rather than essentially from among those who respond to its call as a vocation. This is not a necessity, nor is it best for either the profession or the community. Personal fitness should be the determining factor, especially in the choice of a medical career, and an honest worker should be able to make an honest living. There is plenty of work and there would be no difficulty if every one paid for his medical attendance in proportion as he pays for his rent, his food, his clothes and other necessaries of life.

THE EFFECT OF PARASITISM ON THE HOSPITALS.

The suffering of the hospitals and dispensaries — that is, of those who support them — is great, though less vital than that of the medical profession. What Sir Charles Trevelyan says of the English hospitals is equally true of those in this country:

> With two or three exceptions, the hospitals are all out at elbows. The whole system is breaking down by its own weight. They are spending more than they get and are constantly making appeals to be rescued from bankruptcy. How can it be otherwise? The burden to be borne is nothing short of the medical treatment of the entire community, with the exception of a narrow, upper margin.

What is the remedy? It is like asking, What is the remedy for headache? The quack or the novice will have a hundred suggestions to make off-hand, but the scientific physician knows that since the head is connected with every organ in the body, so every organ in the body must be consulted and studied before the head can be cured. So it is with the abuse of medical charity: the necessitous sick, the people afflicted with inherited or acquired parasitism, the self-respecting people, the medical profession, the charitable people, who build and support hospitals and dispensaries, the community as a whole, which grants public aid to hospitals and dispensaries — all these are vitally interested in the problem.

Before enumerating some of the remedies which have been suggested by experienced workers, the writer would suggest that no remedy can be effectual which does not recognize the ethical soundness of the following propositions:

(1) Medical advice is a marketable commodity, representing the investment of capital and the expenditure of labor as truly as does the output of the mine, the gathered produce of the field or the finished product of the factory.

(2) It is the duty of every member of the community to make provision for sickness, which is as inevitable as hunger or the inclemencies of the seasons or death.

(3) It is as harmful to the individual and to the community to offer free medical advice and treatment as it is to offer free fuel, free food or other necessaries of life.

Much reference has been made to English views on the subject of this paper, because in England the problem has been more acute for a longer time, has been longer under study and hence has a larger literature. The problem is essentially the same in both countries, though there are minor differences, owing to variations in institutional foundations and in class characteristics. All English authorities are agreed that some form of paying system, according to the means of the applicant, is the only method of relief for the evils about which there is no difference of opinion.

One remedy has been tried in both countries — the charging of a registration fee, varying usually from ten to twenty-five cents (to insure uniformity, I shall translate the English money into our currency). Mr. Sampson Gamgee voices the condemnation which all who follow it to its final workings must visit upon this remedy. He says:

> By such a regulation, the hospital is made a vast competitor against provident sick clubs [and against the individual doctor], and the self-respect of the working population is undermined by inducements to untruthfulness, with practical immunity from detection. Under such circumstances, the hospital becomes not only a training-school for pauperism [parasitism] but for duplicity.[13]

Another remedy tried in some parts of England is what is called *medical relief on loan* or *by case fee*, where guardians of the poor grant medical relief when it is truly needed, collecting the amount later, when the patient is able to pay. Thus, in the St. Neot's Union, the doctors are paid $1.50 for each case which they are ordered by the relieving officer to attend, and fifty cents a quarter for each permanent pauper.[14] After several years the system is reported working satisfactorily, and it has not been found open to any abuse. Its great advantage is that it shows that medical relief costs *something* and has the effect of curbing the foolish generosity of those who think it costs nothing.

The remedy most generally recommended at the present time is the transformation of all free dispensaries into what are called Provident Dispensaries. The scheme of a Provident Dispensary is a form of health insurance, similar to the plan of life or fire insurance. The members join when in health (or if ill, by paying extra), and by paying certain fees, based on their earning capacity, are entitled to call in any member of the dispensary staff when ill. No one is admitted who is able to pay a doctor's ordinary fee. Surgical operations and confinement cases are attended for a definite extra fee. After paying the whole or part of the running expenses of the dispensary, the fees received are divided among the doctors who have done the work. So-called "doctor's clubs" or "medical aid" societies are organized on similar lines in communities where no dispensary exists. For instance, there is a club in Kent, made up of working people whose earnings from every source do not exceed, if married, $7.50 a week, or, if single, $5.25 a week; domestic servants whose wages do not exceed $60 a year are included. Members join for one year and pay in semi-annual instalments the following fees: Members over fourteen years of age, $1.00 a year; a man and wife who have children, 75 cents each for themselves; a widow with children, 62½ cents for herself; members under fourteen years of age, 50 cents, except widow's children, who pay 25 cents each. Confinement fees are $3.75; minor surgery and tooth extraction, 25 cents; members find their own bottles, bandages and trusses and send for their medicines, which are supplied by the doctor. All office calls and calls for visits must be made or sent in before 10.30 A. M., except in case of sudden illness. Surgical operations are done for a definite extra fee. Habitual drunkards and persons affected with venereal diseases are not admitted to the club. The membership of this club, which includes a whole Union, is 3,000, hence the smallness of the fees. The pauperism of the Union is small, owing in large measure to the club. The effect of such clubs and Provident Dispensaries is said to be remarkable in a growing disinclination of the poor to apply for free medical aid. The advantage to the doctors is that although the fees are small they are certain of them, and they are relieved of the trouble of collecting them. The club just described had no expenses, so all the fees went to the doctors.[15]

This might be contrasted with the Provident Dispensary at the Royal Albert Hospital at Devonport,[16] a city of 50,000 inhabitants. In 1878 3,522 patients joined the dispensary; the fees amounted to $3,190; the expenses were $2,185; these were paid, and $1,005 was left to be divided among the three doctors who did the work. It must be remembered that the number of members does not mean the number of patients; the members pay whether they are ill or well, else the element of insurance would be absent. To give some idea of the practical workings from the doctor's point of view I quote one doctor's report of his work:

> Number of attendances, including visits, last year 1,245 and receipts $301.25, about twenty-five cents each; number of patients 256; longest attendance on one patient twenty-four calls; five were seen twenty or more times; five deaths, that is, two infants from malnutrition, one child from diphtheria, two old people; with these exceptions, there was only one case of really serious illness. Midwifery not included in above.[17]

All authorities are united in praising the Provident Dispensary system, *provided* — and this cannot be emphasized too strongly — *provided the wage limit is strictly maintained.* Where this fundamental precaution is omitted abuses creep in, parasitism develops, and the evils of the present system are reproduced and aggravated. Thus, we read of doctors receiving three cents a visit; of one doctor making 5,600 visits and receiving $75 for them, not quite two cents apiece.[18] Another necessary factor to the success of the Provident Dispensary is that it shall not have to compete with the free dispensary. The parasitic tendency is so strong in all classes that, as one writer says, "people will not put by even a penny a week to buy that which they can obtain for the asking." Still, even with this drawback, it is interesting to see that in the summary of hospital and dispensary accommodation in London, laid before the Committee on Hospitals, of the House of Lords, 1890–92, twenty-six free dispensaries were reported, with a deficit of $10,015; thirteen part-pay dispensaries, with a deficit of $3,570; thirty-five Provident Dispensaries, with a balance of $55.[19]

How much we in America can benefit by the English experiences summarized above and what modifications might be required in adapting the Provident system to our own institutions are questions not to be settled by one person or group of persons. What is required is consultation and co-operation among the several bodies of people concerned: (1) those members of the community who are in sympathy with the efforts of organized charity to improve permanently the condition of the poor and to suppress mendicancy, especially those interested in the medical division of this subject; (2) the wage-earners themselves; (3) the hospital and dispensary authorities; and (4) the medical profession. No unity of effort, however, is possible till the sources of friction between the two latter bodies are removed. The writer would suggest that much of this friction is due to the fact that the relation of hospitals and dispensaries to the whole community has undergone a complete change within recent years, that many details have not been adjusted in harmony with this change and that the friction existing is only a question of readjustment. The hospital is no longer a mere hospice or refuge for the sick traveller; it is not even merely a place of rescue and solace for the helpless sick poor, who would otherwise die by the wayside or suffer alone in a hovel. Theoretically, the hospitals are operated on these traditional lines, but practically their position has changed, almost insensibly but none the less completely. Modern medicine and surgery have been almost transformed and now require appliances that in their preparation, storage and use may be likened to the products of a laboratory. The doctors, who have made these changes and originated these appliances, have made the hospitals the centres for the practical application of modern scientific advances. Through such centralization of effort on the part of the medical profession, the hospitals have become, as it were, large laboratories where not only is scientific research put to the practical test but where modern medical and surgical appliances may be prepared, stored and used under the most favorable circumstances. The community has been educated by the doctors to appreciate these appliances, but, as a rule, can obtain them only by a complete or partial parasitism; complete as regards the doctor who must give his services for nothing; partial or complete as regards the hospital, for, infected with parasitism, the patient pays as little as he is permitted, and has no hesitancy about throwing the burden on the hospital.

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[13] Henry C. Burdett: Pay Hospitals and Paying Wards Throughout the World, p. 13.

[14] W. Chance, M.A.: The Better Administration of the Poor Law, p. 122.

[15] W. Chance, M.A.: The Better Administration of the Poor Law, p. 124.

[16] Henry C. Burdett: Pay Hospitals and Paying Wards throughout the World, p. 19.

[17] Charity Organization Review, London, n. s. 1, 1897, p. 73.

[18] Loc. cit., n. s. 2, 1897, p. 219.

[19] Hospitals, Dispensaries and Nursing. International Congress of Charities, Correction and Philanthrophy, Chicago, 1893, p. 30.

One point has been fully set forth in this paper, that is, the unjust competition of hospitals and dispensaries with physicians by encouraging parasitism in out-patients. As just stated, the same evil exists among in-patients. Among these latter the evil is still further aggravated by directly antagonizing individual physicians. For example, a physician is in charge of a patient outside. He knows the patient would be less liable to a severe type of the disease and would recover sooner if he could have the nursing care of a hospital. If he advises this it means that he loses the patient, which means (1) the experience which he would obtain from the case, (2) the professional reputation, and (3) the financial return. In addition, the patient is infected with parasitism, for he learns that entering a hospital is an easy way to avoid paying a doctor. The only exception to this is that, in a very few instances, members of a hospital staff are permitted to transfer their patients from private life to hospital care, but in most of such cases the prices charged by the hospital for board and nursing are so high as to be prohibitive to all but the very well-to-do. At the same time that the hospital thus competes unfairly with the individual physician it advertises itself to the community as the physician is not permitted to do, and makes every effort to entice patients from their regularly attending physicians; and having caught the patient, it then insists that its staff shall treat him for nothing! The hospital does this that it may hold its own with its commercial rivals in a mad race for the highest number of patients treated, so that it may justify itself in demanding a larger alms from public and private donors. The members of the staffs, in many cases, join the merry crowd, and the patients are only embarrassed by having to choose among such ardent suitors. The reduction to the absurdity was shown when a new superintendent of charities for the District of Columbia called at an out-patient department where he was unknown, and offers were twice made to prescribe for him before he could escape.[20] Alluding to this "pernicious habit of advertising the number of their applicants as a means of exciting the sympathies of the public," one writer forcibly says:

> It cannot be too strongly urged upon the attention of the public that the mere statement of the number of applicants to a hospital forms no proper index to the amount of good which it does; nay, rather it may tell in the opposite direction, for the highest good is to discriminate the cases, to weed out those that are unsuitable, and to give relief only to that comparatively small number who are really fit applicants, and to whom the advice and medicine thus given will be an unmixed boon. It is the ability of its staff, the skill of its nursing, the excellence of its general arrangements and the wisdom of its benevolence which ought to recommend a hospital to the support of the public, and not merely the numbers who have passed through its consulting-rooms in a week or a year.[21]

There does not seem to be any good reason why some form of the provident system should not be applicable to the in-patients of the hospital as well as the out-patients; and a proportionate amount of the fees should go to the physicians and surgeons who do the work. Further, no physician in good standing should be expected to give up his patient when the latter enters a hospital; if he is competent to care for the patient outside, he is equally competent at the hospital. Again, remembering the changed relation of the hospital to the community, some plan might be evolved by which it would not be necessary for the patient to leave home to receive the benefit of the modern appliances to which allusion has been made — operative preparations, sterile dressings, special portable apparatus, occasional attendance of trained nurses for day or night; these might all, in selected cases, be supplied from these central laboratories or hospitals to patients at their homes, at expense adapted to the pecuniary resources of the patient. The benefit would be to the patient and to the hospital; to the patient, in that in many cases homes would not need to be broken up and the family scattered, as so often occurs when, for instance, the wife and mother goes to the hospital; to the hospital, in that there would be much saving of space on cases that could be equally well cared for at home, leaving the beds free for the more serious cases which now are often crowded out for lack of room; also, a saving of expense on these less serious cases, since Mr. Burdett has calculated that, on an average, one in-patient represents an expenditure about equal to that of thirty out-patients.

It can be at once seen how a recognition of the justness and fairness of these points would not only remove friction and hinder parasitism but would immensely favor co-operation among the whole community, patients, hospitals and doctors. Mr. Burdett, the hospital authority already quoted, is of the opinion that American hospitals are grievously mistaken in not paying their attending staffs; indeed, he says, "I am one of those who have come to this conclusion, that, for the well-being of all the hospitals, I would pay every medical man who gave any services whatever to any hospital."[22] The only argument I have ever heard made in favor of doctors giving their services free to hospitals is that the doctors were increasing their knowledge and reputation by being permitted (!) to do this. But this is no argument at all, and it is most unjust to use what is the glory of the medical profession as a means for destroying their livelihood. Every conscientious man in every profession, trade or business is learning his work better and is perfecting himself daily by the accomplishment of each piece of work ; yet that is never put forth as a plea for paying him less, rather is such a man worth more. It is the same with the doctor; instead of paying him less because he is learning more, he should be paid more.

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[20] Report of Sixth Section of the International Congress of Charities, Correction and Philanthropy, Chicago, 1893, p. 129.

[21] Quoted in full in Medical Relief to the Poor; compiled by William B. Lawrence, M.D., p. 35.

A final plea for the parasitism of the hospital has been the teaching facilities which are nowadays an essential part of the scheme of every well-regulated hospital and dispensary. Probably nothing does more to promote the deplorable tendency to look upon sick people as "cases" and "material" than the belief that a poor patient is, because of his poverty, legitimately at the disposal of the teacher and his class of students, while the paying patient, in his private room, is exempt from this annoyance. Modesty and self-respect are as much or more to be cultivated in the poor as in the rich, and the use of his or her body or organs for the purposes of study or demonstration should be a free concession to the good of his fellow-beings on the part of every patient, rich or poor. The value, nay, the necessity, of such methods should be constantly taught every member of the community by every physician, and a public spirit promoted which should encourage every one to make this contribution to the common good. (The same effort should be made to educate people to the general performance of autopsies.) Much has already been done in this line, and it has been found that it is not necessary to offer free treatment as a bribe. In some of the English reports it is especially mentioned that the introduction of the Provident system has caused "no impairment of hospitals as places of medical education." The attendance was even increased at the Royal Albert Hospital, to which a medical school is attached. The experience of Professor Volkmann, at Halle, is in the same direction. One of his rules is that every operation shall be performed in the operating-theatre of the public hospital, so that the students may have the advantage of seeing it, the patient being brought in anesthetized and removed unconscious. He will not undertake the care of a patient who declines to submit to this rule. He has, the report says, six private hospitals, and there is no trouble.[23]

As a final word, it must not be expected that any Provident scheme evolved shall, at any rate in the beginning, be self-supporting. Every community in this great and prosperous country has plenty of money, every community has plenty of people filled with the sincerest desire to help their weaker fellows. It should only be insisted upon that this money and this enterprise shall be directed towards making all independent and self-respecting and self-helping.

This résumé of the subject would not be complete without some reference to a new theory which is forcing its way into the management of medical, as well as industrial, subjects. It may well be that in matters where mass action of the community is demanded, as in quarantine and the control of contagious diseases, socialistic or communistic measures may find favor. But it must not be forgotten that socialism or communism is, at its best, what one writer calls "compulsory co-operation,"[24] whereas the ideals of a free people, like those of this country, are all in the direction of the development in each individual of that sturdy self-reliance and mutual respect which lead legitimately to that voluntary co-operation which is the outgrowth of the Golden Rule.

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[22] Hospitals, Dispensaries and Nursing. International Congress of Charities, Correction and Philanthropy, Chicago, 1893, p. 131.

[23] Henry C. Burdett: Pay Hospitals and Paying Wards throughout the World, p. 48.

[24] Herbert Spencer: Principals of Sociology, ii, 2, p. 604.

CASES OF DISLOCATION OF THE OS MAGNUM.

BY SAMUEL L. ABBOT, M.D., BOSTON,
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Case I. I was called to a young married lady, and found her with her left forearm in a sling, the back of the wrist being considerably swollen and red and very painful. She told me the following story:

On the evening before, as her husband was sitting at the table in her drawing-room reading, she walked by him with her arms crossed upon her chest, and as she was passing he extended his right arm and drew her to him, his arm completely encircling her waist, outside of her flexed arm. In doing this he bent her left wrist so severely that she cried out with pain. The pain continued through the following night, and I was called to her in the morning. I found her still suffering, and as she held out her wrist for examination I saw there was considerable swelling with redness on the back of it, with a marked prominence towards the outer side. It looked so much like a ganglion that I said at once "That is a weeping sinew," although I had never seen one in that location before. It was quite tender on pressure and felt harder and was less rounded than ganglia usually are. On extending the hand on a plane a little above that of the forearm it subsided entirely, leaving no marked prominence above the level of the wrist. On flexing the wrist again the prominence reappeared, and I at once saw that the injury must be a dislocation of the os magnum. No other bone was displaced. As I had never seen such a dislocation before, I made my diagnosis with some hesitation, reserving my final decision.

The treatment of the condition was obviously simple enough. After extending the hand backwards until the prominence disappeared I applied a Bond splint with a roller bandage up to the elbow, leaving the fingers of the hand free. The arm was supported by a sling. I examined it carefully from time to time and was pleased to find that the bone remained securely in its place, so that my diagnosis became a positive conviction.

After watching the case for a few days I asked permission to show it to an eminent hospital surgeon, the late Dr. R. M. Hodges, as one of much interest. This gentleman examined it most thoroughly — bending the wrist repeatedly so as to raise the bone from its bed, and then replacing it again in its normal position. He said nothing to the patient about the nature of the injury, but most cordially approved of the treatment it was receiving. After leaving the house I waited a few moments for some expression of opinion from my friend as to the nature of the case, but he said nothing, so I asked him what he thought of it. His somewhat brusque reply was, "It is n't what you think it is." "Well, what is it, then?" "I don't know," was his answer, repeating his first confident assertion. Of course I was somewhat disconcerted by his positive manner, but could see no good reason for giving up my diagnosis. The next morning I received a note from him in which he said: "No one can read the article in the *Encyclopœdie de Science Chirurgicale*, in the Hospital Library, on Dislocations of the Wrist and have any right to question the accuracy of your diagnosis."

The result proved I was right. By the end of a month the bone had become firmly fixed in its original place, although the wrist was so tender that the hand could not be used with facility in playing on the piano for six months.

Case II. While I was in medical attendance upon a young lady who had jus returned from her summer sojourn in the country, her sister, who happened to be in the room, held up her left wrist for my inspection, flexing and extending it repeatedly without making any remark. At once I saw a dislocation of the *os magnum*. I told her what it was and asked her how she had hurt it. She replied she had n't hurt it at all; that the condition had come on gradually during the summer. I examined it carefully; the bone slipped easily into its place on extending the hand above the plane of the forearm, but became dislocated again on bending the wrist, which was not broken or in the least degree painful or reddened, nor had it been at any time. It could be handled freely without pain. By the most careful questioning I found it impossible to elicit the least information as to the cause of the condition.

I asked her about her daily use of her hand at her summer residence, a few miles out of Boston, but for some time could not get anything from her which could be accepted as a cause. She had not met with any kind of accident. At last she said: "You remember that black horse which I ride almost every day in summer is a most spirited animal, and I have to hold him with a very firm hand."

"That's it!" I exclaimed; "you have gradually stretched the ligaments about that bone until it has been squeezed almost entirely out of its socket."

The wrist was not in the least degree tender, and bore all the handling necessary to make out a positive diagnosis, without exciting complaint. I treated the case as I did case No. 1 and with an equally good result. At the end of a month the bone was fixed firmly in its proper bed. I then advised her during the next summer to hold the bridle rein in her right hand rather than the left, which she promised to do. When I saw her for the first time the following autumn she immediately held up her right hand, without comment. bending her wrist slightly, and there was a dislocation of the *right* os magnum! — painless, — the gradual result of following my advice to hold her bridle rein in her right hand during the previous summer, — thus confirming my opinion as to the cause of the trouble in her left wrist the autumn before.

Case III. The previous pathological history of this young lady may not be without interest, as bearing upon her special surgical susceptibility. so to speak.

It happened a few years before I treated her for her first dislocation, that during several successive winters she was under the care of the eminent surgeon of this city, to whom I had shown it, for "water on the knee." The trouble was a painless one, and was under his observation and treatment for several successive winters. While she was in the country in the summer it disappeared. Early in the autumn, one year, soon after her return home, I made a professional call on her older sister, who occupied a chamber adjoining hers. During my visit I noticed a very disagreeable smell in the room, and commented upon it. My patient had noticed it that day for the first time, and together we tried to trace it to its source. Nothing could be found in her chamber, so I accompanied her into the adjoining room, that of her younger sister. We found her engaged in a similar search. On approaching a set basin in the room an overpowering stench was found to be issuing from it, evidently coming up the waste pipe which led into the drain. This occurred before the drainage of Beacon Hill, where the ladies lived, had been completed under the new system, and all the filth was carried directly down into the Charles River. When the tide was out of course there was a strong draught inwards, particularly when the wind was from the west, bringing into the house a horrible effluvium from the river deposit and the deposit in the drain. A very expensive system of drainage had been put into the house the year before, block-tin pipes having been used instead of lead, in order to secure the most complete protection against leakage and the gnawing of rats. A thorough examination of the pipes at this time led to the astonishing discovery that not one of them had been trapped. Of course traps were immediately put in the proper places, and the set basins were taken out of the chambers.

The right knee of the young lady whose case is the second above reported had begun to swell, as it usually did in the fall, and she was looking forward to a repetition of her usual winter surgical treatment. But what was her astonishment and that of all the members of her family, — from the moment the foul air from the drain was excluded from the house her knee began to get better, and was soon well, without any local treatment, and continued well until her death, several years after. It is an interesting question whether her horseback exercise during the summer had any influence in producing a special susceptibility to the painless effusion of water, never into her left knee, but always into the right one, which in riding was over the pommel of the saddle.

Case IV. Several years after treating case No. 3 I was called to a lady's maid and found her with a swollen, red and very tender right wrist. She had been for some time devotedly attending upon her mistress, who was in her last illness, and very heavy with dropsy. She was obliged to lift her a great deal, frequently changing her position in bed, and her right wrist, from this cause, had got into the condition in which I found it.

Examination showed it to be a dislocation of the right os magnum. She was unwilling to give up her work and submit to the application of a splint to her arm, so I was obliged to compromise by applying a figure-of-eight bandage in such a way that the point of crossing of the lines at the middle of the figure came directly across the dislocated bone. It kept the bone fairly in place, but interfered a good deal with her work, so, without consulting me, she took off the bandage and substituted for it an eel skin, which she herself, with some assistance, applied as I had the cotton bandage, taking it off at times when she was obliged to use her hand in her heavy lifting.

I do not find much notice of this injury in books on surgery, — some of them not mentioning it at all. The most explicit account of it which I have seen is in Chelius's "System of Surgery," translated by South, volume II, page 234, in which he gives as a method of reduction, "pulling at the fore and middle finger while pressure is made over the bone." He advises that the hand "be laid upon a flat board, pressure made upon the projection with a compress, a splint applied, and the whole fixed with a roller." I found a much more simple method, and one likely to be much more comfortable to the patient, to be the use of Bond's splint, by which the bone drops into its place without any painful handling, and remains there as long as the case may require, without disabling the fingers and thumb, or causing the patient the least pain.

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INVERSION OF THE UTERUS.[1]

BY H. E. MARION, M. D., BOSTON.

By complete inversion of the uterus is meant a uterus that is "upside down and inside out," no matter whether it is within the vagina or outside of it. Denuce attributes the first recognition of this accident to Hippocrates.

Frequency. — Winckel in more than 20,000 labors has not seen a case of complete inversion; nor had Braun one in 250,000. Denham in 100,000 cases of labor in the Rotunda Hospital found one case of inversion. Kehrer states that the accident is thought to occur once in 2,000 labors, while others state that it does not occur oftener than once in 140,000. Cross collected 500 cases, 450 of which followed delivery. Mann states that the puerperal cases comprise between 85 and 90 per cent. of all the cases. I wish to consider simply those cases immediately after delivery, or coincident with the third stage of labor. Although it is stated that inversion may take place hours and possibly days after delivery, I think it would be nearer the truth to say that they were not recognized until hours or days after delivery. In other words, I am extremely sceptical about a puerperal inversion of the uterus taking place at any other time than immediately after delivery.

Furthermore, I am decidedly of the opinion that complete inversion of the uterus is much more common than the books would lead us to believe. By far, as will be seen later, the greater number of deaths from this cause occurs within half an hour after delivery. From my experience, this is not putting it too strongly. In many of the deaths reported as from post-partum hemorrhage, if the truth could be known, the cause would be post-partum hemorrhage due to complete inversion of the uterus.

Etiology. — Complete inversion of the uterus presupposes, and must be preceded by, complete uterine relaxation, inertia or paralysis. The factors that contribute to this condition may be briefly summarized: A weakened and debilitated condition of the patient from whatsoever cause prior to labor; a uterine wall thinned and weakened by over-distention, as from hydramnios or multifecundity; a prolonged, tedious and difficult labor, instrumental or otherwise; complete syncope from hemorrhage or shock; profound anesthesia carried into the third stage of labor. (The causal influence of primiparity is pretty well established. In 146 cases given by Crampton 88 were first deliveries. No satisfactory explanation for this, so far as I know, has yet been given. In most works on obstetrics external violence is mentioned as the chief factor in the production of inversion. W. Bickman, on the other hand, who has carefully studied 100 cases, has obtained the conviction that inversion occurs most frequently in primiparæ and young persons, and that violent manipulations rarely play the most important rôle in its etiology.) Rokitansky speaks of "paralysis of the placentar zone." Inversion may occur spontaneously by the simple weight of the placenta, especially if that be implanted at the fundus, — which conditions are further enhanced if the patient be in an erect or semi-erect position. The inversion may be caused by abdominal pressure when the abdominal muscles and diaphragm are fixed, as in the act of straining, or by pressure of the hand upon the uterus. Kaltenbach makes mention of such a case. It is not uncommon to require of the nurse to "make pressure over the uterus" to insure its contraction, while the obstetrician is looking after or resuscitating the child.

Inversion may be caused by undue tension of the cord, either in the delivery of the child, there being absolute or relative shortening of the cord, or when the child is expelled when the mother is in a standing position. Perhaps the most fruitful source of inversion is pulling on the funis in order to remove the placenta, especially so if this is done immediately after the delivery of the child, and in cases where the placenta is more or less adherent.

While the above factors imply a defect or vulnerable condition in the patient, on the one hand, and a faulty technique of the obstetrician, on the other, yet I am convinced that it is only an unfortunate conjunction or combination of two, oftener more, of the above conditions that produces this disaster.

Symptoms. — Most prominent among the symptoms is *hemorrhage*, showing itself by excessive flow and amount of blood lost, and by extreme pallor, syncope and collapse of patient. *Shock* is also spoken of as one of the prominent symptoms, and when there is no hemorrhage, as when the placenta is still attached, it might strictly be called shock *per se*, but oftener it is shock from the loss of blood.

Diagnosis. — Diagnosis of uterine inversion on the spot at the time of occurrence, to which this paper particularly refers, offers almost no difficulty. The exsanguined condition of the patient, that ghastly pallor, which once seen can never be forgotten, together with collapse, large amount of blood in the bed or flowing constantly from the ostium vaginæ, the absence of tumor — contracted uterus — above the pubes, and the presence of a globular tumor either without or within the vagina, presents a picture that has but one interpretation. Immediate action looking to its restoration is of far more importance to the patient than a refined diagnosis, such as finding the oviducts, demonstrating the endometrium and the urn-shaped opening of the inverted uterus through the abdominal wall, which latter condition will be most characteristic as restoration progresses. Naturally when the patient is seen some time, possibly days, after the accident, one has time to deliberate and differentiate between inversion of the uterus, polypus, fibromyoma, cystocele and rectocele.

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[1] Read before the Obstetrical Society of Boston, January 17, 1899.

Prognosis. — There is no doubt that puerperal inversion of the uterus is one of the very gravest accidents that can befall a lying-in woman. Cross states that one-third of the women with puerperal inversion of the uterus die either immediately or within a month. In 72 of 109 fatal cases collected by him death occurred within seventy-two hours — usually within half an hour. Crampton in 1885 collected 120 cases: 87 recoveries, 32 deaths, and one remained unrelieved. Shultz mentions that spontaneous restoration of the uterus occasionally takes place, referring to such cases.

Treatment. — As prevention is better than cure, be sure that the patient approaches her confinement in the best possible condition, physically and mentally. Regular amount of exercise in the open air short of fatigue, rest and recreation adapted to the patient's temperament. Secure the services of a competent nurse, and have her early on hand, not only to ensure the comforts of the patient but to provide for any emergency. Insist upon the recumbent position during delivery.

If the funis is found to be much too short tie and divide promptly; if relatively shortened by coils about the child remove them as quickly as possible. Make absolutely no effort to remove the placenta by traction on the cord for thirty minutes, or until after firm uterine contraction has been repeated. To stimulate the uterus to contract, do so by the Credè method, and not by making pressure upon the uterus. Embrace the whole fundus in the hand as one would a croquet ball to pick it up — the fundus in the palm of the hand, the fingers extended behind and the thumb in front of the uterus. When the placenta has been expelled into the vagina, or nearly so, make deep pressure just above the pubes and below the now contracted uterus; at the same time make traction on the cord. To disengage the placenta from the ostium vaginæ make rotary motion as around the axis of the vaginal canal.

By following carefully these suggestions one will most surely escape all the extrinsic causes of inversion. But when the accident has once occurred carry the hand, which by touch has detected the uterus in the vagina (when it has not been forced outside), quickly into the vagina, grasping the inverted fundus with the thumb and fingers of one hand, at the same time with the other make pressure over the top — cervix — of the inverted uterus through the abdominal wall. Make equal pressure with both hands in the axis of the uterus. In this way the cervix will be passed down over the body, and the body be forced up through the cervix, and the organ will assume its normal relation more quickly than it has taken me to tell it. Allow the hand that is now within the uterus to remain there until there have been some uterine contractions. The hand that is external can, at the same time that it makes downward pressure, make pressure backwards against the aorta, arresting hemorrhage if any there be. If the uterus does not quickly contract while yet the hand is in it irrigate with a hot sterile salt solution. When once the uterus has contracted the hand may be cautiously removed, — cautiously, lest the uterus be again inverted, — and continue the irrigation. After there are reasonably firm contractions a bichloride solution, 1 to 4,000, may be used to ensure thorough antisepsis. Final irrigation should be made with the sterile salt solution.

The uterus can thus be restored without making any demonstration, not even apprising the patient or friends of the accident until after immediate danger is past, thus economizing most valuable time. If assistance be at hand, the foot of the bed or the hips of the patient can be raised above the level of the heart, thus relieving brain anemia. Much has been written about the different methods of procedure. All have their merits and demerits, depending wholly on the case in hand. This is the way I have met the emergency, and the results have been most satisfactory.

Authors speak of introducing the fingers, shaped as much as possible like a cone, indenting the uterus at the fundus or at either cornu, and in this way carrying the body, fundus first, up through the cervix. This may be necessary in cases of long standing, but I am dealing with the immediate restoration, thus avoiding cases of even an hour's duration. It goes without saying that in this year of our Lord everything should be as thoroughly aseptic as possible.

Case I. Mrs. E. L. R., nineteen years, primipara, small in stature, weight one hundred pounds, very anemic. Labor commenced in the forenoon, December 19, 1896; was terminated with forceps, on account of the exhausted condition of patient and inefficiency of pains, about midnight. Present, an untrained and inefficient nurse, and the husband, who held the cone after primary anesthesia was produced. Child was easily delivered — male, weight six and one-half pounds. Third stage was terminated in about half an hour, without any apparent change or difficulty. Noticing a considerable post-partum hemorrhage, the patient more blanched if possible than during the labor, I put my hand on the abdomen to reassure myself of the contraction of the uterus. Not being able to find it, and perceiving the excessive flow and the deathly pallor of my patient, I surmised the cause and quickly made a digital examination, when my worst fears were confirmed. Directing the husband to give more ether, — she having recovered from the anesthesia, — and without removing my fingers, I quickly introduced my hand, and with the other for counter-pressure I quickly — more quickly than I have been telling it — reduced the inverted organ. The reduction was followed by a bichloride (1 to 4,000) uterine douche, which, in turn, was followed by a sterile salt-solution douche. The uterus slowly contracted, and I left her after two hours feeling very comfortable, ignorant of what had happened. Convalescence was uneventful, though protracted on account of excessive anemia.

Case II. Mrs. G., age twenty-four, primipara, of medium stature, not robust, weight one hundred and twenty. Seen in consultation with Dr. McCauley, on account of tedious labor and anxious friends. When I reached the house the child's head was distending the vulva, and I suggested that ether, which had for a short time been discontinued, be again administered, hoping in this way to avoid rupture of the perineum. The child was soon expelled, and I assumed the care of the mother while Dr. McCauley resuscitated and ministered to the wants of the baby. The uterus did not contract quickly, and I stimulated it by manipulation. After fifteen minutes, and when there had been apparent contraction of the uterus, I made slight but not continuous traction on the cord, at the same time keeping one hand on the uterus. Flowing was considerable. Within ten minutes, I should judge, I felt the placenta at the ostium vaginæ. Rotating it in the axis of the vaginæ it readily came away, but with it a tremendous gush of blood. As the messenger who had been despatched for ergot had not returned, I hastened to prepare and give a hypodermic of ergotine. This done, noticing the patient was in a collapse, I felt for the uterus above the pubes. Not finding it I immediately examined, *per vaginam*, with my finger. I at once recognized the uterus inverted just within the vulva. Pushing my hand right on within the vagina I grasped the fundus or lower portion, and with counterpressure with my other hand on the cervix I easily succeeded in restoring the organ to its normal condition. The patient was practically pulseless and in profound collapse. Calling the doctor to my assistance, the bed and the patient's hips were elevated. I kept my hand in the uterus until it began to contract. Copious uterine douches were given, bichloride, 1 to 4,000, preceded and followed by sterile salt solution. To counteract the exsanguined condition of our patient a copious enema of salt solution was given and retained. Dr. McCauley in the meantime gave strychnia hypodermically.

I understand the patient made an uninterrupted recovery.

Thus, twice within two years, and never before during my professional career, this very grave accident has come under my immediate observation. The cases had these conditions in common: Both were slight in stature, one delicate and very anemic, the other far from being robust. Both were primiparæ. Both were under the influence of ether. Both children were living, and there was nothing remarkable about their respective umbilical cords. In neither was there undue haste in the removal of the placenta. In both there was excessive hemorrhage, due to the inversion. In both combined (Credè) and slight traction was practised. In both immediate replacement was performed before even mention was made of the accident to any one, thus avoiding any undue excitement.

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Clinical Department.

A CASE OF CHRONIC INTESTINAL OBSTRUCTION.[1]

BY FRANK A. HIGGINS, M.D., BOSTON.

O. M., a well-developed woman of French descent, thirty-eight years old, was first seen August 31st. She was married, had had nine children, the youngest being eight months old. There had been no miscarriages, no history of venereal disease, and she had never been ill, except at the time of her confinements, before the beginning of her present trouble. Her sickness first began about five months before with an attack of severe constipation, lasting for about two weeks, being finally relieved by cathartics and enemata. Since the first attack of severe constipation there had been four or five altogether, averaging one a month, each one growing in severity until no relief was obtained from enemata or cathartics. During the fourth attack, about one month before being seen, after failure of cathartics, the patient was given by her family physician to take internally one pound of clear metallic mercury. This resulted shortly after in a number of profuse evacuations of the bowels and in the expulsion of the mercury. The patient apparently suffered no deleterious effects from this unusual dosage and her bowels continued to move afterwards every three or four days for a short time.

Nine days before coming to the city, the patient again being troubled with constipation, another pound of metallic mercury was administered inside of an hour in divided doses of a drachm each. This was only partially expelled seven days after taking, and it continued to come away in small quantities for the several days following. During these attacks of constipation the patient suffered much from pain and flatus and there was considerable abdominal distention. Morphine was used only once for pain. She had been confined to her bed the greater part of the time for the past five months, and had lost about thirty pounds in weight in this time.

On physical examination patient appeared well developed, poorly nourished, heart and lungs negative, tongue had a thick grayish coat, abdomen enormously distended, with the abdominal walls thin, and there was marked peristaltic action of the bowels visible through them; abdomen generally tympanitic except in lower portions, which were somewhat dull, not tender or sensitive on palpation. Abdominal organs were obscured by tympanites.

On vaginal examination uterus was found crowded down into pelvis, and both in front and back of uterus, and indistinguishable from it, were hard masses, resembling in hardness the substance of a fibroid.

Rectal examination found the lower bowel full of feces, and a large mass was made out above. Patient was suffering pain and there was some vomiting, but not extreme or fecal. High rectal enemata were repeatedly given without result, likewise the administration of cathartics.

Accordingly on September 4th, the patient, showing no improvement but, on the contrary, her condition growing quite precarious, was operated on by Dr. Burrell, the writer assisting. An incision was made in the median line, the enormously distended bowels obstructing the operation were aspirated by a small needle and the distention partially relieved. The uterus, appendages and other abdominal organs were found practically normal. A large mass filling up the pelvis and lower bowel was found to be a part of, and the contents of, the bowels themselves. Accordingly the abdominal incision was partially closed and the descending colon sutured to the opening, with the intention of later making an artificial opening if it should become necessary, as seemed probable. Patient made a good recovery from the ether, and on the second day following the operation had a small voluntary dejection. On the following day an enema produced a very copious evacuation of the bowels. An enema was given on alternate days thereafter with good results, until the tenth day after the operation, when the patient had a normal movement without the enema, and on the successive days, two, five, four, two, four and two movements each, when they then became normal with one each day. This result having been obtained, the abdominal wound was allowed to close, and the patient was discharged well in twenty-three days.

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[1] Read before the Obstetrical Society of Boston, January 17, 1899.

A letter from her family physician to me some months after the operation reports the patient as having had no recurrence of her trouble, and she apparently is perfectly well.

Intestinal obstruction is divided for clinical purposes into two forms, acute and chronic. In the chronic form the onset is usually more or less slow, and there is often also a previous history of abdominal trouble. The varieties of chronic obstruction are given as arising from

(1) Stricture of the intestine, the result of new growths or cicatrices from the healing of syphilitic, dysenteric or other ulcers.

(2) Obstruction inside the bowel from the accumulation and impaction of fecal matter, gall-stones, intestinal calculi, or the aggregation of foreign bodies which may have been swallowed.

(3) Obstruction from causes outside the bowel, such as the pressure from new growths.

(4) Another cause of chronic obstruction is said to arise from agglutination of intestinal coils by adhesions after recovery from extensive general peritonitis.

Fecal obstruction, the only one of the four enumerated which it is necessary for us to consider in connection with this case, occurs only in the large intestine, and usually in the sigmoid flexure or cecal region. It is said to be due to an acquired dilatation of the bowel from a prolonged over-distention resulting in a paresis of the distended portion.

The symptoms of chronic intestinal obstruction are at first not severe, the onset being gradual and the progress irregular. There are attacks of constipation, not absolute at first, which are accompanied by moderate pain and nausea, with vomiting, although the latter is not persistent till late in the disease. The tongue becomes coated and the breath offensive. Abdominal distention from the accumulation of gas and fecal matter is an early and prominent symptom. The distention increases with the duration of the disease, and in prolonged cases the abdominal walls become tense, the abdomen tympanitic, and there is mechanical obstruction to respiration. As the patient becomes emaciated the outlines of the distended coils of intestine, with the peristaltic movements, can be seen beneath the thin abdominal walls. There may be a palpable or even a visible tumor made out in the colon.

Obstruction of the bowels from fecal accumulation is a condition most frequently found in constipated women past middle age and in insane people. The constipation may remain absolute for weeks or even months, with a progressive increase in the severity of the symptoms, and in irremediable cases death results from progressive exhaustion, from a supervening acute obstruction, or from peritonitis following the perforation of stercoral ulcers.

The treatment of fecal accumulation consists in the mechanical removal of the material from the rectum by a scoop, assisted by copious injections, and by administering repeated high enemata of suds and oil. Cathartics are generally useless, especially if the bowel has lost its contractility. Massage and electricity are said to be of assistance in restoring normal peristalsis.

In cases where all ordinary means fail to remove the obstruction and the symptoms continue unrelieved the treatment necessarily becomes radical. It is necessary to open the abdomen and attempt to remove the obstruction or resort to colotomy.

In conclusion, it seems to me that these cases of fecal obstruction are more than simple cases of fecal accumulation, that they are cases of lack of muscular tone in the intestines and abdominal wall, that they occur in people with relaxed and over-stretched muscles, who, as long as they give particular attention to a regular evacuation of the bowels, are likely to suffer little trouble, but on slight accumulation of feces the balance in their favor is lost and they continue to fill up with fecal matter until symptoms of obstruction are imminent. Why in this case the suturing of the gut to the abominal wall should have brought about a cure it is, of course, not possible to say. I believe it may have been due to the change brought about in the direction of the axis of the colon and to the fact that it gave the bowel something to contract against — a sort of fulcrum, as it were.

A CASE OF DOUBLE POPLITEAL BURSITIS, ONE BURSA CONTAINING MOVABLE CARTILAGES.

BY G. H. MONKS, M.D., AND F. B. LUND, M.D., BOSTON.

Enlargement of the bursa lying between the tendon of the semi-membranosus and the inner head of the gastrocnemius is occasionally met with, yet cases like the present, where this same bursa is enlarged in both legs, must be very rare, especially when one of these bursæ is filled with dense cartilaginous bodies.

The patient was a laborer of sixty, who entered the City Hospital January 19, 1898, on the service of Dr. William P. Bolles. He stated that he had noticed for some little time a small swelling at the back of the left knee-joint. For the past few days, however, the joint itself was slightly swollen and stiff, but not painful. An examination of the man's knee showed a small, apparently non-inflammatory tumor, somewhat elongated, and about as large as an English walnut. This knee as well as the other was the seat of a chronic arthritis, as evidenced by prominence and roughness of the edges of the articular surfaces of the femur and tibia, and by moderate grating on flexion and extension of the joints. The skin was movable over the tumor, and it was not especially fixed to the tissues below. It did not pulsate, and there was no tenderness. The diagnosis of enlarged bursa was made, and Dr. Monks made an incision over the tumor of two or three inches long. A bursa was found which corresponded to the inner side of the semi-membranosus tendon. It was dissected out and its cavity was found to be connected with the knee-joint. The pedicle was simply divided, but not ligated nor sutured. The external wound was stitched with interrupted silk sutures and the wound healed promptly.

Some days after the operation the patient called attention to a similar swelling in the right popliteal space the existence of which was not suspected until that time. This swelling was somewhat larger than that on the other side, and of cartilaginous hardness.

It was freely movable, and was made out to be a movable cartilage in an enlarged popliteal bursa.

This was operated upon, under ether, by Dr. Lund, who made an incision in the axis of the leg over the nodule, which was found to be a bursa containing a hard, freely movable body. The bursa was ruptured in attempting removal, and a cartilaginous body the size of a walnut removed. Another similar body was found in the neck of the bursa, just outside the knee-joint, and still a third, but much smaller, body of similar nature was found embedded in the inner wall of the sac. The entire bursa with the three bodies referred to was removed at its neck, and the wound opening into the joint closed with catgut sutures (Fig. 1). The external wound was closed with interrupted silkworm-gut sutures. This wound also healed solidly, and on February 25th the man was discharged from the hospital practically well (Fig. 2).

By chance it was found out that the man had been in the hospital about a year before with *synovitis of one knee*, giving the history that three days before he slipped and fell, striking both his knees, but the left more than the right. He got up, but he was not troubled until the next morning, when he could scarcely move his left knee and could not stand on it at all. The joint was examined and it was found that there was considerable effusion into it. The man was treated in bed with ham-splint and ice-bag, and was finally discharged, relieved, in about three weeks from the time he entered.

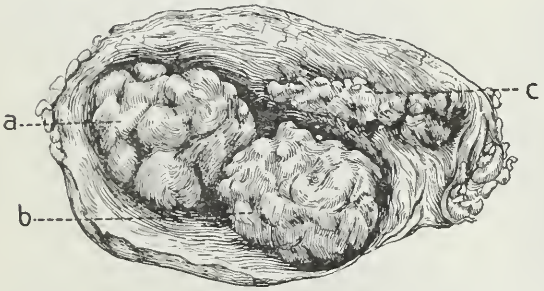

FIG. 1. Bursa laid open to show movable cartilages. Natural size. (*a*) Free cartilage in bottom of bursa; (*b*) free cartilage in neck of bursa; (*c*) cartilage embedded in wall of bursa.

This case is reported because of: (1) the rarity of double bursitis; (2) the peculiar nature of the contents of the bursa on the right side; and (3) the possibility of tracing the origin of both these swellings to the injury received about a year previously, which was of sufficient severity to oblige the patient to enter the hospital.

The finding of a free cartilaginous body in a bursa, such a body as is found not infrequently in the knee-joint, and gives rise when there to a well-known series of symptoms, is uncommon, to say the least.

As this bursa communicated freely with the joint, which was the subject of a chronic arthritis, the question arises whether one of the two free cartilages found in the bursa may not have been originally formed in the joint, and have slipped from there into the bursa. The neck of the bursa was large enough to admit of this happening, since the larger of the two free bodies was lying in the neck of the bursa and close to the joint, into or out of which it might have slipped with ease.

The cartilage, however, which was found embedded in the wall of the bursa, and apparently originating there, can hardly be conjectured to have slipped into the bursa from the joint.

The case has an important bearing, it seems to the writers, on the question of the origin of movable bodies in the knee-joint.

However difficult it may be to explain their occasional occurrence in joints which are otherwise healthy, and present smooth, unaltered synovial membrane, there can be little question that when they occur in joints which are the subject of chronic arthritis, and present thickened fringed synovia with cartilage and lime salts deposited in the thickened fringes, they may arise by the breaking of the pedicles of certain of these fringes, or the breaking off of pieces of thickened cartilage from the edges of the articular surfaces of the bones, and their setting free within the joint. If such were the origin in this case, as appears not improbable, for the knees were certainly the seat of a chronic arthritis, it makes little difference whether the cartilaginous bodies were formed in the joint, or in the wall of the bursa before they were set free. At any rate, one was formed or was in process of formation in the wall of the bursa, where it was deeply imbedded, and showed no signs of pedunculation or other preparation for breaking loose.

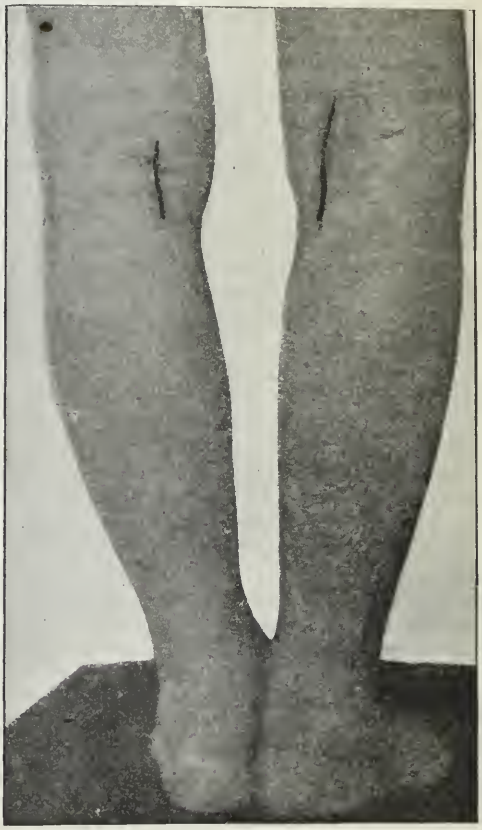

FIG. 2. Photograph showing incisions for excision of the bursæ (marked with ink).

The case may be said to demonstrate that a cartilaginous body may be found in the wall of a bursa. If the bursa communicates freely with the joint, the result is the same as when it arises at any point in the synovial membrane of the joint.

Since the above was written the writers have made a second observation, which shows that these movable bodies may arise either in a joint or a bursa which communicates with it. In a subject in the dissecting-room at the Harvard Medical School, presenting osteoarthritic disease of both knee-joints, the following conditions were noted: (1) A partially calcified cartilaginous body the size of a walnut situated in the wall of the bursa under the popliteus tendon of the right knee; (2) A small, partially calcified cartilage free in the back part of the joint, except for a very slender fibrous pedicle which attached it to the synovial membrane; (3) Several other osteoarthritic deposits in various parts of the synovial membrane. If the small cartilage attached by the pedicle should become detached, what could be more probable than that it might slip into any of the larger bursæ connecting with the joint? If the cartilage in the wall of the bursa should work itself free would it not be easy and natural for it to slip into the joint cavity?

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Medical Progress.

RECENT PROGRESS IN THERAPEUTICS.

BY ELLIOTT P. JOSLIN, M.D., BOSTON.

HEROIN.

Heroin is one of the newer morphine derivatives and promises to be a most useful member of this class of drugs. It is a fine white powder of slightly bitter taste. Professor Leo in an article, "Ueber den therapeutischen Werth des Heroins,[1] refers to the work of Dreser, who showed that after the use of the drug the rate of respiration was lowered, the inspiration prolonged, and, consequently, the "ventilation effect" of a breath increased. In addition, the consumption of oxygen and production of carbonic acid were decreased. Dreser, Floret and Strube testify to its value in the prevention of cough in doses of 0.01 gramme ($\frac{1}{6}$ grain). Leo observed nausea, dizziness and fainting at times with this dose, but with 0.005 gramme ($\frac{1}{13}$ grain) in powder form twice or thrice daily no threatening symptoms appeared, though the patients at times complained of drowsiness and nausea. In painful affections, for example, sciatica, Leo found it less efficient than morphine or codeia, and even in irritative cough it did not equal those remedies, thus disagreeing with the above-mentioned observers.

On the other hand, he agrees with them in thinking it of extraordinary value in dyspnea, as Dreser's experimental work would lead one to expect. Just as digitalis slows the pulsations of the heart and increases the force of each beat, so heroin regulates and strengthens the activity of the lung. These results are based on the treatment of two cases of dyspnea in nephritis, eight cases of emphysema, fifteen of bronchitis and five of bronchial asthma. Several patients previously obliged to sleep erect were able to pass the whole night lying down. As a rule, when the drug was left off the dyspnea returned, but occasionally the relief was permanent. In some cases expectoration was made difficult after the use of heroin, but by combining the drug with potassium iodide both Schwalbe and Leo obviated this occurrence.

Heroin itself is not adapted for subcutaneous use, because of its insolubility, but the hydrochlorate of heroin is soluble. Eulenburg[2] has used this about three hundred times without any local discomfort to the patient. He recommends the same dose as Leo, confirms its value in cough and dyspnea, and, contrary to Leo, has had good results in neuralgias. In addition, he has given it to chronic morphinists and they have been able to replace four doses of morphine by two of heroin and with even a gradually decreasing quantity of the same. The appetite and nutrition furthermore showed less disturbance than when under the influence of morphine. As a narcotic heroin is not equal to morphine. By long use the dose must be gradually increased.

ORTHOFORM A LOCAL ANESTHETIC.

Orthoform[3] is a local anesthetic which may be described as practically a synthetic cocain. According to Einhorn and Heinz, who introduced this substance, it relieves the pain of exposed sensory nerve endings, is absolutely harmless and of slow absorption. It is, furthermore, antiseptic. It has been used successfully in the treatment of wounds, severe burns, fissures and in painful ulcerations, whether benignant or carcinomatous in character. In the conjunctival sac the aqueous solution of pure orthoform is sufficiently strong to produce anesthesia, which, though more slowly developed, is more lasting than cocain. It has been given internally in ulcer and cancer of the stomach in doses of 0.5 grammes ($7\frac{1}{2}$ grains) several times a day, relieving the pain and producing no toxic symptoms. As it works only when the surface of the mucous membrane is removed it can be of diagnostic value. Kallenberger and Neumeyer report most favorably on its use in surgery.

In dentistry Wittkowski and Rotenberger[4] have found it of great value as an anesthetic after extractions, for injuries to the gums, inflamed pulp and excavating.

Orthoform (new), a slight modification of the original preparation, is cheaper than orthoform, but with similar action. It was also introduced by Einhorn and Heinz, and is most favorably commented upon by Klaussner,[5] who has carefully reviewed some twenty-nine different reports on these two drugs. Orthoform (new) will probably replace orthoform and take its name.

Nirvanin[6] is a similar product adapted to subcutaneous use and the reports so far as received are favorable. It is also antiseptic. A two-per-cent. solution produces a complete and lasting anesthesia when injected subcutaneously and is ten times less poisonous than cocain.

Orthoform, then, is a preparation valuable for the surgeon, physician, ophthalmologist, laryngologist, gynecologist, and dentist. It works quickly, its action lasts for several hours, and it is harmless.[7]

A CRITICISM OF THE THYROID TREATMENT OF ADIPOSITY.

At the suggestion of the *Deutscher medicinische Wochenschrift* Ebstein[8] has discussed the thyroid treatment of obesity. N. Yorke-Davies brought this method first into popular use, and his results have been confirmed in Germany by Leichtenstern and Wendelstadt. It was not long after the publication of these articles, however, that criticisms began to appear. Yorke-Davies replied to the numerous attacks upon his method by saying that he used the thyroid tablets only exceptionally, and only then under the most careful observation. Coincident with these criticisms there appeared in the *British Medical Journal* a letter of warning from Burroughs, Wellcome & Co. against the indiscriminate use of thyroid preparations among the laity. Articles in favor of the thyroid treatment have diminished in frequency, and in the above review Ebstein records his experience in seven cases, which was by no means encouraging. As a result of his study of the subject he comes to the following conclusions:

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[1] Leo : Deut. med. Wochen., 1899, p. 185.

[2] Eulenburg : Deut. med. Wochen., 1899, p. 187.

[3] American Year Book of Medicine and Surgery, 1899, p. 924.

[4] Wiener medic. Presse, 1899, p. 395.

[5] Klaussner : Münch. med. Wochen., No. 42, 1898.

[6] Schmidt's Jahr., 1899, p. 15. Also see Central. f. Chir., 1899, p. 387.

[7] Since this report was written there has appeared in La Semaine Méd., 1899, p. 104, an account of four instances of toxic symptoms due to orthoform. These were headache, fever, nausea, vomiting and an erythematous rash of a wine-red color. The above disappeared three days after the orthoform was washed from the wound.

[8] Deut. med. Woch., 1899, Nos. 1 and 2.

(1) The treatment of adiposity by thyroid preparations is unsatisfactory in its practical results, because the loss of weight is inconstant, often fails, and in those cases in which it does take place recurs when the treatment is omitted or during its long-continued use. Loss of weight so obtained is not accompanied by that advance in general health which is observed in cures based on diet and appropriate rules of living.

(2) The loss of weight obtained through thyroid preparations is not rational, since the body loses albumin as well as fat. Richter's claim that this loss of albumin can be avoided by a proper diet has not yet been sufficiently substantiated.

(3) Thyroid extracts are not needed in the treatment of adiposity, since good results can be obtained by other methods and without accompanying dangers.

In closing Ebstein expresses the opinion that thyroid preparations should be under the same State control as other medicaments. The reporter has recently seen that this is to be the case henceforth in Austria.

(*To be continued.*)

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Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

MALCOLM STORER, M.D., SECRETARY.

Meeting of January 16, 1899, the President, Dr. F. H. Davenport, in the chair.

Dr. F. A. Higgins read a paper entitled

A CASE OF INTESTINAL OBSTRUCTION.[1]

Dr. J. B. Swift: I remember two cases of intestinal obstruction, neither of which, however, was of quite the nature of the one reported by Dr. Higgins. The first followed a pelvic abscess, while the second was the result of malignant disease, and was relieved temporarily by colotomy. In the case following a pelvic abscess the constipation was progressive and finally led to complete obstruction of the bowel. Operation was declined for several weeks, and when finally she did enter a hospital she came under the care of a surgeon who was somewhat reluctant to open the abdominal cavity, and at last she suddenly died unrelieved.

Dr. J. P. Reynolds suggested that the happy result following simply stitching the intestine to the abdominal wall, in Dr. Higgins's case, might be due to the relief of abdominal pressure during the operation, and so affording the intestine a chance to work at greater advantage.

Dr. A. D. Sinclair: As an example of the class of cases that are saved by modern surgery I am reminded of a case I saw many years ago, in which, death following absolute constipation, there was shown at the autopsy an annular constriction fourteen inches from the anus, with no sign of malignant disease at any other point.

Dr. W. E. Boardman: Aside from malignant disease I can recall only two cases as occurring within my personal experience, both of which I saw prior to the days of modern surgery. The first was one of constriction by a band which at present could have been relieved with ease. The second case was finally relieved by high injections of hot oil. Should, however, such a case appear to-day operation would afford much the surest and easiest treatment.

Dr. J. G. Blake: Many years ago I saw a case which I reported at length in the *Boston Medical and Surgical Journal* at the time. The case began as one of ordinary constipation, which finally became absolute, the bowels not moving for eighteen or nineteen weeks, finally followed by spontaneous copious evacuations. Unfortunately, although the constipation was thus relieved, the drain upon nature had been too great and the patient soon died. This case was before the days of modern surgery, and the influence of one of the consultants was sufficient to deter the others from insisting upon an operation. The striking feature in this case was the relief afforded by aspiration of the bowel — time and time again imminent death from failure of respiration was avoided by withdrawing sufficient gas from the intestine to allow the diaphragm to fall enough to let the patient breathe. In those eighteen weeks the bowel was aspirated one hundred and fifty times, apparently without even the slightest bad result. Life meanwhile was maintained by the free use of stimulants, — a bottle of champagne and one of brandy daily by the mouth, — combined with rectal feeding, depending largely upon fresh pancreas minced with beefsteak, as suggested by Dr. Morrill Wyman. Besides this case I have seen another in which there was only one movement in three weeks, with apparently no injury to health, showing the adaptability of nature to circumstances.

Dr. G. J. Engelmann: While I grant that many of these cases can be relieved only by the knife, I must insist that many can be relieved equally well by electricity. I remember a woman whom I had treated for fibroids with electricity for some time, in whom a constipation of long standing was also relieved by the same treatment. Being called to her two years afterwards, I found her almost in collapse with intestinal obstruction of nine days' duration, following gradually increasing constipation. While making preparations for operation I tried the use of the faradic current with one pole externally and the other high in the bowel, using water as a conductor. This was repeated after five or six hours and several evacuations promptly followed. I have used electricity to a considerable extent in constipation, and French observers report about 50 per cent. cures in obstinate cases. I use the primary faradic current, which has a decided action upon non-striated muscular fibres, and depend upon water as the conductor within the bowel. Althaus has reported some cases in which he used the primary faradic coil with a metallic electrode in the bowel. I strongly prefer water, or, at least, that the metallic electrode should be well wrapped in wet cotton. In Paris they use the galvanic current applied as I do the faradic. In the case reported by Dr. Higgins it seems to me that the use of an apparatus such as I show here would have been most promising. I would strongly urge that in such cases it be tried two or three times in twenty-four hours before resorting to operation. It is far more potent than injections or any other means at our disposal. The only objection is that suitable apparatus is not always at hand.

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[1] See page 426 of the Journal.

Dr. M. Storer: I have been so impressed with the use of the cautery as described in Kelly's "Operative Gynecology" (vol. ii, p. 78) as a means of relieving tympanites following abdominal operations that I should be inclined to try it in a case such as Dr. Higgins has described. This consists in lightly passing the platinum tip, heated to dull redness, over the distended abdomen in all directions at a distance just enough to singe the short hairs. I suggested its use in a recent case which was in desperate condition with fecal vomiting, and within five minutes gas was being expelled in volumes, and shortly the bowels moved copiously.

Dr. H. E. Marion read a paper entitled

TWO CASES OF INVERSION OF THE UTERUS.[2]

Dr. J. G. Blake: Many years ago I saw a case of chronic inversion which was not recognized at the time, and subsequently thought to be a polyp by the physician in charge. I first saw her two months later, she having been fairly comfortable meanwhile. It was easily replaced under ether by grasping the fundus and forcing the cervix into position first, so that the tip of the fundus was the last thing replaced. While many teach that this process should be reversed, the method I used presented no difficulties.

Dr. W. E. Boardman: I have seen only one case, which was a chronic one, with no definite history, which had been treated as a polyp. Diagnosis and reduction were equally simple.

Dr. G. H. Washburn: Three years ago I saw a case, in consultation, which had lasted three days without being recognized. The patient was by that time in collapse from anemia. Examination showed the true state of things, and I was unable to reduce the inversion, and I accordingly packed the vagina with iodoform gauze to check the hemorrhage. This was changed on the second day, and on the third day the inversion was found to have disappeared. I then curetted her uterus, as a portion of the placenta was still attached, inversion having been caused by traction upon the adherent placenta. The patient finally recovered.

Dr. Charles W. Townsend: I have seen only one case of inversion of the uterus, and that was in consultation some four years ago. The patient was a primipara, twenty-five years old, anemic, dyspeptic and of fragile build. She gave birth normally, after twelve hours' labor, to an eight-pound child. The placenta was retained two hours and removed manually at the end of that time. This was followed by collapse, and the attending physician discovered a large hard mass in the vagina. I arrived two hours later and found the mass to be an inverted uterus, the diagnosis being easily made. The patient was pulseless, blanched, and evidently moribund. With the whole hand in the vagina, and a hand outside, the uterus was gradually turned back. The reposition took fifteen minutes and was not difficult. The uterus remained hard and did not invert again, but the patient did not rally, notwithstanding salt solutions, stimulants, etc., and died soon after.

Dr. Sinclair: While most of the cases reported to-night have been replaced with ease, I recall a case that I saw many years ago with the late Dr. D. H. Storer, in which two or three hours' persistent working absolutely failed to replace the uterus. The constriction was much as if a cord had been tied around the cervix.

Dr. S. Crowell: I recall a case of adherent placenta with very thin paper-like uterine walls, in which it would have been a matter of the utmost ease to invert the uterus in peeling off the placenta.

Recent Literature.

Affections Chirurgicales du Tronc, Statistiques et Observations. Par le Dr. Pollaillon, Chirurgien de l' Hôtel Dieu, Professeur agrégé à la Faculté de Médecine de Paris, Chargé de Cours, de Clinique annexe, Membre de l'Académie de Médecine. Pp. 843. Illustrated. Paris: Librairie, Octave Doin, Editeur. 1898.

The first of the two recently received parts of this work is devoted to the surgical affection of the "trunk," namely, spine, thorax, abdomen, pelvis, ano-rectal and male genito-urinary regions. The second is a separate reprint of the two latter. There remains to complete the work the section describing the genital organs of women, and that devoted to the affections of the head and neck. The former has not been included in the present volume for fear of excessively increasing its size. The character of the work of Dr. Pollaillon has already been described.[1] His aim is not to report surgical cases, making them the foundation of a treatise on surgical pathology, but to collect all his material, compile his records, classify them, and extract the important clinical facts in order to determine the result of *his personal treatment and experience*, both *operative* and *non-operative*. He tries to show which cases he has cured, which ones he has relieved, and in which cases he has been unsuccessful. He has reported all his fatal cases. Such personal statistics carefully compiled by a skilful surgeon of very extended experience must furnish many valuable facts, and also data of a specific character not found in the usual works on surgery. He gives in addition his final results. The work is therefore interesting to those seeking statistical data or information relating to unusual cases. The book represents, as previously stated, a very large amount of work on the part of its author and his assistants, which is apparently well and carefully done. It is the personal work of an individual of large experience with unusual opportunities for extended observations. It is not a compilation of the work of other surgeons or publications. The illustrations are from actual specimens.

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[2] See page 424 of the Journal.

[1] Boston Medical and Surgical Journal, vol. cxxxiv, p. 372.

Manual of Diseases of the Skin. With an analysis of 20,000 consecutive cases and a formulary. By L. Duncan Bulkley, M.D. Fourth edition. Revised and enlarged. G. P. Putnam's Sons. 1898.

Dr. Bulkley has published a fourth edition of his manual, which has been "very thoroughly revised and much of it rewritten." It is hoped that the book will be of practical value, both to the student and to the practitioner, as a work of reference. The latter object can with difficulty be attained by a small manual of limited scope, while the works of Crocker, Hyde and Duhring are accessible to the profession.

Lectures on Tumors. By John B. Hamilton, M.D., LL.D., Professor of Surgery, Rush Medical College and Chicago Polyclinic, Surgeon to Presbyterian Hospital, Consulting Surgeon to St. Joseph's Hospital, etc. Third edition. Twenty-one illustrations. Philadelphia: P. Blakiston, Son & Co., 1898.

This little work of 140 pages has passed through three editions and must have been very useful to students. It gives in the form of lectures a brief, although excellent, knowledge of tumors. It does not pretend to be exhaustive, but is reliable in the information that it gives.

A Synopsis of Surgery. By R. F. Tobin, F.R.C.S.I., Surgeon to St. Vincent's Hospital, Dublin. London: J. & A. Churchill. Dublin: Fannin & Co., Ltd. New York: W. McGee. 1898.

This book, which is well bound but very poorly printed, is very attractive. It consists of leaflets which contain a synopsis of the lectures on surgery delivered by the author to his clinical class at St. Vincent's Hospital. It is an interleaved edition and must be of considerable value to the student who attends the author's lectures. Each subject is defined and a brief synopsis given; especial weight is given to treatment. The opening lecture, on Surgery as a Profession, is, as the writer says of it, "a little old-fashioned," but it has the ring of clear, straightforward common-sense applied to an honorable profession.

Prompt Aid to the Injured. A Manual of Instruction in the Principles of Prompt Aid to the Injured, including a chapter on Hygiene and the Drill Regulations for the Hospital Corps, U. S. A. Designed for Military and Civil use. By Alvah H. Doty, M.D., Health Officer of the Port of New York, late Major and Surgeon, Ninth Regiment, N. G. S. N. Y., late Attending Surgeon to Bellevue Hospital Dispensary, New York. Second edition, revised and enlarged. New York: D. Appleton & Co. 1898.

All things considered, Dr. Doty's book is the best work for the laity on Prompt Aid to the Injured. It is an open question how judicious it is to furnish information such as is given to the laity. We ourselves question whether as complete a knowledge of anatomy as is presented in this little work is necessary or advisable. The chapter on Hygiene, which has recently been added in the second edition, is a capital one, but it is to be regretted that a chapter on Nursing was not added instead of so complete an exposition of anatomy. The chapter on the Transportation of the Wounded is interesting, and the drill regulations for the Hospital Corps of the United States Army are incorporated into the book.

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MODERN GUNSHOT WOUNDS AND THE SPANISH-AMERICAN WAR.

The surgical history of the Spanish-American War has been awaited with interest owing to the light which it was expected would be thrown by it upon the effects of the modern small-calibre bullet, the application of asepsis to military surgery, the utility of field and base hospitals and the part which should be played by each in the care of the wounded, and other problems of the greatest interest to military surgeons. Some of the first substantial contributions to the surgical history of the war were made at a largely attended joint meeting of the Medical Society of the District of Columbia and the Anthropological Society of Washington, D. C., which was held in that city on April 26th, the occasion being a symposium on modern gunshot wounds, especially in their relation to the Spanish-American War.

The first paper read was one by Dr. Kober, of Washington, who gave an excellent presentation of the history of small arms, together with the conclusions reached by experimental investigators, prior to 1898, with reference to the probable effects of the small-calibre, steel-jacketed bullet. He was followed by Major LaGarde, surgeon United States Army, who in 1893 had conducted experiments for the Government with reference to the destructive powers of the Krag-Jorgensen rifle and who had been in command of the Reserve Hospital at Siboney, in which the wounded of the Santiago campaign were ultimately received. His paper was devoted to a discussion of the conclusions accepted by military surgeons prior to the war as compared with his personal experience in Cuba. The third paper was by Captain Borden, assistant surgeon United States Army, who during the war was on duty at the United States Hospital at Key West, to which institution the wounded of the navy and a considerable number of army wounded were sent for treatment. His remarks were necessarily confined to the later wound manifestations, suppuration and to a study of the lesions as determined by the Röntgen ray. The last speaker was Captain

Munson, assistant surgeon United States Army, who had general surgical service at Santiago, both on shore and on hospital ships. His remarks were in the nature of a discussion of the theoretical propositions, quoted in the paper by Dr. Kober, as compared with his personal experience. During the evening a number of old forms of firearms, extracted bullets and photographic plates were exhibited. The evening was concluded with a stereopticon exhibition by Dr. Gray, of the Army Medical Museum, illustrating conditions disclosed by the Röntgen ray, such as fractures and lodged bullets, and also showing the equipment and work of the army hospital ships and the military hospitals in Cuba and the Philippines.

At this meeting the subject of wounds by the modern small-calibre rifle was discussed from nearly every standpoint, and the following conclusions appeared to be reached:

(1) That "open order" formation and the use of hasty entrenchments are the chief factors in the prevention of casualties to the combatants proportionate to the great modern improvements in firearms.

(2) That the anticipated "explosive effect" of the modern bullet was found to be extremely rare in modern warfare, even when wounds were incurred at ranges theoretically most favorable for the maximum destructive action.

(3) That wounds by the small-calibre bullet are accompanied by but slight "shock" to the individual injured.

(4) That the ratio of killed to wounded depended entirely upon the question as to whether a vital point was, or was not, struck.

(5) That the small frontage of the modern bullet caused wounds of soft tissue which were almost subcutaneous in their nature and which hence healed rapidly and kindly.

(6) That primary hemorrhage was extremely rare, the vessels appearing to be pressed aside rather than cut by the projectile.

(7) That the number of compound fractures was proportionately small and that extensive comminution of the long bones was uncommon.

(8) That lesions of the joints were of no great severity and uniformly presented excellent results by simple immobilization without operation.

(9) That laparotomy in the field is not justifiable except in rare instances.

(10) That perforating wounds of the brain, lung or abdominal viscera, if not immediately fatal, were recovered from, without operation, in a large number of instances.

(11) That major operations were not called for, 96.78 per cent. of the 1,581 wounded requiring only trivial operative treatment, if any.

(12) That a surprisingly large number of Mauser bullets lodged in the tissues — in the battle of Las Guasimas no less than 18.1 per cent.

(13) That the hard mantled bullet rarely disintegrates on impact with human tissues.

(14) That portions of clothing or equipment are rarely carried by the projectile into the wound.

(15) That the modern bullet of hard exterior and small calibre, as compared with the old lead bullet, is more humane, rarely permanently crippling such as may be struck and are not killed outright.

(16) That the few instances of wounds by shrapnel or bullets of large calibre would seem to show that the much higher mortality of former wars was probably due rather to the non-application of the rules of antisepsis than to the more destructive character of the larger missiles employed.

(17) That the subsequent mortality among such wounded as ever reached a hospital was almost entirely a question of the application of the principles of antisepsis to the wound and its vicinity.

(18) That asepsis in operation is difficult to obtain in field hospitals during the rush of work incident to a battle.

(19) That operation in the field hospital is usually inadvisable except when imperatively demanded to save life.

(20) That the location, at suitable accessible points, of thoroughly equipped base hospitals, where conditions of asepsis can readily be maintained, is of great importance.

(21) That antisepsis, even more than the modern humane missile, has alleviated the horrors of modern wars.

The rarity of the explosive effect of the modern projectile and the efficiency of antiseptic methods in the treatment of bullet wounds are among the most gratifying facts brought out by this valuable discussion.

THE RELATIONS EXISTING BETWEEN DRUGS AND THE STOMACH.[1]

It is seldom that a drug becomes inactive in the stomach, though this is the case with pancreatic preparations and those alkaline substances which as such are expected to work upon the intestine. The action of the stomach toward the absorption of drugs is much more important. The experiments of the last few years show that this is almost *nil*, the stomach's task being confined to a greater or less digestion of its contents and the expulsion of the same into the intestine. Sugar and peptones in five-per-cent. solution, sodium iodide in one-per cent. solution, and even water, pass unchanged through the pylorus. Therefore we must remember that medicines, likewise, are not taken up by the system till they leave the stomach. The question of the absorption of a drug is thus simplified and depends upon the celerity with which it reaches the intestine. Here we know that absorption goes on rapidly.

Can we now hasten the passage of a drug through the stomach, or, in other words, hasten absorption? Water and neutral solutions leave the stomach most quickly. Half a litre of water leaves the stomach in one-half or three-quarters of an hour and a glass of water in about half that time. Acid solutions, soups, milk, beer, and, notably, oil, pass onward much more slowly, and perhaps for the reason that they stimulate the gastric secretion. Where this is done, digestion is prolonged. In quite the same way water taken with food requires more time to reach the pylorus than it would when taken by itself; therefore drugs leave the stomach and consequently are most quickly absorbed when given with plain water, less rapidly in soups or milk, more slowly when after a meal, and most slowly when given without fluid after a meal. These conclusions Moritz proved by experiments with sodium salicylate, potassium iodide and charcoal. In this way we can explain the quicker action of alcohol on an empty stomach than when taken with a meal. It is not from the rapidity of absorption of the alcohol in the stomach, but on account of the rapidity with which it reaches the duodenum, and from there the circulation.

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[1] Moritz: Münch. med. Woch., 1898, November.

We can avoid irritation of the stomach by drugs by means of subcutaneous and rectal injections. This is not wholly satisfactory, as in the case of morphine, which, though injected under the skin, is excreted through the stomach, and can then work harmfully on the digestion. Another means is by the administration of substances insoluble in the stomach, but decomposed by the pancreatic juice into soluble products. Such, for instance, are the salol bodies and the combinations of tannin with albumin. Still another means is to enclose our medicaments in pills or capsules capable of passing unharmed through the stomach, as the glutoid capsules recommended by Sahli. But these methods will not wholly suffice, and we must come back to the facts stated at the outset. A drug will irritate the stomach less the more quickly it leaves it and the more it is diluted. This is attained by giving the drug with water on an empty stomach.

Mucilaginous vehicles for drugs are good, because the HCl secretion is less when they are so given. Naturally they do not leave the stomach so quickly, but this is more than made up by the protective working of the mixture.

If the motility of the stomach is at fault, then all our conclusions must be changed. Tappeiner has shown this in a pretty experiment. Watery solutions of chloral will narcotize a dog when given by the mouth, but are inactive if the pylorus is shut off from the remainder of the organ. It is interesting that the chloral becomes active again if later alcohol is introduced into the stomach. Alcohol therefore favors absorption. V. Mering and Brandl have confirmed this work of Tappeiner and the latter has shown that salt, peppermint, pepper, and orexine have a similar power.

An institute for tropic hygiene, treatment of tropic disease, etc., is to be organized in Berlin at once. Professor Kohlstock is mentioned as the probable superintendent.

MEDICAL NOTES.

Dr. Senn for Governor. — The friends of Dr. Nicholas Senn, professor of surgery in Rush Medical College, have announced his name as a candidate for the Republican nomination for Governor of Illinois in 1900.

Officers of Pennsylvania Society for the Prevention of Tuberculosis. — The following officers of this Society were elected, April 26, 1899: Guy Hinsdale, M.D., President; A. H. Davisson, M.D., Secretary.

First Aid to Wounded in Battle. — A board of army medical officers has been appointed to meet at Washington to inquire into the methods and practical results of present methods of instruction in rendering first aid to the sick and wounded.

A Government Sanitarium for Consumptives. — The abandoned military reservation of Fort Stanton, New Mexico, has been transferred from the control of the War Department and will be utilized as a government sanitarium for consumptives, under the control of the Marine-Hospital Service.

Recruits to be Vaccinated. — By order of General Miles all accepted recruits not already protected will be vaccinated before leaving a recruiting station for a rendezvous, regiment or post. This will apply also to recruits enlisted at military posts or camps. Vaccine virus will be supplied by the Surgeon-General of the Army. The compensation for vaccination of a recruit by a civilian physician not in government service is fixed at fifty cents.

The Third International Congress of Obstetrics and Gynecology. — The Third International Congress for Gynecology and Obstetrics is to take place at Amsterdam, from the 8th to the 12th of August, 1899. The questions for discussion will be the following: (1) The surgical treatment of fibromyoma; (2) the relative value of antisepsis and improved technic for the actual results in gynecological surgery; (3) the influence of posture on the form and dimensions of the pelvis; (4) the indication for Cæsarean section compared to that for symphyseotomy, craniotomy and premature induction of labor. Doyen, Howard Kelly and Schauta will report on first question; Bumm, Richelot and Lawson Tait the second; Bonaire, Pinzani and Walcher the third, and Leopold, Pinard, Pestalozza and Fancourt Barnes the fourth.

Return of Bodies from Cuba. — Supervising Surgeon General Wyman, of the Marine-Hospital Service, has protested against the return from Cuba and Porto Rico to this country of additional remains of soldiers buried on those islands. The matter was carried to the President, who has directed that the transport *Crook* bring home only bodies where death was not due to yellow fever. The interment will be in the National Cemetery at Arlington, near Washington, and relatives and friends will not be permitted to claim bodies until next winter. Surgeon-General Wyman has also entered a protest against a public funeral, but the President has decided, in view of the extensive precautions taken, including the use of specially constructed hermetically sealed coffins, that such a ceremony will not be a menace to the health of the community. More than five hundred bodies yet remain to be transported to this country, three hundred of them at Santiago. In spite of apprehensions that the shipment of remains could be productive of disease, the expected has not happened, and even the party in charge of the exhumation and preparation of the bodies, although largely composed of Americans, has enjoyed excellent health throughout their work. It should be understood that the processes of decomposition are so extremely rapid in the tropics that of the uncoffined dead buried less than a year ago but little now remains except the bony structures.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, May 3, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 35, scarlet fever 41, measles 108, typhoid fever 5, small-pox 5.

Meeting of Association of Boards of Health. — At a meeting of the Massachusetts Association of Boards of Health recently held Dr. Hibbert W. Hill, of the Health Department Laboratory, read a paper on diphtheria, and Dr. Mark W. Richardson one on certain relations of typhoid fever to public health.

A Death from Small-pox in Boston. — Harriet McCurry, who was removed to the small-pox hospital on Gallop's Island April 21st, died Monday afternoon. This is the first fatal case that has been reported since 1894, when there was a severe epidemic of small-pox in Boston.

Suffolk District Medical Society. — The Censors of the Suffolk District Medical Society, officiating for the Society at large, will meet to examine candidates for admission to the Massachusetts Medical Society, at 19 Boylston Place, on Thursday, May 11, 1899, at 2 P. M. Candidates should make personal application to Dr. H. A. Lothrop, 10 Marlborough Street, and present their medical diploma, or its equivalent, at least three days before examination. John Dane, M.D., Secretary, 29 Marlborough Street.

Two Centenarians. — Gardner Upham, of Windham, Vermont, is reported to be one hundred and one years old. He is the oldest man in Southern Vermont. Miss Mary Spooner is stated to have died recently at the age of one hundred and five. She was a resident of Acushnet, Mass., and is said to have lived under the administration of every president of the United States.

NEW YORK.

A new Floating Hospital. — The launching of the second St. John Hospital will take place on the Brooklyn side of the East River, on May 4th. This new floating hospital, which is to be in service during the coming summer, in addition to the one so long in use, will cost $32,000, which has been generously contributed by Mrs. A. D. Juilliard.

Enlargement of Pavilion for Insane at Bellevue. — Work has been begun on the enlargement of the pavilion for the insane at Bellevue Hospital, including the addition of another story. The cost of the improvements will be about $30,000.

Meeting of Medical and Legal Relief Society. — The members of the new Medical and Legal Relief Society held their first public meeting at the Waldorf-Astoria on April 17th. The securing of uniform divorce laws in the United States was the subject discussed.

An Act to Improve Public Health. — Both houses of the Legislature have passed the bill entitled "An Act to improve the public health of the city of New York by the cultivation of trees and vegetation in the streets thereof." The bill is designed to extend the jurisdiction of the Department of Parks so as to provide for the planting and cultivation of trees and shrubbery in any or all of the streets of the greater city, and while it was pending at Albany the Medical Society of the County of New York sent a memorial favoring its enactment, in which it was urged that the cultivation of an adequate number of trees in the streets was one of the most effective measures for mitigating the intense heat of the summer months, and thus diminishing the high death-rate among young children.

Bills of Medical Interest. — Among the bills recently passed by the State Senate are the following: Allowing cities of the first class to establish and maintain, outside of their corporate limits, and with the approval of the State Board of Health, hospitals for the regular treatment of pulmonary tuberculosis. Appropriating $72,000 for repairs and improvements to the Dannemara State Hospital for the Insane. Consolidating the Italian Hospital of New York City with the Columbus Hospital. Amending the labor law so as to prohibit the employment of any female or any boy under eighteen years of age in operating, polishing, or buffing wheels.

A Centenarian. — Mrs. Eliza Stannard died in Brooklyn, April 21st, at the age of one hundred and one years, lacking one day. She was born in Massachusetts, on April 21, 1798.

Treatment of Rabies by the New York Health Board. — During the past year, according to the *Medical Record*, fifteen persons bitten by supposedly mad dogs received preventive inoculations, after the Pasteur method, from the physician of the New York Board of Health.

New Building for the Board of Health. — Much gratification is expressed at the action of the Sinking Fund Commission in authorizing the lease for a long term of a separate building, well adapted for the purposes designed, for the use of the Board of Health. For many years the Board occupied for its offices a portion of the Police Department Building fronting on Mott and Mulberry Streets, and more recently has had its quarters still farther down town, in the Criminal Court Building, adjoining the Tombs Prison, on Centre Street. The judges and other officials of the courts objected very strongly to the location of the Health Department there, and have always begrudged its occupancy; so that much relief will now, no doubt, be felt by the legal fraternity. The building that has just been secured for the Department is the one occupied until recently by the New York Athletic Club, standing at the corner of Sixth Avenue and Fifty-fifth Street, and is a large and commodious structure.

Appointment of J. L. Wortman, M.D. — Dr. J. L. Wortman, of the American Museum of Natural History, has been appointed by the Corporation of Yale University the successor of the late Othniel C. Marsh, as professor of paleontology and curator of the scientific collections in the Peabody Museum. Dr. Wortman is a native of Oregon, and was graduated from the University of that State in 1876. In 1884 he was appointed anatomist in the United States Army Medical Museum in Washington, and in 1887 was graduated in medicine from the Columbian Medical School of that city. For the following three years he was demonstrator of anatomy in the Georgetown Medical School, and in 1891 he came to New York as assistant curator of vertebrate paleontology in the American Museum of Natural History, since which time he has been engaged in making the fine collection of vertebrate fossils now on exhibition in this institution.

Recent Bequests to Hospitals. — A number of bequests has lately been made to hospitals. The widow of Eugene Kelly, the banker, left $10,000 to St. Vincent's Hospital. Charles E. Tilford, of the firm of Park & Tilford, left a large part of his estate, valued at over a million dollars, to be divided among the Presbyterian, Mount Sinai and Flower Hospitals, St. John's Guild, the Home for Incurables, and the Children's Aid Society. Mrs Charles E. Hollister left over $100,000 to various charities, $5,000 each being given to St. Luke's Hospital, the Woman's Hospital, St. Mary's Free Hospital for Children, and the Home for Incurables, for the foundation of free beds. Mrs. Harriet B. Smedberg left $5,000 for a free bed, in memory of her son, at St. Luke's Hospital.

The Trained Nurses' Aid Society. — The Trained Nurses' United Aid Society of America, one of whose Board of Managers is Dr. Clement Cleveland, held its first meeting on April 28th. The objects of the organization are similar to those of physicians' mutual aid societies, and include the relief of members detained from duty on account of illness or accident, and the payment of a funeral benefit in case of death. All properly accredited nurses under fifty years of age are eligible to membership, the monthly dues varying from forty to eighty cents, according to the age of the applicant.

Cornell will get the Loomis Laboratory — Coroners' Juries Abolished. — The governor has signed the bill just passed by the Legislature which authorizes the Trustees of the Loomis Laboratory to transfer its real estate to any educational institution which they may select. The New York University naturally opposed the bill, as it enables the trustees to hand over the property to Cornell. The governor has also signed the bill abolishing coroners' juries in all the counties of the State except Erie and the counties included in the city of New York.

The new Lying-in Hospital. — Work is to be begun at once on the new building of the Lying-in Hospital of the city of New York, on Second Avenue, at Stuyvesant Square, for which J. Pierpont Morgan has given one million dollars. The endowment fund to be raised by the trustees, on which the gift was conditional, has now been secured, and it is also announced that Mr. Morgan has made an additional contribution in the shape of two city lots on 18th Street, so that the new building, fronting on Second Avenue, will extend through from 17th Street to 18th Street. It will be constructed of limestone and brick, with a steel frame, and will be ten stories high.

Prof. Charles I. Chandler Honored. — Prof. Charles I. Chandler, of the School of Mines of Columbia College, the former president of the Board of Health, and for twenty-five years professor of chemistry in the College of Physicians and Surgeons, enjoys the distinction of being the first American to be chosen for the presidency of a British scientific society, this honor having been conferred upon him by the Society of Chemical Industry at its session just held at Glasgow.

Miscellany.

LABORATORY COMMITTEE, AMERICAN PUBLIC HEALTH ASSOCIATION.

We publish herewith a preliminary notice of the Laboratory Committee, American Public Health Association.

At the meeting of the American Public Health Association in September, 1898, it was decided to organize a standing committee of the Association composed of those actively engaged in laboratory work in connection with health boards.

During the past few years the chief development in sanitary science has been in connection with laboratory work, especially bacteriological, so that every health board of importance now requires a special laboratory staff.

Thus within a few years the number of laboratory men actively engaged in hygienic work and research has increased a hundred-fold. The necessity of some central organization which could further the development of sanitary laboratory work in both scientific and practical directions seems very obvious, and it would be of the utmost value to health boards if arrangements could be made by which their laboratory representatives could meet with those of other boards. It is hoped that as many as possible of the sanitary laboratories on this continent will be represented on the Laboratory Committee by some one who will be able to attend the meetings of the Association.

The American Public Health Association has, by its work in the past, not only laid claim to be our central sanitary body as far as organization is concerned, but the work already done under its auspices in connection with the standardizing of methods of disinfection and methods of bacteriological investigation is a fine example of what may be accomplished by co-operative means.

The intention of the Laboratory Committee is not to overlap or interfere with the work of other committees, but as far as possible to help them in their work, and it is desirable that members of other committees engaged in laboratory work should be regarded as *ex officio* members of the Laboratory Committee.

The first general session of the committee will be held October 30, 1899. Professor Welch, of Baltimore, will be honorary chairman.

Those engaged in laboratory work bearing upon hygiene are eligible as members. Those wishing to become members should address the chairman, Dr. Wyatt Johnson, 74 Shuter Street, Montreal. The Association has, as yet, a limited but representative membership.

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Correspondence.

[Special Correspondence.]

LETTER FROM ALGIERS.

Algiers, March, 1899.

Mr. Editor:—If it be true that the looker-on sees the most of the game, it may be that the traveller and the idle sojourner within the gates get some fresher impressions than the resident, and see some things which the other has ceased to remark. Encouraged by this reflection I yield, somewhat reluctantly, to your desire that I give you my impressions of Algiers, and other points in North Africa, as a resort for seekers after health and for climate chasers.

I had every reason to be favorably disposed towards any surroundings other than those left behind. The big Hamburg liner *Augusta Victoria* bore us from New York at the end of January, just in time to run before and to escape the first of the succession of great blizzards which burst over our very meteorological continent this extravagant winter. There were indications during the first days of our southerly passage that the devil was to pay behind us, but we only had the full facts and details of the frigid drama in the telegraphic columns of the Paris *New York Herald* — where they probably lost nothing in picturesqueness — when sitting under orange and lemon trees with roses blooming in the open air and the thermometer marking 82° F.

Our first stop was at Madeira, which, notwithstanding its great natural beauties, struck me as too dull a place, with too moist and heavy an insular atmosphere, for the average invalid. From there the course was to Gibraltar and then to Algiers, where I have been about four weeks, and have also been to Constantine, Tunis, and the sacred city of Kerouan — next to Mecca in the hearts of the faithful Mohammedans. One thing has impressed me from the first to the last of my six weeks here and wherever I have been, the weather was almost always "exceptional." And in that respect, as a New Englander, or certainly as a denizen of the region bordering on Massachusetts Bay, I felt quite at home with my *circumfusa*.

The first ten days in Algiers, the early part of February, were successively full of sunshine, there was no rain, and the thermometer ranged from 79° F. to 82° F. in the shade daily about noon. But this was due to a sirocco or south wind from the Sahara, which prevailed steadily during that time. I could not recall five consecutive bright, sunny days in my own country during the previous disagreeable twelve months, and naturally congratulated myself secretly and others ostentatiously on the beauty of the weather. But an Englishman, an old resident, interested in the vine culture and the making of wine, cut me short with: "You call this weather beautiful, I call it beastly — beastly, that's what I call it. It's forcing my vines, and we shall pay for it with a frost, and be ruined. It's exceptional." And I recalled the telegrams which issue from our western agricultural States in April and May and from New Jersey peach orchards later, and Florida and California orange groves earlier, and began to wish the weather were less "beautiful" and less "exceptional."

My vini-cultural and experienced friend was right; the weather broke; the town was filled with little whirlwinds of dust. Then came, if not a frost, at least "a nipping and an eager air"; the neighboring mountains across the bay were covered with snow; the railway trains between Algiers and Constantine, in the mountains, were blocked in snow. From that time the weather was variable and uncertain, and continued so all over North Africa for several weeks.

In the town of Algiers and in the streets of Mustapha, the residential suburb, there is at times a good deal of wind and much dust. But this is escaped back in the hills, where the villas are and where almost any exposure may be secured. A compatriot, who has sought climates for his health almost everywhere from California to Ceylon, and who has now lived for some years among the hills just back of Algiers, in a most attractive and comfortable modernized Moorish villa, assures me that he considers it the best climate with which he is acquainted. A medical practitioner, who is now very vigorous and active, tells me he went there years ago quite crippled with rheumatism, from which he is now almost free.

On the other hand, an English army officer who knows the littoral of the Mediterranean well, who had been a preceding winter in Algiers, was sent back by his London medical adviser on account of rheumatism and was ordered to go on to Biskra in the desert to the south if not improving in Algiers, told me he was not as well, either in Algiers or at Biskra, as at Tunis, which certainly has a more windy, damper, less agreeable climate than either of the others. A good many people now go to Biskra, an oasis in the Sahara two days by rail from Algiers, from curiosity, and others are sent there for health by London practitioners, on account of the dryness and equability of the air and temperature. It very rarely rains there, but I am inclined to think the absence of rain is in a measure offset by the very heavy night dews. The journey is a long and tiresome one and the food is not good.

Algiers has not been in favor this winter with English and Americans, who have flocked to Cairo and Egypt. The political tension between France and England in the autumn and early winter is partly responsible for this, and perhaps still more the foolishness of the *Chauvinist* French element among the Algeriens themselves. This part of the population has been indulging in Jew-baiting. Under the lead of a fantastic young lawyer, one Max Regis, whom they elected mayor, these stupid partisans have stirred up riots, destroyed some of the property and threatened the lives of the Jews — an echo of the Paris performances. Strangers and invalids naturally avoid such scenes. Another factor which has turned the Anglo-Saxon from Algiers has been the extravagant raising by the French of the port dues. This has made the touching of passenger steamers other than French almost prohibitory. It is, however, I am told, in the way of being modified. The "open door" is not viewed with favor by the Frenchman.

The seeker for health and pleasure can do a worse thing than to leave our shores in November, December or January by the southern passage for the southern coast of the Mediterranean, and return home in the spring by the northern coast of the Mediterranean and the southern or northern passage. He will see, with little fatigue, a great variety of cities, of men, of manners, and will have as much climatic satisfaction as can be had from a notoriously fickle mistress.

Algiers itself has much to recommend it as a winter residence. The view from the town and from the hills above the town is superb and never wearies; the drives and walks are delightful; carriages and horses are good and cheap; the market is good; there is enough pleasant society to prevent stagnation and not so much gayety as to be a dangerous temptation; there is an excellent English Club, and a golf-links with an outlook which alone is worth more than the price of admission.

The Romans knew well and appreciated their North Africa, and the remains of their occupation lie thickly strewn everywhere — a most interesting study for the archæologist. A matter of more modern interest is the gradual absorption of the whole region from Egypt to Morocco by England and France. He who is interested in the future rather than in the past or the present may speculate on the destiny of Morocco!

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[Special Correspondence.]

SANITARY CONDITIONS AT MATANZAS, SANTIAGO, AND OTHER CUBAN CITIES.

Matanzas, April 10, 1899.

Mr. Editor: — Matanzas, a miniature Havana, has an ideal location on the slope which rises to a considerable height above Matanzas Bay, and is divided into three nearly equal portions by the Yumuri and San Juan Rivers — streams of beautifully clear water, which are navigable for vessels of small draught for some distance above the city. This division of the town has prevented to a great extent the compact construction so characteristic of all Spanish-American cities and gives excellent opportunity for perflation by the strong breezes which blow almost constantly from the Gulf during the daytime. The surface drainage is admirable, the soil is porous and retains no moisture, and the site as a whole is high — although a small part of the town is necessarily on the low ground along the water front. Matanzas should not be an unhealthful city, and, when compared with other Cuban ports, it is not. I am told that during the three and a half months of occupancy by our troops not a single death has as yet occurred in the brigade encamped here. The town is of course thoroughly infected with yellow fever, and three cases, originating in widely different localities, were reported the day of my arrival as occurring among the native population. During 1898 it is estimated that about 250 cases of yellow fever occurred in the town and garrison — with a total population of about 60,000. At this time, however, the Spanish troops had largely become immunized to the affection, and no such small proportion of cases among our more susceptible troops can be reasonably expected. The United States troops are camped some distance outside the city and communication between the camps and city is discouraged as far as possible by the military authorities.

As in Havana, the streets are extremely clean — superfluously clean, in fact. It seems to me that much of this street-cleaning energy might be much more profitably turned to account in the removal of concealed but far more concentrated and dangerous filth. The cleanliness of the streets is no doubt of great sanitary value, but, in the presence of matters of far more practical sanitary importance, the religious care with which street cleaning is carried on reminds one of a man who wears a clean collar on a soiled shirt. The system of garbage removal at Matanzas is understood to be efficient. Collections are made daily, the refuse towed to sea on barges and shovelled overboard. The method as at present carried out, while effective, is slow and laborious, and the medical officer in charge appears to be unable to convince the Quartermaster's Department of the desirability and ultimate economy of special dumping barges. A careful house-to-house inspection has been carried out, and a general superficial cleansing of their premises, under police supervision, has been required of householders. Of the most glaring sanitary faults a few have been remedied, but the cesspools, which should be the main object of attack, are as yet practically untouched. The medical officer at Matanzas is most competent and enthusiastic, but his value is largely curtailed by outside authority. The delay in matters here appears to be due, first, to the fact that orders from Havana will only permit the local expenditure of a sum quite inadequate for the remedying of existing conditions; second, to an extraordinary delay in supplying odorless excavators, and, third, to the perfection of a general plan of sewerage for the city. Matanzas affords another illustration of the fact that a medical officer responsible for the sanitation of a city should not be hampered by persons who, from the nature of things, must know much less about such matters than he does himself. It is unfortunate also for Matanzas that a greater portion of its customs receipts cannot be devoted to its own sanitary regeneration. At present a sanitary force of about two hundred men is employed — a number but little greater than that required to meet the daily sanitary needs of the town.

There is no general sewerage system in Matanzas, although a few illy planned and worse constructed private mains empty into the bay or rivers, and it is quite doubtful whether, in the absence of proper water carriage, any attempt to abolish the privy-pit system can be entirely successful. As a temporary measure, the earth-closet system is suggested, and will probably be given a trial in a small portion of the city before its general use is advised, but even if the cesspools must be retained for a short time longer their frequent evacuation and disinfection will do much toward improving the sanitary condition of the city. The sewering of the city should be an easy matter, although the out-cropping coral rock may require considerable blasting.

Cienfuegos, on the south coast, I found a hot, dusty and uninteresting little town, not at all worthy of the wonderfully beautiful harbor upon which it is situated. Settled by refugees from Haiti during its servile insurrection, Cienfuegos is modern when compared with other Cuban cities, but, nevertheless, it presents the same gross characteristics and unsanitary conditions which distinguish them all. The streets are largely unpaved and hence are rough and dusty. But little appears to have been done to the town in a sanitary way, largely for the reasons given with reference to Matanzas.

The volunteer medical officer in charge here showed me some extremely interesting curves illustrating the effect of the reconcentration policy and the later distribution of food by the United States upon the mortality of the city. While only a small number of deaths from starvation actually occurred in Cienfuegos, the curves well showed the marked effect which insufficiency of food has in so reducing the resistive powers as to render the masses easy victims to intercurrent affections. Except venereal disease there is but little sickness at present among the United States troops here. Some few of the troops show a slight tendency toward alcoholism. This is quite in contrast to the natives themselves, who use liquor freely but never to the point of intoxication. In a country where excellent rum can be bought at the rate of a Spanish dollar a gallon I have yet to see, in three visits, a drunken Cuban.

At Santiago the many great improvements in the sanitary conditions have all been so fully touched upon by the daily papers in the United States as to render any extended description here unnecessary. Certain it is that too great credit cannot be given to General Wood for the results he has accomplished. Able, modest, determined, a careful student of the Latin character, his methods are those which other general officers in Cuba might do well to follow. With his long experience as an army surgeon, General Wood is fully fitted for the sanitary work before him, while as commanding general he has the power of executing his plans without the necessity of convincing an indifferent superior officer as to their desirability or of complaisantly waiting for the possibly tardy co-operation of another department. Santiago is clean, both superficially and below the surface. For the first dry season in years its water supply has been unfailing, owing to the tapping of new sources, and an additional pipe line is about to be put in. Throughout the city the streets have been practically remade, and I drove down to Morro and out to San Juan Hill over roads which six months ago were mere trails and which now would do credit to any city. Thorough house disinfection has been carried out, and while, perhaps, an occasional case of yellow fever may occur in the future, the disease will probably never again become epidemic in Santiago. A municipal sewer system is now being put in, merely for house drainage, as the steep slopes of the town require no provision for storm waters. The sewer pipes are being placed under the sidewalks, as to tear up the narrow streets would practically destroy business for the time being. Santiago to-day compares favorably in a sanitary sense with such Southern cities as Savannah or Charleston, and is in far better condition than are such towns as Tampa or Key West. The credit of all this is due to the medical man who has had the power to turn his professional knowledge to practical effect. General Wood is an exceptional man; but one cannot but feel that there are other medical officers who, with such opportunity, would do for other Cuban cities what has been so well done for Santiago.

A stay in Cuba impresses one with the fact that the Latin race makes haste slowly, and whatever changes are made, to be successes, must be neither too sudden nor too exacting. Tradition and custom mean much to these people and innovations are apt to be looked upon with disfavor and treated with passive opposition, if nothing worse. Without the education of the public mind to an intolerance of the conditions and habits which have made Cuban cities a standing menace to our Southern States the present expenditure of labor and energy will have but a temporary value and there will be a constant tendency toward reversal to the original conditions. The day of miracles is past and hasty critics must not expect too great results in too short a time. Sanitation requires time, money and patience, and even the United States cannot remove the filth and destroy the inbred customs of four hundred years without the lavish expenditure of these three factors. Cuba presents a fertile field for the apostles of cleanliness and personal hygiene — a subject, by the way, upon which the native mind is firmly persuaded that all "Americanos" are mildly insane. If we accept the bath-tub as the dividing line between civilized man and the savage there is certainly only a thin veneer over the Cubano-Spanish barbarian. On expressing surprise that even in the wealthiest families cleanliness in regard to the deposition and surroundings of the dejecta was almost never found, I was gravely told by a supposedly intelligent Cuban that they "were perfectly willing to go to a dirty place to do a dirty thing." This is similar to the point of view of the Cheyenne Indian who, on learning the purpose to which a well-built log latrine was devoted, was heard to contemptuously remark that "White man must think a heap of — to build a house to put it in."

The Cuban as yet fails to understand how it is that conditions under which he and his forefathers have comfortably existed, according to his standard of comfort, should so suddenly be discovered to be bad. Perhaps he is hardly to blame if in every case he fails to properly interpret our always well-meant but perhaps sometimes misguided efforts toward hygienic improvement. His ignorance and indifference must be overcome before the sanitary regeneration of Cuba can be assured; and for this our hopes must rest rather on the coming than the present generation. Great improvement has been made and will be constantly made in the future, but the magnitude of the task to which the United States has set itself can only be realized by those whose knowledge is founded on personal acquaintance with Cuban conditions and character. X.

METEOROLOGICAL RECORD

For the week ending April 22d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...16	29.80	40	48	33	51	97	74	N.E.	N.	6	16	O.	N.	.31
M..17	29.91	45	55	35	65	54	60	N.W.	N.W.	24	14	C.	C.	11
T...18	30.13	54	68	40	31	39	36	N.W.	E.	12	4	C.	C.	
W..19	30.25	48	54	41	78	72	75	E.	S.E.	14	6	C.	C.	
T...20	30.27	42	46	38	64	72	68	E.	E.	12	5	C.	O.	
F...21	30.27	45	50	40	76	42	59	N.E.	N.	10	5	O.	C.	
S...22	30.25	50	62	38	50	34	42	N.W.	S.	6	12	C.	F.	
☞	30.03		55	38			59							.42

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, April 22, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup
New York . .	3,438,899	—	—	—	—	—	—	—
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	211	64	7.52	21.62	.47	.94	1.88
Baltimore . .	506,389	203	45	8.33	15.19	1.96	1.47	.49
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	105	35	16.32	20.16	7.68	4.80	.96
Washington .	277,000	95	31	9.36	26.00	2.08	—	1.04
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	70	21	7.15	21.45	4.29	—	2.86
Nashville . .	87,754	49	11	16.32	22.44	2.01	4.08	2.04
Charleston . .	65,165	33	10	15.15	3.03	12.12	3.03	—
Worcester . .	108,240	36	14	8.31	8.31	—	—	—
Fall River . .	95,919	36	14	5.54	30.47	2.77	—	2.77
Cambridge . .	89,724	16	4	25.00	18.75	—	—	6.25
Lowell . . .	88,641	40	14	7.50	22.50	—	2.50	—
Lynn	66,703	8	2	—	25.00	—	—	—
New Bedford .	66,340	16	4	—	18.75	—	—	—
Somerville . .	61,101	17	3	—	17.64	—	—	—
Lawrence . .	57,263	15	12	40.00	6.66	—	—	26.66
Springfield . .	56,501	23	7	4.35	8.70	4.35	—	—
Holyoke . . .	43,424	12	4	8.33	16.66	8.33	—	—
Brockton . .	37,278	9	4	—	44.44	—	—	—
Salem. . . .	36,883	8	1	—	25.00	—	—	—
Malden . . .	34,613	13	3	7.69	15.38	—	—	7.69
Chelsea . . .	33,468	12	1	—	—	—	—	—
Haverhill . .	32,022	12	1	—	16.66	—	—	—
Gloucester . .	30,589	9	4	11.11	—	—	11.11	—
Newton . . .	29,716	8	2	25.00	12.50	—	—	—
Fitchburg . .	29,438	7	3	14 28	—	—	—	—
Taunton . . .	28,167	12	2	8.33	16.66	—	—	8.33
Everett . . .	25,338	10	2	—	10.00	—	—	—
Quincy . . .	23,549	4	3	25.00	—	—	—	—
Pittsfield . .	22,643	9	—	—	11.11	—	—	—
Waltham . .	21,812	3	—	—	—	—	—	—
North Adams .	20,971	10	3	—	30.00	—	—	—
Chicopee . .	17,842	4	2	—	—	—	—	—
Medford . . .	16,511	4	1	—	—	—	—	—
Newburyport .	14,915	3	—	—	—	—	—	—
Melrose . . .	14,032	4	—	—	25.00	—	—	—

Deaths reported 1,045; under five years of age 330; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 102, acute lung diseases 209, consumption 129, diarrheal diseases 25, cerebro-spinal meningitis 19, diphtheria and croup 16, typhoid fever 16, measles 12, whooping-cough 6, scarlet fever 5, erysipelas 3.

From cerebro-spinal meningitis Baltimore 6, Washington 4, Boston, Worcester, Newton and Cambridge 2 each, Nashville 1. From measles Pittsburg and Nashville 3 each, Boston 2, Baltimore, Washington, Worcester and Fitchburg 1 each. From scarlet fever Boston and Baltimore 2 each, Lowell 1. From whooping-cough Washington, Fall River, Lowell, Lawrence and Quincy 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending April 15th, the death-rate was 19.5. Deaths reported 4,267; acute diseases of the respiratory organs (London) 343, whooping-cough 126. measles 98, diphtheria 55, fever 37, scarlet fever 34, diarrhea 27, small-pox (Hull) 2.

The death-rates ranged from 11.2 in Cardiff to 28.3 in Manchester; Birmingham 24.0, Bradford 17.0, Bristol 17.2, Gateshead 21.5, Hull 19.1, Leeds 16.6, Liverpool 24.7, London 18.6, Newcastle-on-Tyne 17.3, Nottingham 18.5, Portsmouth 18 0, Salford 21.5, Sheffield 17.0, Sunderland 22.6, Swansea 18.1, West Ham 13.0, Wolverhampton 26.4.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 29, 1899.

G. H. BARBER, passed assistant surgeon, R. C. HOLCOMB, assistant surgeon, detached from the Naval Academy, May 1st, and ordered to the "Monongahela."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING APRIL 27, 1899.

BAILHACHE, PRESTON H., surgeon. Granted leave of absence for thirty days on account of sickness. April 24, 1899.

WHEELER, W. A., surgeon. Granted leave of absence for twenty-seven days from June 4, 1899. April 21, 1899.

BANKS, C. E., surgeon. To proceed to Vineyard Haven, Mass., New York, N. Y., and Baltimore, Md., as inspector. April 27, 1899.

PETTUS, W. J., passed assistant surgeon. To report to Chairman of Board of Examiners at Washington, D. C., on May 16, 1899, for examination to determine fitness for promotion. April 27, 1899.

MAGRUDER, G. M., passed assistant surgeon. To report to Chairman of Board of Examiners at Washington, D. C., on May 16, 1899, for examination to determine fitness for promotion. April 27, 1899.

KINYOUN, J. J., passed assistant surgeon. To report to Chairman of Board of Examiners at Washington, D. C., on May 16, 1899, for examination to determine fitness for promotion. April 27, 1899. Relieved from duty as director of the Hygienic Laboratory, Washington, D. C., and directed to proceed, not later than June 1, 1899, to the San Francisco, Cal., Quarantine Station and assume command. April 27, 1899.

WERTENBAKER, C. P., passed assistant surgeon. To report to the Governor of Virginia for special temporary duty. April 21, 1899.

PERRY, J. C., passed assistant surgeon. To assume temporary command of the Service at Port Townsend, Wash., during the absence of Passed Assistant Surgeon C. H. GARDNER. April 24, 1899.

ROSENAU, M. J., passed assistant surgeon. Upon being relieved from duty at Santiago, Cuba, to proceed to Washington, D. C., and assume charge of the Hygienic Laboratory as director. April 27, 1899.

EAGER, J. M., passed assistant surgeon. To proceed to Evansville, Ind., and Cincinnati, O., as inspector, and to Louisville, Ky., as inspector of unserviceable property. April 22, 1899.

BARKER, H. B., assistant surgeon. To proceed to Santiago, Cuba, and report to Passed Assistant Surgeon M. J. ROSENAU, for duty. April 24, 1899.

FOSTER, M. H., assistant surgeon. To proceed to the Brunswick, Ga., Quarantine Station for special temporary duty. April 27, 1899.

LUMSDEN, L. L., assistant surgeon. Relieved from duty as sanitary inspector on the U. S. transport "Logan," and directed to report to the medical officer in charge of the Savannah Quarantine Station for temporary duty. April 22, 1899. To report at Washington, D. C., *en route* for Seattle, Wash. April 25, 1899.

RAMUS, CARL, assistant surgeon. To proceed to Norfolk and Portsmouth, Va , for special temporary duty. April 26, 1899.

BOARD CONVENED.

Board convened to meet at Washington, D. C., Tuesday, May 16, 1899, at 10 o'clock A. M., for the examination of passed assistant surgeons to determine their fitness for promotion to the grade of surgeon. Detail for the Board: Surgeon CHAS. E. BANKS, Chairman; Surgeons J. H. WHITE and P. M. CARRINGTON, Recorder.

RESIGNATION.

WHEELER, W. A., surgeon. Resignation accepted, by direction of the President, as tendered, to take effect June 30, 1899. April 20, 1899.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — The last regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, May 8, 1899, at 8 o'clock.

Papers: Dr. John J. Thomas, "Two Cases of Injury of the Cord Resulting from Fracture of the Spine."

Dr. John L. Morse, "Renal Complications of the Acute Enteric Diseases of Childhood."

A. K. STONE, M.D., *Secretary*, 657 Boylston St.

THE SLOANE MATERNITY ALUMNI. – At the annual dinner of the Society of the Alumni of the Sloane Maternity Hospital, held at the New York Athletic Club, April 28, 1899, the following officers were elected: President, George L. Brodhead; First Vice-president, A. Ernest Gallant; Second Vice-president, Eugene Coleman Savidge; Recording Secretary, James D. Voorhees; Corresponding Secretary, Frank R. Oastler.

ANNOUNCEMENT OF EXAMINATION.

An examination for the position of house physician and surgeon in the Hale Hospital, Haverhill, Mass., will be held at the office of Dr. J. F. Croston, 83 Emerson Street, Friday, June 30th, at 10 o'clock, A. M.

The term of service is one year, beginning July 15th.

C. E. DURANT, M.D., *Secretary of Medical Staff.*

NATIONAL CONVENTION FOR REVISION OF THE PHARMACOPŒIA.

To all whom it may concern :

In accordance with instructions given by resolutions passed at the National Convention for Revision of the Pharmacopœia of the United States of America, held in Washington, A. D., 1890, I herewith give notice that a General Convention for the Revision of the Pharmacopœia of the United States of America will be held in the city of Washington, D. C., beginning on the first Wednesday in May, 1900. It is requested that the several bodies represented in the Convention of 1880 and 1890, and also such other incorporated State Medical and Pharmaceutical Associations and incorporated Colleges of Medicine and Pharmacy, as shall have been in continuous operation for at least five years immediately preceding this notice, shall each elect delegates, not exceeding three in number; and that the Surgeon-General of the Army, the Surgeon-General of the Navy and the Surgeon-General of the Marine-Hospital Service shall appoint, each, not exceeding three medical officers to attend the aforesaid Convention.

It is desired that the several medical and pharmaceutical bodies, and the Medical Departments of the Army, Navy and Marine-Hospital Services shall transmit to me the names and residences of their respective delegates so soon as said delegates shall have been appointed, so that a list of the delegates to the Convention may be published in accordance with the resolutions passed at the 1890 Convention for the Revision of the Pharmacopœia, in the newspapers and medical journals in the month of March, 1900.

Finally, it is further requested that the several medical and pharmaceutical bodies concerned, as well as the Medical Departments of the Army, Navy and Marine-Hospital Services, shall submit the present Pharmacopœia to a careful revision and that their delegates shall transmit the result of their labors to Dr. Frederick A. Castle, 51 West 58th Street, New York City, Secretary of the Committee of Revision and Publication of the U. S. Pharmacopœia, at least three months before May 2, 1900, the date fixed for the meeting of the Convention.

H. C. WOOD, President of the National Convention for Revising the U. S. Pharmacopœia, held in Washington, D. C., A. D., 1890.

University of Pennsylvania, Philadelphia, Pa., May 1, 1899.

RECENT DEATHS.

WILLIAM A. GORTON, M.D., superintendent of the Butler Hospital for the Insane at Providence, R. I., died at the Boston City Hospital, May 1st.

F. HENRY KRETZ, M.D., died on April 23d, after a brief illness. He was born in Munich, Germany, July 15, 1844, and was graduated from the University of Munich in 1869. He came to this country in 1875, and since then has practised in New York.

JOHN R. CONWAY, M.D., of New York, died on April 22d, of pneumonia. He was born in New York City and was thirty-six years of age. He was graduated from Columbia College in 1880 and the College of Physicians and Surgeons in 1883, after which he served as interne in Bellevue Hospital. He was one of the charter members of the Alumni Society of Bellevue Hospital and was visiting surgeon to the Charity Hospital on Blackwell's Island.

Original Articles.

HYSTERIA SIMULATING ACUTE VISCERAL INFLAMMATION.[1]

BY WILLIAM H. ROBEY, JR., M.D., BOSTON.

Hysteria may so accurately imitate every known form of organic disease that, as Osler says, it may "deceive the very elect." The literature contains a long list of diseases which have been simulated by hysteria or mistaken for it; not so much has been written on the simulation of acute visceral inflammation, and the importance of the subject seems to justify its continuance.

The writer recognizes hysteria as a distinct disease, dependent for its diagnosis upon at least a few of the many symptoms which characterize it. The paper does not enter into a discussion of this serious affection save from the standpoint of the differential diagnosis.

There are three classes of cases which may be considered:

(1) Hysteria pure and simple simulating organic disease, as in the misnomial, pseudo-peritonitis.

(2) Organic disease which is mistaken for hysteria, as in unrecognized brain tumor.

(3) Organic disease underlying hysteria and causative of the hysterical conditions or entirely independent of it.

All forms of local inflammation may determine the occurrence and position of hysterical symptoms; a laryngeal cartarrh may excite persistent aphonia or some exciting cause may be found in an old and temporary disability. The present general knowledge of appendicitis and peritonitis, especially if coupled with the remembrance of an attack of gastro-enteritis, may in a subject predisposed to hysteria lead to a simulation of appendicitis. Dr. C. W. Townsend has told me of a patient who consulted him on the average once in two weeks during a year because of acute pain over McBurney's point, which was immediately relieved by a careful examination and the assurance that no appendicitis existed.

Gowers explains that such symptoms which are at first merely unresisted may be afterwards welcomed, then invited, and later actually induced. When, by hearsay, and, still more, by observation, a certain symptom is definitely conceived, fear or desire makes its occurrence the more easy.

Imitated disease is, however, by no means always intentional; the patient may show a train of symptoms, totally unconscious of the clinical picture which they present as he or she might be of the simulated disease did it really exist. Despite increased knowledge of the abdominal cavity and improved methods of examination, the differential diagnosis between real and simulated pathological conditions is attended with great danger, and it is in view of this fact that the following cases are presented:

Case I. Mrs. D., thirty years old, delivered in August of a healthy male child. I saw her first two days before confinement, and learned that her pregnancy had been normal save for a pruritus for which she had been unsuccessfully treated and occasional spells of semiconsciousness in which she could hear, but was unable to speak — a sensation not altogether unpleasant. Similar sensations are not recalled either with her other children or at any other time. She is a small, refined, delicate looking woman, always nervous and emotional, but always enjoying fairly good health. She had just lost her infant son very suddenly and had worried a good deal about her financial condition. Her pruritus was not caused by vaginal discharge or concentrated urine. The vaginal mucous membrane was only slightly redder than normal, but the digital examination was so painful that the patient screamed. The pruritus gradually disappeared after a normal delivery, and the spells of semiconsciousness were not seen again. She said that she had always been free from menstrual disorders and she wished her convalescence to be conducted slowly, as she had a horror of the so-called "female diseases." This she mentioned at almost every visit. Two months later I was called to see the patient because of abdominal pain which had been increasing in severity for seven days. The onset was gradual and the character dull — not sharp and sudden at any time. There had not been the slightest nausea or vomiting, and the dejections were normal in appearance and without pain. She said that she was unable to walk well, especially when out of doors — she seemed to stumble over the smallest object; on the level floor it was a little easier, but even then her friends told her that she "waddled like a duck." The dreamy spells and pruritus had returned, added to which she now had an urticaria. She had had a cough for one week, and at the time of my visit there was a sharp pain in the right side on inspiration.

Examination. — Face flushed; temperature 101°, pulse 120; tongue slight white coat; eyes negative, heart negative.

Lungs: To-and fro friction rub (very slight) about on line with ninth interspace on the right, occasional scattered râles.

Abdomen: Very tender over all even to the lightest touch; once she cried out as if in pain while the fingers were still an inch above the skin. The tenderness more marked over the surface below and to the right of the umbilicus; no special point of tenderness; ovary not felt; no change in percussion noted from normal.

Thighs and legs tender (patient had not mentioned this fact); winces even with the slightest pinch. Patellar reflexes exaggerated; no ankle-clonus. Tactile sense diminished over right side of abdomen; question of diminution over thighs and legs. Heat sense not tried. An extreme display of modesty, not observed at previous visits. Gait very slow; every step taken with extreme caution, drawing each leg up stiffly. Rectal examination unsatisfactory, the patient squirming, crying out and digging her nails into the examining hand.

In two days the cough and pleural pain had entirely disappeared, the pulse and temperature became normal. The tenderness in the thighs and legs was almost gone, the abdominal tenderness less. The urticaria was troublesome, and only ceased after several days of limited diet and appeared again after taking a small piece of roast lamb.

Ten days later there was still only very slight general tenderness in abdomen, and the patient said she felt that she was in excellent condition.

Case II was one which came under my notice, and I am indebted to the staff of the Boston City Hospital for the clinical data.

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[1] Read before Norfolk District Medical Society, January 27, 1898.

A. D., medical student, twenty-five years old, admitted to the medical side of the hospital January 26th. Patient gave a history of appendicitis in 1891, with perityphlitic abscess rupturing into the rectum; two recurrent attacks, with freedom for two years. Habitually constipated since first attack. Patient has not felt well for three days, but worked as usual; two days ago severe chill, with evening temperature of 103.5°. Yesterday had diarrhea, with evening temperature 104°; has not slept much for three nights. To-day severe headache with pain in back and legs; abdomen very tender, especially under the costal borders. Nose bleed, throat sore and loss of voice. Slight cough; no characteristic sputa.

Physical Examination. — Strong, robust man, who has been a foot-ball player. Some redness and irritation of fauces and posterior wall of pharynx. Pulse regular, slow, good strength and volume.

Abdomen: Lax, somewhat tympanitic, and tender, as noted above.

Widal's test negative. No plasmodia found. Four days after entrance physical examination negative save for a few squeaking râles in left chest and some tenderness in right iliac fossa. Temperature ranged from normal in morning to 102° at night. Nine days after entrance physical examination negative and the patient was allowed to get up, but towards evening began to have great pain in right iliac fossa, which was unrelieved by hot fomentations. The bowels were constipated and unmoved by two enemata.

On the tenth day temperature was 101°, chill and pain, requiring frequent subcutaneous injections of morphia. On February 5th, patient when seen in consultation by the surgeons had a point of tenderness above and behind McBurney's point. The rectal examination was negative. Pulse was not higher than 65 at any time.

Laparotomy: Neither fluid nor pus, no adhesions; appendix easily found, normal in appearance. Appendix removed, as patient had requested. After operation general condition good, but each day had a paroxysm of pain of varying intensity in right side of abdomen.

February 23d. Three weeks after operation had a severe attack of pain, unrelieved by one and one-half grains of morphia in three hours. Ether to full anesthesia, with relief. Two chills to-day and one yesterday. Temperature 103°.

March 13th. Patient was discharged, but returned April 16th. With one exception, he had been free from pain, but entered again because of severe paroxysm of abdominal pain, which required morphia and ether for relief, and during his second stay in the hospital the attack and treatment were repeated nearly every day.

On April 26th he went to visit his sister, and on returning lost his way and had to inquire where the hospital was, and for three days after this seemed "mentally off." The house officer was up night after night with him. Physical examination was always negative. A description of his last attack of abdominal pain may answer for previous ones and bring the history of this case to a close.

One morning it was announced that A. D. was having an attack; he was seen thrashing about the floor of his room, writhing in pain, held by two orderlies, who made strenuous efforts to restrain him, while the house officer administered ether without the slightest relief. It seemed strange to the visiting physician that so much ether should have no effect, so he ordered a dose of asafetida. Immediately the patient got up, free from pain, and, looking very much ashamed of himself, said, "I was given that once before, in New York."

There were no more paroxysms, and in a short time the patient left the hospital and returned to his work.

There was some pus and a minute amount of blood in the urine of this patient during all this time; its origin was never explained after appendicitis was eliminated; the possibility of pyelitis was considered, but there was never enough pus and blood at any time, and after the asafetida was administered the origin of the pain was discovered.

CASE III. I am indebted to an able and careful physician of this city for the data in the following case, and it is included because it shows how misleading the clinical picture may be:

Mrs. B., thirty-seven years old, married ten years, no children. During her wedding tour had a distinct attack of hysteria, and then at intervals attacks characterized by abdominal pain and retention of urine. There was a history of some pain occasionally during the menstrual period and vague uterine and tubal trouble, for which she had been treated up to the time when she was seen in consultation by one of the most distinguished neurologists in the country, who pronounced her disease hysteria, and advised against further uterine treatment. During the previous summer a gynecologist had examined her and pronounced her pelvis to be in normal condition. On March 28th the patient went in town in the afternoon. She had to wait a long while for a car and became very tired. Shortly after her return she was taken with a sharp pain in the abdomen; when seen by her physician, an eminent neurologist, the pain was much the same as that which had characterized her attacks of hysteria, no nausea nor vomiting, no localization of pain, no tympanites; temperature normal, the pulse somewhat quickened. The case was then given to the gentleman who related it to me. Applications to the abdomen and morphia relieved the pain. Symptoms continued much the same, without a change of opinion on the neurologist's part.

April 5th. There was a bad night, requiring one-fourth grain morphia to quiet the pain; no new symptoms.

April 6th. Complaint of pain in right hypochondrium, but the patient slept the best part of the night and required no sedative.

April 8th. Very bad night, with much abdominal pain and pain about the urethra. The abdomen became swollen and tympanitic; a vaginal examination was made and the uterus found to be fixed. Even then the picture was so similar to previous attacks that the neurologist believed it still nine-tenths hysteria and one-tenth something else.

A surgeon saw the case in consultation, but finding no localized pus advised against operation. She died April 11th, and a partial autopsy revealed an abscess of the right broad ligament which had perforated into the peritoneal cavity.

Diagnosis. — Fortunately for the patient and for the physician himself, organic disease is first excluded and a diagnosis of hysteria is made only after continued observation, elimination and the grouping together of certain symptoms. This is the case if the physician meets the patient or the hysteria for the first time, but if he has treated the patient previously for hysteria he needs to be all the more on his guard lest he mistake actual pelvic disturbance because of its similarity to previous hysterical attacks.

The pain of hysteria is said to be more migratory than that from any other cause, yet it is often seen to persist in its localization, and doubtless it is aided in this by the examinations of the zealous and anxious physician; if we accept the theory that hysterical neuralgia is due to a stimulation of the pain centres rather than an ovarian neuralgia (for we recognize the pain in both sexes and in women after the ovaries have been removed), or to a myodynia, as believed by Briquet, we may expect this migratory character, but if for some reason it persists in localization with a high or rising pulse, then we have our first indication for exploration, even though the rectal or vaginal examination be negative.

Féré when he has been able to demonstrate pain in the ovary has noticed that the point of pain during pregnancy rose and rapidly descended after delivery. S. C. Gordon believes enlarged and cirrhotic ovaries to be the underlying cause of some abdominal pain and resulting hysteria, and has reported twenty-five cases where removal of the ovary or ovaries has resulted in cure.

Oöphorectomy as a cure for functional nervous disease is still a mooted point, and does not come within the scope of this paper, save where pelvic examination indicates the added possibility of pyosalpinx.

Hysterical pyrexia is, I think, much less believed in, and its discussion is of little consequence, since temperature and its variations play so small a part in the interpretation of the course of abdominal inflammation.

Case I was apparently one of hysterical abdominal pain accompanied by hysterical paraplegia, and the rapid subsidence of the symptoms alone excused more heroic treatment.

Case II seems to have been an attack of influenza in a muscular man, whose general resistance was lowered by hard work and the excitement of school and hospital examinations. The abdominal pain which accompanied the onset of influenza persisted, its localization was assisted by the patient's medical knowledge and doubtless by the careful examination of his attendants. On the chances, the two attacks which followed the perityphlitic abscess were not appendicitis, since the appendix was found in perfectly normal condition — and the patient remembered so accurately the taste of asafetida. Although the surgeons were not unanimous in the decision to operate, still it would seem that, in view of the persistence of the abdominal symptoms, laparotomy was justifiable.

In Case III the abdominal symptoms were so similar to those which both of the patient's physicians had long recognized as hysteria that they were deceived. If, in view of the persistence of the abdominal pain and tenderness, an early pelvic examination had been made, the real condition might have been discovered in time to save the patient's life.

The conclusions to be drawn from these cases are:

(1) The importance of regarding each case first as one of organic disease until proved to the contrary.

(2) With persistence in localization of pain and tenderness: (a) early rectal or vaginal examination; (b) early consultation.

(3) Laparotomy in doubtful cases. As Byron Bramwell says: "The friends of the patient will more readily forgive a laparotomy which finds the viscera in normal condition than a diagnosis of hysteria followed in a few days by death."

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POISONING DURING CHLOROFORM ANESTHESIA IN THE PRESENCE OF A NAKED FLAME.

BY KENELM WINSLOW, M.D., NEWTON, MASS.,
Surgeon to Newton Hospital.

A recent experience seems worthy of notice, not on account of its extreme rarity but rather because a similar incident might befall any practitioner, and because I believe most well-informed physicians are unaware of the reason for, or possibility of, such an occurrence. The writer apologizes for the latter statement, by admitting that until the happening of the event herein recorded he would have been included with the ignorant majority.

Some months ago I was called by a fellow practitioner — Dr. C. A. Davenport, of this city — to assist at an obstetrical operation. A nurse, under the direction of Dr. Davenport, administered chloroform to the patient, who was on a bed at one side of a rather small room (12 x 13 x 8½ feet) in which were burning three gas flames, two in the centre of the room and one most remote from the patient. In a short time all except the patient were conscious of a choking, stinging, irritating sensation in the throat and chest, resulting in incessant coughing and gasping for breath. The coughing and choking became so violent that it was utterly impossible for us to proceed with the attempted forceps delivery. We were, moreover, unable to trace the source of the trouble, and after searching unsuccessfully for evidence of escaping coal or illuminating gas were compelled to open all the windows and doors before continuing the operation. The latter was concluded under ether, not because chloroform was suspected to be the cause of the difficulty but for the reason that the manipulations necessitated prolonged anesthesia. We soon recovered from the immediate irritation of the respiratory passages and without any ultimate ill-effects.

The patient was naturally not cognizant of the casualty until told of it afterward, nor did she suffer any harm whatsoever.

Not long after, being puzzled by the affair and having it in mind, I noticed the following lines in the *New York Medical Record*,[1] in an article entitled "Notes on Anesthesia," by Emil Aronson: "It is best not to use chloroform by gaslight; the free chlorine has not only killed the patient, but in a recent case also the attending physician, and made two nurses very sick for some time."

This immediately suggested the explanation of the unpleasant experience noted above. On talking with a number of medical men I failed to meet one who was aware of any danger attending chloroform anesthesia in the presence of a flame, and on looking up the matter in the "Index Medicus," "Jahresbericht der Pharmacie," "Index Catalogue of the Surgeon-General's Office, U. S. A.," and "Sajous' Annual for 1898," I found the references given below, in addition to a few I have been able to gather elsewhere, and most of which I have consulted in the original before writing this paper. There was no reference to any article in any American medical periodical, and the only mention of the subject I have seen in one — except the few lines in the *Medical Record* quoted above — is a brief editorial in the *Therapeutic Gazette*, kindly brought to my attention by the editor, Prof. H. A. Hare. The only allusion to the matter found in any text-book is that contained in Hare's "Practical Therapeutics," wherein it is stated that "Chloroform vapor in the presence of gas flame undergoes certain changes which result in the development of noxious and irritating fumes, consisting principally of hydrochloric acid and chlorine, which produce laryngeal and bronchial irritation." In regard to the chemistry concerned with the decomposition of chloroform by flame, I find that the statements of different writers are generally conflicting as to the probable reactions involved.

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[1] February 18, 1899, p. 237.

This may be readily accounted for, since chloroform may be split into various compounds according to the temperature and other conditions to which its vapor is subjected in coming in contact with a naked flame. When chloroform is passed through a red-hot glass tube the following reaction ensues: $2\ CHCl_3 = C \equiv C + 2\ Cl - Cl + 2\ HCl$. The carbon is deposited on the tube. But exposed to the naked flame in the presence of air and products of combustion (H_2O and CO_2) a somewhat different reaction occurs, in fact apparently varying with the fancy of each medical writer. According to the recent edition of Watts's Dictionary of Chemistry, which we may consider authoritative, chloroform vapor in the presence of flame acts as follows: $2\ CHCl_3 = CHCl_2, CHCl_2 + 2\ Cl$. Then it is probable that $CHCl_2, CHCl_2$ (acetylene tetrachloride) further breaks up into hydrochloric acid, chlorine and carbon, thus: $2\ CHCl_2 = 2\ HCl + 2\ Cl + 2\ C$, as before.

Finally, Professor Bosshard (*vide* Stobwasser) has analyzed the products resulting from the passage of chloroform vapor diluted with air through a flame and finds that they are: Oxychloride of carbon ($COCl_2$); chlorine and hydrochloric acid. This result shows that some of the chloroform vapor is oxidized: $2\ CHCl_3 + O_2 = 2\ COCl_2 + 2\ HCl$.

I believe chlorine gas to be the chief resultant and toxic principle responsible for the bad effects observed in chloroform anesthesia in proximity to gas, oil or other flame, because it is most readily formed and because its characteristic odor and the clinical symptoms bear out this assumption. I have performed successfully the following simple experiments, which Prof. E. S. Wood was good enough to suggest to me, exhibiting the presence of free chlorine and hydrochloric acid when chloroform vapor comes in contact with gas-flame:

If a piece of filter-paper be moistened with a solution of potassium iodide and starch and held above a flame — which is allowed to play over an open vessel containing chloroform — the paper is immediately colored blue, because the liberated chlorine combines with potassium and sets free iodine to form blue starch iodide. Again, a strip of blue litmus-paper held above the flame will instantly turn red, through generation of hydrochloric acid, but soon becomes decolorized by the chlorine, which also renders the air irrespirable.

To turn now to the clinical side of the question, the experience of Professor Zweifel furnishes the most extended and instructive, not to say startling, evidence of the dangers attending the use of chloroform near gas flames. No series of prearranged experiments could possibly be more complete, although their author certainly does not appear to have conducted his operations with experimental intent. A number of abdominal sections were performed in an apparently ill-ventilated room under chloroform, and in the presence of three gas flames, one an Argand burner. In seven cases, out of nine, catarrhal pneumonia developed and one resulted fatally. Two of the non-affected patients were operated on during bright days, and so artificial light was not required.

Following the recited incidents Zweifel employed ether on eight patients, in the space of as many days, subjected to the same conditions and with the assistance of the same artificial light as before, yet with no untoward results. The symptoms in Zweifel's patients were, briefly, tremendous coughing, dyspnea, pain in the wounds, occasioned by the violent muscular contractions, and, in one instance, emphysema of the skin over the chest, caused presumably by rupture of alveoli in the pulmonary interlobular connective tissue and entrance of air which found its way to the root of the lung into the mediastinum, thence to the fossa jugularis, and, finally, to the subcutaneous tissue over the chest.

Dr. Mey, of the Catholic Hospital in Herne, Westphalia, reports an operation for gun-shot wound of the abdomen, lasting four hours, under the influence of chloroform and in the presence of gaslight, during which the surgeons and sisters in attendance were overcome by the decomposition-products of the anesthetic, one sister dying on the second day following the operation.

Another instance occurred during an operation for strangulated hernia, in which three ounces of chloroform were used, and one-half an ounce was spilled accidentally on the floor in a small badly-ventilated room heated by an oil-stove and lighted by an oil lamp and candle. The anesthetizer succumbed first, and all were seriously but not fatally affected with coughing, and pain in the chest, lasting for several days in the case of the operator and nurse. The patient is not reported as having suffered at all. The general symptoms in most of the reported cases are: Constant, dry, spasmodic and paroxysmal cough, which may affect the patient as well as the bystanders. In one instance it became difficult to prevent the patient from falling off the table, so violent was the coughing. There is a stinging sensation in the nostrils, a perception of a pungent odor, and a feeling of distress and oppression in the chest. Not uncommonly the patient has stridulus breathing, and heart and respiratory failure are reported. Retching and vomiting occasionally occur.

To further convince us of the danger of chloroform anesthesia in proximity to flame we have the experiments of Stobwasser conducted on rabbits and guinea-pigs exposed to air laden with varying amounts of chloroform decomposition-products. The animals were killed, and their bodies exhibited evidences of bronchopneumonia and edema of the lungs. The trachea was deeply injected, and both trachea and bronchial tubes were filled with frothy mucus. There was also passive conjestion of the liver and kidneys, and the blood was dark and coagulated.

It is not rare for chemists working in small rooms with chloroform and lighted Bunsen lamps to become attacked with severe coughing. Miller states that poisoning by chloroform, in the presence of a flame, has not been observed in the lying-in chamber. This is not confirmed by our experience, although fortunately all escaped with but trivial damage, the patient entirely, because of the greater distance of her head from the light and possibly by reason of the protection afforded by the handkerchief over her face.

To avoid any untoward effects when it becomes desirable to employ chloroform in the neighborhood of a flame, it would seem advisable to secure free ventilation by the selection of a large room with an open fireplace, if possible, and to use special inhalers (as Clover's, Junker's or Snow's, employed abroad), which prevent the escape of chloroform into the room, and, finally, to place the patient as far as may be from and below the light. This may be facilitated by the assistance of a reflector.

In closing, I may say that the effect of chloroform we have considered adds one more danger to this anesthetic, already ten times more dangerous than ether, to offset its many advantages, especially those claimed in obstetrical work. These advantages are usually counterbalanced by that cardinal one of ether — safety — or, as Dr. R. T. Edes has put it, "Ether is expensive but less so than a funeral."

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Clinical Department.

DIABETES MELLITUS IN CHILDREN.[1]

BY CHARLES W. TOWNSEND, M.D., BOSTON.

The rarity of this disease in children under ten years of age is my reason for presenting the clinical reports of these five cases.

Case I. M. R., male, five years old, came under my observation in the Out-Patient Department of the Children's Hospital in 1889. He is of Jewish parentage; otherwise the family history is negative. Previously a strong healthy child, he began in the latter part of December, 1888, to have incontinence of urine, first at night, later, in the day as well. Large amounts of urine were passed at frequent intervals, sometimes every half hour. He became irritable and lost flesh, although his strength remained good. From January 17 to February 24, 1889, he was on a strict anti-diabetic diet at the Massachusetts General Hospital. He passed about seventy-four ounces of urine daily. The percentage of sugar in the urine varied from 2½ to 5.4 per cent., being at the latter point when discharged. At that time he had gained at least one pound, and seemed perfectly well. After three months of the disease the child appeared well developed and fairly nourished, as he presented himself at the Children's Hospital. His color was good; his breath smelt decidedly sweet.

For two months, April and May, he was on a careful diet at the Children's Hospital and was given codeine most of the time. The amount of urine was about two quarts, and the per cent. of sugar varied from 3½ to 6½ per cent. The specific gravity varied from 1.025 to 1.034. His temperature at times went up to 100° at night, but was generally normal. From November, 1889, to March 10, 1890, he was lost sight of, but on the latter date, after an illness of fourteen and one-half months, he entered the City Hospital comatose, rigid, with eyes turned to the right, and died in a few hours. There was no autopsy.

Case II. C. D., male, one year and eleven months, came under my observation at the Children's Hospital, Out-Patient Department, January 24, 1897. Father strong and well, English; mother, a New Englander, neurasthenic, hysterical; several cases of consumption on both sides of the family; mother's aunt died of diabetes. Two other children in family in good health. The patient was a large child at birth and was nursed for a year. Since then has had everything from the table; was particularly fond of sweet potatoes, cake, sugar and candy, in which he was freely indulged.

The child was robust and free from even minor illnesses up to three or four weeks before he was first seen, when he became irritable, lost strength, and began to pass water frequently, at the same time developing great thirst, drinking large amounts of water. In the morning micturition would occur every two or three hours, but in the afternoon the child would often void large amounts of urine every fifteen minutes. The napkins smelt sweet, and they, as well as the clothing, after being wet with the urine, became stiff. At that time the child appeared in good health, with rosy cheeks, well developed and fairly well nourished, although a slight flabbiness showed that loss of flesh had begun. It seemed hard to believe that the child was suffering from a disease which would soon prove fatal.

Sugar to the amount of 3½ per cent. was found in the urine, which had a specific gravity of 1.035.

The child was put on an anti-diabetic diet, and a week later the per cent. of sugar had fallen to 2.3. In the week following, however, the child was much worse, taking very little nourishment, and, although its lips were dry and cracked, manifesting but little desire to take liquids. The amount of urine seemed not more than normal, but it contained 4.8 per cent. of sugar and had a specific gravity of 1.042. The child's color was good and the amount of emaciation was not marked. On the next day the child became drowsy, but not comatose; temperature 101°, pulse 132, respiration 40 and labored; examination of chest negative. On the following day, February 9th, after an illness of less than two months, he died. No autopsy could be obtained.

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[1] Read at a meeting of the Clinical Section of the Suffolk District Medical Society, February 15, 1899.

The following case lived in New Hampshire and was not seen by me, but was reported by letters asking advice.

Case III. A. O., male, three years old, a strong, healthy child until two and a half years old, when increased thirst and increased amount of urine was noticed; sugar was found present. At this time he weighed 32¾ pounds; four months later he weighed 34½ pounds and had grown an inch. Strict anti-diabetic diet had been instituted from the first. Medicinal treatment consisted of ergot, calcium sulphide, and later codeine, which was increased to quarter-grain doses; also Fowler's solution and iron. During the first five months of the disease he played as usual, but easily grew tired; he was very irritable and had frequent paroxysms of crying without apparent cause. Sleep was restless and poor. Thirst was not always excessive and the amount of urine was not always large. The specific gravity of the urine went below 1.030 only twice, ranging from 1.030 to 1.046. After five months of the disease and six weeks before his death his appetite failed; he began to lose flesh and strength rapidly. His breathing became labored, but he was able to sit in his chair until within twelve hours of his death, when he became comatose.

Case IV. J. M, male, seven years old, was seen by me in the Out-Patient Department of the Massachusetts General Hospital in September, 1897. The family history is good. Has always been a healthy child, with the exception of measles and mumps, until two months ago, when he began getting up at night to micturate, and was always thirsty. He became nervous and irritable, and complained of pain in the stomach. Sores appeared on his arms and legs, resembling water blisters. The remains of these were to be seen as small pigmented areas, one as large as a dime on the right elbow, and one on the left foot as large as half a dollar, of a purplish-red color. The child was well developed but rather poorly nourished. The urine had a specific gravity of 1.028, with 2.7 per cent. of sugar by the fermentation test. He entered the house, but left, against advice, in three days. The percentage of sugar was found to be as high as 6.67.

He died of the disease on November 23d, after an illness of four months.

Case V. H. M., male, nine years old. This case entered the Massachusetts General Hospital in the service of Dr. R. H. Fitz, by whose courtesy I am allowed to include it here. A grandmother and several aunts had scrofulous tumors, and two uncles were subject to epileptic seizures. With the exception of various children's diseases, the child had been in vigorous health until two years ago, when he had whooping-cough. From that time he was always in delicate health, although no marked symptoms occurred until six months ago. At that time he began to have frontal headache, and, although his appetite was remarkably good, he steadily failed in weight and strength. The amount of urine has steadily increased and he often wets his bed.

The physical examination showed a poorly-developed, emaciated child, with tympanitically distended abdomen and sweet-smelling breath. The urine had a specific gravity of 1.039, and contained 8 per cent. of sugar and gave the acetone reaction. The twenty-four hours' amount was 120 ounces. He was in the hospital nearly two months, dieted, and given codeine. The twenty-four hours' amount of urine varied from 80 to 140 ounces, the specific gravity from 1.016 to 1.042, and the per cent. of sugar from 1¾ to 8 per cent.

Two days before his death he became drowsy, panting for breath, the ethereal odor of breath being marked. On the following day, after an illness of some seven months, he became comatose, with noisy respiration, and died. There was no autopsy.

The rarity of the disease in children is shown by the fact that of 360 cases of diabetes mellitus collected by Pavy only 8 were under ten years of age, and Prout and Meyer, in series of 700 and 380 cases respectively, each found only one case under that age. In the paper by Fitz and Joslin[2] on the cases at the Massachusetts General Hospital between 1824 and 1898, 172 cases in all, there were only 3 under ten years of age, and these are included here, two of them coming under my observation.

Stern collected a series of 117 cases in children. Wegeli[3] has collected 108 cases of diabetes in children. The youngest children in his list are three, reported by Bell, Caron and Nichius respectively, each aged three months. The briefest course of the disease was in a child aged two years and nine months, reported by Cuopf, who had symptoms for only four days, and died in coma twenty-four hours after the disease was recognized. The longest duration of any case was four and a half years.

Diabetes mellitus in infants is to be distinguished from the temporary glycosuria, which is sometimes seen in infants as a result of digestive disturbances, and is not of serious import. Grösz[4] showed that milk sugar can be assimilated by healthy breast-fed children to the extent of fifty grains per pound, which is more than twice as high as in the case of adults. This limit is, however, easily lowered, especially by digestive disturbances, and the glycosuria in such cases is believed to be due to a lowering of the assimilative limit and partly to the action of intestinal bacteria.

By way of summary, a general picture of diabetes mellitus in children as seen in these cases may be sketched as follows: The initial symptoms are apt to be incontinence of urine, due to polyuria; nervous irritability, great thirst. Strength, flesh and color may sometimes be retained until nearly the end. A gain of weight and height, even, may occur, without any amelioration of the disease. The disease goes on to a fatal issue much more rapidly in children than in adults, the duration in my cases varying from two to fourteen months. Death is generally preceded by coma.

Comparative Losses in War. — A memorandum has been prepared by the War Department comparing the losses in the Spanish War with the first year of the Civil War. The aggregate strength of troops employed during the war with Spain is said to have been approximately 275,000, covering the period from May, 1898, to April, 1899, inclusive. During this time the deaths from all causes were 6,190, or 2.25 per cent. The mean strength for the first year of the Civil War was 276,371, with an aggregate loss, by deaths, of 19,159, being a percentage of 6.8.

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[2] Journal of the American Medical Association, July 23, 1898.
[3] Arch. für Kinderheilk, Bd. 19, Hft. 1, 1895.
[4] Pestu Medéchin., Chirurg. Presse, Buda Pest, No. 37, 1892.

A CASE OF AXILLARY ANEURISM.

BY GEO. H. MONKS, M.D., AND F. B. LUND, M.D., BOSTON.

Ligature of Subclavian Artery Followed by Ligature of the Third Portion of the Axillary, Distal to the Aneurism, with Opening of the Sac and Evacuation of its Contents; Later Amputation at the Shoulder-joint; Death Fifty Days after the Amputation, and Eighty Seven Days after the Subclavian Ligature.

HISTORY OF THE CASE.

J. D., age forty-two, laborer, entered the Boston City Hospital on February 25, 1898, on account of pain, disability and swelling of the right arm, due to a tumor in the right axilla. He had been a moderate user of alcohol, and gave a history of venereal ulcer on the penis, followed by sore throat and loss of hair. He had always been well, and had no illnesses previous to the present one.

About six months before entrance he had noted a swelling the size of a walnut, and neither tender nor painful, in the right axilla. This varied in size, increasing and decreasing from time to time, but causing him no serious trouble until about three weeks before entrance, when it began to grow rapidly larger and caused him excessive pain, together with swelling of the arm and hand. The pain, which was increased by exercise, obliged him to give up work.

On examination he was seen to be a well-developed man, very muscular, and of florid complexion. The heart's apex was in the fifth left interspace, one inch outside the nipple line. A soft blowing systolic murmur was heard over the entire cardiac area. Under the right pectoralis major muscle, bulging out the axillary floor, was a rounded tumor, which pulsated strongly. On auscultation a distinct bruit was heard over the tumor. Digital compression of the right subclavian artery against the first rib caused the disappearance of the right radial pulse and a marked diminution in the strength of the pulsations of the tumor. The right hand and arm were edematous, and the skin bluish-red from capillary distention. The superficial veins of the forearm were distended, apparently on account of the pressure of the tumor on the axillary vein, and there was marked diminution in the sensation of the skin area of the hand supplied by the ulnar nerve.

Owing to the rapid growth of the tumor, the pain and disability which it caused, and the fact that the strength of the pulsations suggested imminent danger of rupture, operative interference seemed strongly indicated.

Ligature of the right subclavian seemed to give the greatest prospect of relief, and was performed by Dr. Monks on February 26th. Under ether an incision five inches long was made above and parallel to the right clavicle, through the skin and fascia.

The posterior border of the sterno-mastoid, the omo-hyoid and scalenus anticus muscle were exposed, and the scalene tubercle felt. The third portion of the subclavian artery was exposed, the sheath opened, and two silk ligatures applied and tightened. On tightening the ligatures the radial pulse disappeared, and there was a marked diminution in the size and the strength of the pulsations of the tumor. The wound was closed with deep sutures of silk, and the usual dressings applied. The arm was wrapped in wadding and bandaged, with the object of aiding by warmth the return of the circulation.

The hand never grew cold, nor was the circulation seriously interfered with. By the 3d of March, the seventh day after the operation, faint pulsation could be felt in the right brachial. The wound healed well except at its inner end, where there was slight redness.

On March 8th pulsation had begun to return in the tumor, and the patient complained of pain in the arm. The inner end of the wound was opened by scissors, and a small amount of pus evacuated, and in a few days a sinus developed running downward behind the clavicle.

On March 10th the temperature rose to 102°, there was complaint of increased pain in the arm, and the tumor, to which a moderate amount of pulsation had returned, ceased to pulsate.

On March 18th there were signs of consolidation of the right lung, and delirium, which symptoms on March 22d disappeared with return of the temperature to normal.

On March 24th there began a steady, slow oozing of dark-colored blood from the sinus above the clavicle. The amount of oozing was moderate, the blood did not come in bright arterial jets, nor in a steady, rapid flow, as from a vein. In view of the character of the oozing and the history of the case, the following deductions were made: In the first place, the character of the oozing, its slowness, and the dark color of the blood made it evident that the proximal ligature had not slipped.

The following circumstances called attention to the ulceration of the distal ligature through the arterial coats: As will be noted, pulsation had ceased in the tumor twelve days before the beginning of the hemorrhage. This cessation of pulsation, which had, although much diminished at first by tying the subclavian, returned to a marked extent, could only be explained by the occurrence of thrombosis in the aneurism, which thrombosis was undoubtedly due to the septic process about the distal ligature, to the final ulceration of which the hemorrhage was believed to be due. The slowness of the hemorrhage was undoubtedly due to the fact that thrombosis had occurred before the ligature had cut through the arterial walls.

It will be noted that the occurrence of thrombosis in the aneurism was attended by a rise of temperature, delirium, and signs of consolidation in the right chest, which disappeared just about the time relief was afforded the imprisoned septic thrombus by the beginning of the hemorrhage.

In accordance with the diagnosis, therefore, of hemorrhage due to ulceration through the vessel wall of the distal ligature, after thrombosis had occurred in the aneurism, it was decided to tie the axillary artery below the aneurism, open the latter, turn out the septic clot, and pack the wound. Inasmuch as it would probably be necessary, owing to the extent of the aneurism, to tie the artery below the point where the subscapular artery was given off, it was recognized as likely that gangrene of the hand would probably supervene, but it was nevertheless deemed more conservative to tie the artery, and defer the operation of amputation till a line of demarcation had formed and it was definitely known how much of the limb could be saved.

On March 29th, therefore, an incision was made by Dr. Lund, parallel to and just below the anterior axillary fold, from the insertion of the pectoralis major to within about two inches of the nipple. Through the outer part of the incision the third part of the axillary artery was exposed, ligated by two ligatures and divided between them, at a point just below where its aneurismal dilatation began, which was unfortunately just below the origin of the subscapular and circumflex arteries. Through the inner part of the incision the aneurismal sac was exposed, its anterior wall cleared, and then opened from end to end, and a considerable amount of clotted and fluid blood evacuated. The clot was yellowish brown in color, and was evidently beginning to disintegrate. The second and third ribs were found to have been bared of periosteum, and extensively eroded, so that they were almost worn through where the aneurism lay against the chest wall, a very thin bridge of rough, carious looking bone alone remaining. A sharp, projecting splinter on the second rib which was projecting into the sac was cut off with bone forceps and removed. The intercostal muscles had disappeared with the erosion of the ribs to which they were attached, and the thin, grayish-yellow, sloughy-looking pleura hung loosely between the eroded ribs, and flapped in and out with every respiratory movement. The empty sac and the wound were packed with sterile gauze, and the wound partially closed by sutures of silkworm gut.

The patient recovered well from ether, and there was no staining of the dressing until three days later, when the first dressing was done. The arm and hand, which were, of course, protected by cotton and a loose bandage, remained warm and of good color. The packing was removed from the wound and replaced. The wound above the clavicle had healed.

On April 3d, six days after the second operation, the hand became swollen and discolored; in the next two days the hand became gangrenous, the discoloration extending half-way to the elbow. On April 3d the temperature rose to 103°, and the pulse to 140, and there was occasional mild delirium.

On April 4th, as the conditions remained unaltered, Dr. Monks amputated the limb at the shoulder-joint by an internal and external flap. A moderate amount of venous oozing was controlled by ligatures, and the flaps, after thorough irrigation, united by deep and superficial sutures, drainage being provided for by gauze wicks. Considerable shock attended the operation, which was rapidly performed, but the patient recovered well under stimulation.

Six days after the operation the wound was dressed, and a localized area of suppuration evacuated by separating the flaps. There was a free purulent discharge from the sinus leading to the eroded and necrotic ribs.

The patient had seemed rather stupid and dull since the amputation, but after April 12th his mind became more clear. During the next few days a swelling appeared on the left side of the neck which was incised under cocaine anesthesia with a negative result.

In the next few days the swelling in the neck subsided, and the patient gained considerably in strength, sitting up every day.

By May 1st the patient was up and about the ward, the amputation wound was healed, and the sinus discharging very slightly. A slight cough then developed, and a little tenacious sputum was raised.

On May 13th Dr. F. H. Williams, who was called in consultation and made an x-ray examination, detected signs of the presence of fluid in the left chest, which was tapped on the 15th, and thirty-nine ounces of serous fluid removed, with considerable relief to the patient.

On May 20th there was a marked rise of temperature and complaint of pain in the right side of the chest, and on the 22d dulness, bronchial breathing and increased vocal resonance and fremitus were made out.

On the 24th there had been noticeable improvement in the patient's condition. The mind was clear and strength so good that he sat up in bed. He lay down at about 5.30 P. M., and at 5.55 was found dead by the nurse. Death had therefore come suddenly and apparently without pain. No autopsy was obtained.

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THE ABDOMINAL BANDAGE IN THE TREATMENT OF ENTEROPTOSIS.[1]

BY ARTHUR K. STONE, M.D., BOSTON,

Physician to Out-patients, Massachusetts General Hospital; Physician to the House of the Good Samaritan and St. Luke's Convalescent Home.

AT the conclusion of a paper entitled "Enteroptosis as a Clinical Factor in the Diseases of Women," read in the spring of 1897, I stated that I had not settled to my own satisfaction what was the simplest and best form of abdominal bandage to use in the treatment of this condition. Although I have given the subject much consideration I do not feel sure that I am much nearer the settlement of the problem than I was then. Still I think that I have made out some of the conditions that must be complied with in order to have any success whatsoever in the use of the bandage.

Looking over the bandages to be found in the market the first thing that strikes one is that they are all made so as to conform to the soft portion of the abdomen, that is, they have a convex curve on the lower border. The result of this is that the bandage practically takes its real lower bearings over the anterior superior spines and the crests of the ilia. This tight band crossing about midway between the umbilicus and the pubes in many cases allows the prolapsed intestines to get down into the lower part of the abdomen, press down upon the pelvic floor and protrude the lower abdominal wall; or, in other words, instead of relieving the enteroptosis the bandage intensifies it. This takes place whether or not there are perineal straps. And this is why so many cases are unrelieved or made worse when they are simply ordered to go to the instrument makers and get an abdominal bandage.

Where there is no great prolapse of the pelvic floor, and where the abdominal walls are specially fat and heavy, such bandages give relief, but not where there is true enteroptosis and prolapse of the pelvic organs. To help this condition, the pressure must be so applied that it will be greatest immediately above the pubes. Therefore the lowest and tightest part of the bandage must pass directly round the body at the pubes, which will make the bearing to be taken just above the trochanters and below the crests of the ilia, and will bring the buckle in the back at the end of the sacrum or the very beginning of the natal fold. At first glance this seems very low, as if it might interfere with locomotion, but a short time given to observing the corsets exposed for sale in shop windows will show that many of them come fully as low as this and occasion no inconvenience. In fact, I have never had patients complain of this low bearing of the bandage. What does cause complaint, and is really very disagreeable, especially in hot weather, is the perineal band, which must be worn in practically all cases, so as to keep the bandage in place.

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[1] Read at a meeting of the Clinical Section of the Suffolk District Medical Society, February 15, 1899.

Glénard, who first called particular attention to the condition of enteroptosis, used for his bandage a broad band of elastic webbing with straps at the back and perineal bands, insisting that the elasticity was very necessary for good results. With this opinion I certainly agree, but do not think it necessary that the whole bandage should be elastic, but only so much as to allow freedom of motion.

I have found that however thoroughly and well explanations may have been given it will be necessary to see the patient a number of times and see the bandage in working position in order to get an idea of the faults and the changes which are necessary to put the bandage in condition to do satisfactory work. In fact, it is necessary to treat the bandage with as much respect, as, for example, the orthopedic surgeon bestows upon any of his pieces of apparatus, in order to obtain satisfactory results in the relief of enteroptosis.

Should it be necessary to get special pressure, as, for instance, beneath a floating kidney, I usually begin by using napkins and towels, until I find where it is necessary to place the pressure and how much padding is required. When this has been pretty well determined I have the patient or maker sew a pocket on the inner side of the bandage, with greater capacity at the lower part than at the top; this is then stuffed with upholsterer's curled hair and the upper part closed. Some cases require special devices for the support of peculiar internal conditions, and it often means very careful study of the case to determine just what form of support will give relief, but when once made out and the bandage properly applied the result will be worth the pains taken.

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Medical Progress.

RECENT PROGRESS IN THERAPEUTICS.

BY ELLIOTT P. JOSLIN, M.D., BOSTON.

(Concluded from No. 18, p. 429.)

TANNALBIN.

Tannalbin[9] is a pale yellow, tasteless powder, containing about 50 per cent. tannic acid. It passes more or less unchanged through the stomach and is decomposed in the intestine, setting the tannic acid free. The remedy has risen rapidly in favor and no mention of harmful results has come to the reporter's notice. Verclyette puts the minimum dose per day as 2 grammes (30 grains), and the maximum 4 grammes (60 grains), given in capsules for one to eight days. Stein has noted that if four to six grammes are without effect there is nothing to be gained by giving more of the preparation. He speaks favorably of it in chronic enteritis and intestinal hemorrhage.

Wesenberg[10] has compared tannalbin, tannigen, tannoform and tannopin. He finds that under the influence of pepsin 50 per cent. of the tannalbin, 70 per cent. tannoform, 20 per cent. tannopin and practically the whole of the tannigen remain unchanged. Tannigen is thus least changed in the stomach, whereas tannalbin is there most altered. As water does not break up the combination of tannopin and tannigen they have a less disagreeable taste than the other preparations. Tannoform is most quickly broken up in the alkaline intestinal contents; next comes tannalbin and tannigen and last tannopin. Tannopin is thus to be preferred in catarrh of the lower bowel.

Koelzer[11] has tested tannigen and tannalbin in fifty cases of infantile diarrhea occurring in Heubner's clinic. In a case of enteritis with muco-purulent hemorrhagic stools and in twelve puny children with chronic dyspepsia accompanying other diseases the two preparations were of no value. This was not the case if the children were fairly strong, the intestinal affections of recent origin, and severe constitutional disturbance absent. The action of the drugs was of the most striking value in fifteen cases of acute dyspepsia after the first symptoms due to the pathological decomposition in the intestines had been overcome. Often calomel or bismuth subnitrate were given simultaneously. Koelzer recommends the administration of the preparation for only a period of eight days.

GLUTOID CAPSULES.

In a communication upon the "Diagnostic and Therapeutic Value of Glutoid Capsules"[12] Sahli explains the method he has found in connection with Dr. Weyland for making pills insoluble in the stomach but soluble in the intestine. It is based on the fact that gelatin treated with formaldehyde is changed into a substance (glutoid) which resists HCl digestion, but is readily dissolved by action of the pancreatic juice. Up to this time no satisfactory means has been found to administer drugs by the mouth to the intestine without their exerting any action whatever on the stomach. Sahli encased various indicators, such as iodoform and salol, in a coating of glutoid or in glutoid capsules, and by testing for their absorption from time to time, both in laboratory and clinical experiments, proved that they passed the stomach unchanged, to be set free in the small intestine. By varying the resistance of the coating the pills will dissolve in shorter or longer intervals after their contact with the pancreatic juice. Knowing the time in which pills of a given consistency are dissolved in normal individuals, similar pills can be used to determine the condition of the digestion in invalids. Thus glutoid capsules promise to be a distinct aid in the diagnosis of pancreatic diseases. Finally, in the glutoid pills and capsules the means has been found to administer drugs to the intestine which have not been changed in their composition by the gastric juice, or, on the other hand, been injurious to the stomach.

ENEMATA IN CONSTIPATION.

Schellong[18] recommends most strongly the use of enemata in the treatment of constipation. His directions to the patient are somewhat as follows: "Buy an irrigator of the capacity of half a litre and connect it with a No. 7 English rectal tube. Take the injection daily, choosing a time, usually, immediately on rising or after breakfast, even to the hour and minute at which it will always be convenient. Lie on the left side with knees drawn up and learn to get along without assistance. Oil the tube for its whole length and fill the irrigator with ordinary water which has stood in the room over night, allowing one-half the quantity (a glass full) to escape. Shut off the remainder by bending the connecting tube at right angles. Now insert the point of the tube, pushing it forward slowly until it has passed somewhat above the third opening, and, holding the bag at the height of twenty to thirty inches, begin with the injection. During the process the water should flow in slowly, and the tube should be shoved in if possible its entire length. The instant there is an inclination for stool pinch the tube; when this lets up continue, until in two to five minutes the whole quantity of water has been taken up by the intestine. Remove the tube and resist for a time the desire for stool. In the first few days there will be either no stool at all or an insufficient quantity, but patiently wait, and not under any circumstances take cathartics. Furthermore, empty the intestine at no other time in the day than that prescribed, especially not yielding to an inclination to stool at any other hour. If in a week you attain no result or feel otherwise indisposed, come back. Take especial note of the diet — at breakfast strong coffee, a little bread with honey (always use coarse bread), and an abundance of vegetables; as for the remainder, a mixed diet, taking at night one-half dozen prunes, raw or cooked. Avoid tea. Take a daily walk for pleasure.

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[9] American Year Book Medicine and Surgery, Gould, 1899, p. 935.
[10] Central. für Therapie, 1899, p. 55.
[11] Therap. Monat., 1898, p. 572.
[12] Deut. Archiv für klin. Med., 1898, p. 517.
[13] Schellong: Therap. Monat., 1899, p. 620.

The patient reports, as a rule, in a week, with the statement that the beginning scanty stool has commenced to regulate itself. The treatment must be kept up for four weeks, and then the patient can try to get along without the enema. Usually this is successful at the end of a month and a permanent cure is effected. If a recurrence takes place, a repetition of the treatment for a less period of time will be found sufficient.

In a small minority of cases there is no movement during the week. If no misunderstanding between patient and doctor prevails the injections are thereupon modified in the following manner: A preliminary irrigation is taken with a large quantity of warm water to soften the feces, allowing the water to flow in and out through the tube for ten to fifteen minutes or until the returning water contains fragments of the stools. Having allowed all the warm water to escape, the customary glass of cold water is poured in, which, generally, is followed by a good result. If the motion is slight this procedure can be repeated on the following day, and then let the original plan come into force.

With this treatment Schellong has often attained surprising results, and for this reason and because of its simplicity he recommends it.

THE TREATMENT OF BRONCHIAL ASTHMA.

V. Noorden calls attention anew to the treatment of asthma with atropine. He was led to employ it from the good results he observed in a case of severe asthma in a young girl with urticaria. He gave atropine for the urticaria, but with the unexpected result that this persisted, while the attacks of asthma diminished in frequency, and during the next two years did not return. He has used atropine since in many cases of asthma and reports that with typical attacks one can at times attain excellent long-lasting cures. In a boy, in old people or in those with complicating empyema and bronchial catarrh it was without effect.

The daily dose at first was 0.0005 grammes ($\frac{1}{130}$ grain) every two or three days and was increased by $\frac{1}{2}$ milligramme until 4 milligrammes ($\frac{1}{16}$ grain) atropine daily were given. After some time the dose was gradually diminished. The duration of medication was four to six weeks. The atropine was borne well, but V. Noorden considers it best to treat such patients in hospitals or have them under close observation. In two cases so treated he observed a decrease of the eosinophilic cells in the blood.

COLD BATHS IN SCARLET FEVER.

Knospel[14] reports 158 cases of scarlet fever which he has treated by cold baths. The high temperature, delirium, and cardiac weakness in the first stages demand active procedures and, as he says, two methods are open — the medicinal and the hydropathic. While the medicinal is being abandoned, the hydropathic is gaining more and more adherents. The measures Knospel employed consisted of cold sponging, packs, baths and, exceptionally, external douching. Even by cold swathes alone frequently sleep and rest were found. In cases with bronchitis, broncho-pneumonia and partial coma good results were obtained by pouring over the body water about 20° colder than the bath in which the child was already immersed. Of 30 cases so treated nephritis occurred in 5; of the 90 treated without baths 21 cases showed a corresponding renal affection.

At a meeting of the Boston Society of Medical Improvement, of which a report will later appear in these columns, it will be seen that every gentleman touching on the subject of baths in scarlet fever spoke of this mode of treatment with the greatest favor. Not one untoward instance was mentioned. In scarlet fever the baths appear indicated not only for the same reasons as in typhoid, but also because the desquamation and recovery are hastened. The old idea of driving the rash in has lost its force.

PROPRIETARY DOMESTIC DISINFECTANTS.

The medical profession is already indebted to Dr. Harrington for pointing out the large percentage of sugar-forming material in most of the so-called diabetic breads.[15] He has increased this debt, this time with the help of Dr. Pearce, by pointing out the character of many of the proprietary domestic disinfectants.[16]

The common practice of sending to the apothecary for "a good disinfectant" for use in spit-cups and bed-pans led these two gentlemen to investigate the right of the preparations so sold to be so called.

Twelve preparations examined were as follows: (1) Marsh's Instantaneous Disinfectant, (2) Disinfectine, (3) Platt's Chlorides, (4) Ozonos, (5) Hovey's Chloride of Zinc, (6) Bromo-chloralum, (7) Chlorinated Soda, (8) Carbolic Purifying Powder, (9) Royal Disinfectant, (10) Excelsior Disinfectant, (11) Phenol Sodique, (12) Preparation of Eucalyptus.

After a few preliminary experiments had been made other preparations were added to the list, as follows: (13) A widely advertised nostrum for internal and external use, guaranteed to cure almost all cases of disease, and consisting of an aqueous solution of less than one per cent. of sulphuric acid; (14) Carbolic acid, five per cent.; (15) Sulphonaphthol, five per cent.; (16) A preparation containing a fairly large amount of cresols, five per cent.; (17) Formaldehyde, one per cent.

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[14] Knospel: Klinische therapeutische Wochenschrift, No. 8, 1899, p. 238.

[15] Journal Boston Society Medical Sciences, vol. ii, p. 131.

[16] Loc. cit., vol. iii, p. 230.

The test objects employed were anthrax and typhoid cultures, stools from typhoid cases, membrane from diphtheria cases, and sputum from cases of pulmonary tuberculosis. Anthrax was employed solely on account of its high resistance, and not because of its common occurrence in habitations. The others were employed as representatives of the materials which the public is most commonly advised to sterilize without delay.

Of all the agents tried only two, the preparation containing cresols and the one-per-cent. solution of formaldehyde made by diluting 2.5 cubic centimetres of 40-per-cent. formalin with 100 cubic centimetres of water, were uniformly successful. The carbolic powder (8) and two tar products (9 and 11) were invariably unsuccessful. Moreover, the cost of the proprietary preparations is much in excess of that of very large volumes of those agents which yield the best results.

UROTROPIN.

So much has been said of urotropin that it will suffice here to simply call attention to what has been written on this subject of late by members of the profession in Boston. I refer especially to articles by Dr. Mark W. Richardson,[17] Drs. Vickery and Paul Thorndike[18] and Professor Whittaker.[19]

DIABETES MELLITUS.

The present state of the treatment of diabetes was one of the topics for discussion at the German Medical Congress in 1898, and it is most encouraging to note that not one of the men who spoke recommended a drug as a specific in this disease. The principal paper was read by Leo.[20] Unfortunately he has felt obliged to retract some of the statements he made concerning the production of diabetes, so that it will be only fitting to refer to a portion of what he said. He considers the essential point in the treatment to completely free the urine from sugar, which in most cases is brought about by the exclusion of carbohydrates. This not only works symptomatically, but, as Naunyn has shown, directly tends to increase the capability of the body to consume sugar introduced or even formed within itself. Diet alone suffices in light cases. It should be varied — at times prescribing a complete abstinence from carbohydrates, at others allowing as much as can be borne as shown by the urinary tests. For the severe cases in young individuals which run a course suggestive of an acute infectious disease the physician is powerless. In the cases coming next this class in severity much can be done. A *sine qua non* is the absolute withdrawal of carbohydrates for a period of three to five weeks. At the end of this time, even if some sugar persists, the barriers should be somewhat lowered. Often an increased tolerance for sugar will then be noticed. Leo advises a repetition of this "total abstinence" period three times a year. The patient's condition must be controlled not only by the quantity of sugar in the urine but by the ferric chloride reaction, the amount of albumin, and the appetite, nutrition, or premonitory signs of coma in the patient. Vegetables should be given because of the salts they contain, and alcohol (brandy) because it is a food. Patients either eat too much of the surrogates for bread or form a dislike to them, and for this reason plain bread with much butter is better given. As to milk, the question must be decided in each individual instance.

Exercise is the best means by which we can help on the assimilation of the sugar in the body. In some cases the sugar will wholly disappear in this way, but it must be remembered that in others (the severe cases) the amount of sugar is increased.

Pancreatic extracts are unfortunately as yet of no value, but in the discussion which followed Leo's paper it was evident that it was along this line that investigators were working.

Albu[21] in an article on the action of strong muscular exertion (bicycle riding) on diabetes records his experience with a patient. After a bicycle ride of one, two or more hours the per cent. of sugar in the urine fell and continued low for three, four or more hours. On the days in which the diet remained the same but on which there was no exercise the per cent. of sugar rose. After three months of this treatment the diabetes was shown by test meals to have changed from a severe to a mild form, and on some days there was no sugar in the urine. The patient then omitted the bicycle riding and the sugar returned.

Orlandini[22] has shown by a series of experiments that the oxygen treatment of diabetes is of no value.

Estay[23] records two cases treated with methylene blue in neither of which the sugar entirely disappeared, but he considers the drug *comme un antiglycemique parfait!*

Wilcox[24] treated a patient with jambul (and diet) and the sugar disappeared, and from this and other experiences he calls attention again to this drug, which Minkowski[25] found useless in the pancreatic diabetes of dogs and v. Mering[26] in mankind. Van Noorden[27] has never obtained notable results from jambul, but on account of the many favorable reports from its use thinks it deserving of mention. Perhaps in time we shall learn to distinguish those cases which react favorably to it from those which do not.

Finally, Mayer[28] advises the use of corrosive sublimate. By means of this drug (and diet) the sugar disappeared in seven of eleven cases of diabetes. It is of interest to note that only three of the eleven cases were under fifty; that the maximum weight of five was over one hundred and ninety, that another was a "mild case," and still another "an old case in which diet has great influence." Furthermore, no definite control experiments are recorded. In closing he says, "It is only on accumulative evidence that we can base positive facts."

I cannot refrain from quoting from my friend Dr. Pfaff's opening lecture on therapeutics to the students of the Harvard Medical School: "In relying on their experience at the bedside physicians overlook the fact that nothing is proven by a repetition of the same hypothesis."

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[17] The Journal of Experimental Medicine, vol. iv, No. 1, 1899.
[18] Boston Medical and Surgical Journal, January 5, 1899.
[19] Loc. cit.
[20] Leo: Verhandlungen d. Deutsch. Congress, 1898, p. 77.
[21] Therap. Monat., 1899, p. 106.
[22] Revue de Therapeutique, 1899, p. 88.
[23] Bull. génér. de Therapeut., 1898, No. 2.
[24] Medical Record, 1898, No. 1.
[25] Citirt. Naunyn: Der Diabetes Mellitus, 1898, p. 404.
[26] Loc. cit.
[27] Die Zuckerkrankheit, 2d edition, p. 170.
[28] Medical Record, December 10, 1898.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.[1]

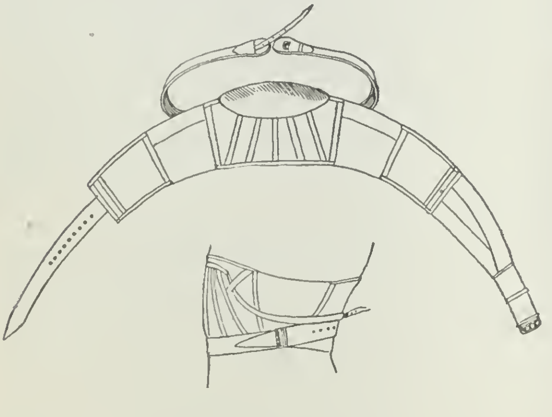
J. BERGEN OGDEN, M.D., SECRETARY.

REGULAR meeting Wednesday, February 15, 1899, DR. H. F. VICKERY in the chair.

DR. A. K. STONE read a paper entitled

ABDOMINAL BANDAGES IN THE TREATMENT OF ENTEROPTOSIS.[1]

DR. E. P. JOSLIN: I was quite interested in a bandage which was shown me by Dr. Leopold Kuttner, of Berlin. It combined several of the qualities Dr. Stone has spoken of in his paper, and had this advantage, that no perineal band was required. This bandage consists of two leather-covered metal curves which start with a support in the back, pass over the crests of the ilium and end just above the pubes in a cross-bar which supports a padded cushion (see illustration). The bandage somewhat resembles a double hernia truss reversed. The metal arms fix the support at the lowest part of the abdomen; the cushion raises the viscera, which an elastic band holds in place. This bandage has worked very well in the cases in which I have seen it tried. I have always questioned, however, as to how much the good effects were due to the bandage and how much to the mental influence it exerted on the patients.



DR. VICKERY: I think that often we are able to do good to patients by palliative means, into which class I think it is fair to put abdominal bandages of this sort. When I first started in practice I should have thought it less worth while to fuss with patients in that way than I do now. It seems to me it is like greasing the wheels of a wagon. The wagon may be a poor thing or need repairs in other ways, and yet a little oil on the wheels is sometimes of immense advantage. I might be pardoned for mentioning a case that has lately occurred to me where the abdominal bandage was ill applied. A young man on the training-ship in the harbor was troubled with indigestion, some vomiting and some cough, and he thought he vomited blood; certainly blood appeared from somewhere. He was sent away by the surgeon as being unfit for duty. After looking him over, finding no bacilli in his sputum, and no signs in his lungs, and some tenderness on the left side at the lower margin of the ribs, where he had been injured by a fall, I asked him to take off a belt which he wore, which was about one-half inch wide, of leather, and strapped very tightly around him. He put on suspenders instead and felt immediate relief, and has vomited no blood since, but has constantly gained. The improvement may have been partly or wholly from leaving the ship and having perfect hygienic surroundings, but I believe that the removal of the narrow strap was very beneficial.

DR. G. B. MAGRATH presented pathological specimens:

I. BRAIN PRESENTING CHANGES IN THE LATE STAGES OF HEMIPLEGIA.

II. BRAIN SHOWING SUBPIAL HEMORRHAGE.

III. HEART AND AORTA WITH EXTENSIVE ANEURISM OF THE LATTER.

DR. MAGRATH: The first specimen is a brain showing the changes in the late stages of hemiplegia. The brain is that of an old woman, a patient in the Long Island Hospital, who for fifteen years or more had right-sided hemiplegia with aphasia. The left hemisphere presents a deep sulcus chiefly in the parietal region, which is all there is to show of a large cyst of softening which was present in the recent state. At the time of the autopsy there was a large cyst as big as my fist occupying this region, filled with clear fluid, which of course has disappeared in the process of hardening, and we have left merely the evidence in the shape of a scar of the end result of a previous hemorrhage, undoubtedly in the region of the internal capsule. I have a section of the spinal cord with a mark indicating the degeneration of the crossed pyramidal tract.

This brain is that of a girl of eighteen who had had hemiplegia for about six months. About a week before her death she developed a very remarkable paraphasia; twelve hours before she died she developed coma. At the autopsy I found acute vegetative endocarditis with the diplococcus lanceolatus present in the growth, a typical case of acute endocarditis. In the brain there is an extensive subpial hemorrhage chiefly over the base, very marked indeed over the pons and medulla and extending up over the right hemisphere. The cause of this hemorrhage I do not know. The brain has not been dissected at all, — hardened *in toto* in Kaiserling, — but it is probable that there was septic embolism here.

This specimen has been hardened in 95-per-cent. alcohol for histological purposes. It is the heart and the aorta of a woman, a patient in the Long Island Hospital, who for two or three years had had right hemiplegia with aphasia, and for eight months a pulsating tumor at the right of the sternum at the level of the clavicle, from the clavicle to the lower border of the second rib. It was easily diagnosticated as aneurism, and we have here anatomically an extensive aneurism of the whole arch. The larger sac is of the ascending arch; the transverse arch is dilated but little; the descending arch presents another well-marked dilatation. There was here an erosion, the tumor presenting subcutaneously, the inner end of the right clavicle, first and second ribs and a portion of the sternum being involved. The tumor has been opened along the top of the arch; part of the sternum has been removed. The area of erosion shows very poorly. This is the sac caused by the dilatation of the ascending arch full of lamellated fibrin. There was obliterating endarteritis of the left common carotid in addition to the aneurism. There was a rather doubtful history of syphilis in this case.

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[1] See page 448 of the Journal.

Dr. Vickery: I think Dr. Magrath has put us under great obligations for taking the trouble to demonstrate these specimens. I should like to ask how long before death the hemorrhage in his case occurred?

Dr. Magrath: I think twelve to twenty-four hours. Coma developed between twenty-four and twelve hours before death. I think it is probable that the hemorrhage was as recent as that, from the anatomical condition of the part; there was no organization.

Dr. Vickery: Was the heart enlarged in this case?

Dr. Magrath: Curiously enough, it is not enlarged; it is within the normal limits. The patient was thirty-three years of age. It is interesting that in many cases of aneurism of the aorta you find no enlargement of the heart. I had an opportunity of making a physical examination of the case two years ago, and there was at that time an aortic systolic murmur. Anatomically the aortic valves were not involved to any extent.

Dr. Vickery: That would coincide with my belief on the subject that the heart is not enlarged in cases of aneurism unless there is aortic regurgitation.

Dr. Stone: I had a case a short time ago that would bear out this statement. The heart was of perfectly normal size, with an aneurism of the aorta within the pericardium, and rupturing there, and no valvular trouble at all.

Dr. Vickery: I have seen in a book within a short time aneurism of the aorta put down as one of the causes of hypertrophy of the heart, but I think the best authorities agree with what Dr. Magrath and Dr. Stone have said. The contrast in this case between the size of the aneurism and the size of the heart is very striking. Such a thing is rare in a woman, is it not?

Dr. Magrath: I think so. It so happens that two out of three that came under my notice this year were in women, but, statistically, I think it is rare.

Dr. C. W. Townsend read a paper entitled

DIABETES MELLITUS IN CHILDREN, WITH REPORT OF CASES.[2]

Dr. Rotch: As Dr. Townsend says, it is such a very rare disease that we really have not many facts to build up anything which is especially practical in the treatment. I also think that we are very much in the dark as to the etiology of the disease. The cases I have seen have been universally fatal. Has Dr. Townsend found any cases in young children that recovered?

Dr. Townsend: No.

Dr. Rotch: The prognosis seems worse in young children than in adults. I have seen only five or six cases, and I think three were under three or four years of age. I have one under observation now, in which I am experimenting a little with an exclusive meat diet — meat and water — to see if in a couple of weeks the sugar will disappear; it has been very rapidly decreasing from 10 per cent. down to 2 or 3 per cent. The prognosis is supposed to be better if the sugar passes away in the two weeks while the child is taking meat and water. Does Dr. Townsend think codeia of value? I have rather given up the codeia.

Dr. Morse: It seems to me Dr. Townsend has been very fortunate, or unfortunate, according to the way you look at it, in seeing so many cases of this very rare disease. I think it must be very rare indeed, because, for example, in the Out-Patient Department of the Infants' Hospital in the last three years over 7,000 new cases have been treated, and among them there has not been a single case of diabetes mellitus. I myself have seen but one case; this I saw three or four weeks ago at the City Hospital. The history is this: The patient was a girl about eight years old, who was one of the inmates of a home for destitute children. Nothing was known of the family or past history. For four or five months she had had "an awful thirst" and a very large appetite, had passed a large quantity of water — five or six times in the night and frequently in the day — was cold, and wanted to stay near the fire, suffered from palpitation and dyspnea, but had no itching and no sores; she had lost a great deal of weight, and the bowels moved about three times a day. She was very much emaciated, and the skin was dry. The physical examination was otherwise practically negative. The urine was very pale, slightly greenish, no odor, acid, specific gravity 1.040, no albumin, and a very large amount of sugar. She came the day before I left the clinic, so I had no opportunity to follow her.

One rather important thing to be remembered, it seems to me, is that in young children one of the first symptoms may be incontinence of urine. Hence in all cases of enuresis we ought to be on the lookout for sugar as a cause. I am sure it is not a common cause, however, because I think I never passed a case of enuresis without examining the urine, and I never have found sugar.

As to the temporary glycosuria which children have, in the last two or three years I have seen two cases in which there was a considerable amount of sugar in the urine in the course of acute digestive disturbances. The sugar was only temporarily present, however, and soon disappeared entirely. As far as I know, it never returned.

A point a little aside from this is how to get the urine in small children. During the past summer I made some investigations as to the frequency of nephritis in babies, and during the summer I catheterized about a hundred babies under two years of age. I had no difficulty in catheterizing babies as young as two months old, both male and female, and I am very sure I did no harm in any case. It is a perfectly simple thing to catheterize them, does not seem to hurt them a great deal, and the urine obtained is fresh.

Dr. Stone: The only case of this kind I have ever seen was in a child somewhat older than those mentioned by Dr. Townsend; I have already reported the case. The glycosuria was caused by a large solitary tubercle in the fourth ventricle and the child died with cerebral symptoms. There was a large amount of sugar in the urine. Unfortunately there was no autopsy.

Dr. Morse: Lancereux recently reported three or four cases in young adults from fifteen to eighteen years of age in whom sugar appeared at about fifteen or sixteen. At the autopsies he found a perfectly normal pancreas, but a very small one. He considers that the condition is a relative insufficiency of the pancreas and desires to establish a new form of diabetes on that pathological basis.

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[2] See page 445 of the Journal.

DR. TOWNSEND: Dr. Rotch asked about codeine. I did not find that drugs had any effect in these cases. The diet seemed to be the important thing, and the effect of that was merely temporary. They all went on to a fatal termination. What Dr. Morse said about enuresis has interested me for some time, because it is not uncommon for parents to think that a child if it wets its bed or clothes has some kidney disease or diabetes, and I do not feel that any one can safely say offhand that a child has not diabetes until the urine is examined. It is important, therefore, for a physician to examine the urine in every case of incontinence. Incontinence of urine is extremely common in children, whereas diabetes is extremely rare. What Dr. Morse said about the use of the catheter is interesting. I myself should hesitate to use the catheter in a child for diagnostic purposes, knowing that in the most skilful hands the danger of setting up cystitis is present; possibly my caution may be too great.

DR. VICKERY: Perhaps I might be permitted to say a word about getting urine from a baby. In the first place, about the danger of catheterization, I believe there is real danger even with those of us who appreciate the necessity of asepsis. There was a man under my care who was operated on by one of our best surgeons and the operation did first-rate. The man had to be catheterized. Every precaution was used, and yet the man had an abscess of his prostate as a result of it, and was made very ill. The persons who catheterized him believed that they were extremely careful, and yet they ascribed this complication to the catheterization.

One time I wanted to get the urine of a baby. I had the nurse keep the baby on a bed-pan until it made water. The nurse would not like to do that very often, I dare say, but we got a specimen.

DR. ROTCH: Of course we all naturally would think of harm being done by catheterization, but I do not think I ever heard of so large a number of cases done consecutively in children as Dr. Morse has done, and it points towards the fact that they probably are not so easily affected as adults. It is a very large number of cases in which he has done this, and it is the first time I have known of its being done in a methodical way.

DR. MORSE: I made these examinations this summer at the Out-Patient Department of the Infants' Hospital. Criticism is entirely unexpected, but, since I am being criticised, I think it is fair I should explain the method pursued. I used a No. 8 French soft-rubber catheter so that by no possibility could I do any mechanical harm. The catheters were kept in carbolic 1 to 80. The same catheter was never used twice on the same day. They were carefully washed after use, and put back in the carbolic. The genitals and hands were always carefully washed in a solution of corrosive sublimate. The great majority of the cases were cases on laboratory milk, where I could control them, and none of the cases, as far as I know, had any harm result. There was one case of cystitis which had cystitis the first time I catheterized. It was treated by being catheterized, and improved steadily under treatment. It seems to me that we do not pay attention enough to the possibilities of renal disease in babies and in small children. We see a baby come in with obscure symptoms. If that were an adult we would examine the urine every time. If it is a baby we neglect the kidneys. I feel sure if we examined the urine of more babies we should find more renal disease than in the past. It does not seem fair to pass a baby that is pale, with intestinal symptoms, etc., without examining the urine and finding out whether there is a renal complication, and it seems to me it is much more important to find out whether there is disease of the kidneys than to be afraid of catheters and not find out.

DR. ROTCH: What Dr. Morse says is true, but I think a great many more examinations are made than are credited to the profession, in young babies, in the last five or six years. I think with such symptoms as Dr. Morse described most of us have the urine examined, and the urine can be obtained, as a rule, without catheterizing. I have it done over and over again, and never have a baby catheterized. I don't say it is not a good thing under certain circumstances to do it, but I do think if you can get the urine in other ways it is a little wiser to do it, and I think the examinations are very largely made now, and especially since we have had our skilled nurses, both in the districts and in private practice. They make the babies comfortable with a little vessel until they pass the urine. I think that this should be said, because it seems to me that there must be many physicians who would make pretty poor work of catheterizing a little baby, and I think it is better to try and get the urine in other ways.

DR. TOWNSEND: Well-brought-up babies are taught at a very early age, in some cases during the first month, even, to pass their water in a small vessel. Where they have not been so trained, I have had very little difficulty in having the nurse or mother collect the water, because if they take off the napkin and it is dry the baby will usually very soon pass water, and it is only necessary to have a vessel handy to catch it. Hence it seems to me catheterization is generally unnecessary, and I believe it should rarely be resorted to, as it is a fact that even in the most skilful hands serious results have followed this apparently simple operation.

DR. MORSE: I might add that none of the babies were catheterized without the consent of the mother, and without the mother being present and seeing it done.

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ASSOCIATION OF AMERICAN PHYSICIANS.

THE Fourteenth Annual Meeting was held in the Arlington Hotel, Washington, D. C., May 2, 3 and 4, 1899. The President, DR. G. BAUMGARTEN, of St. Louis, delivered the introductory address, in which he mentioned the reasons underlying the organization, and the objects and scope, of the Association, and referred feelingly to the death, during the past year, of Dr. William Pepper, of Philadelphia.

DR. J. P. CROZER GRIFFITH, of Philadelphia, read a paper entitled

CONGENITAL IDIOPATHIC DILATATION OF THE COLON.

He cited the causes upon which dilatation of the colon may be dependent, mentioning that it may be either congenital or acquired. The latter variety is commonly due to chronic constipation; the former results either as a consequence of some form of stenosis, or it may be a congenital idiopathic dilatation — in the latter instance there being no discoverable organic cause. A review of the literature was presented, a series of well-authenticated cases being first analyzed, and then mention made of another series of cases regarded by some as instances of idiopathic dilatation of the colon, but regarded by Dr. Griffith as properly to be excluded from this list. A personal observation was narrated, and a review of the symptomatology, diagnosis and treatment of the condition detailed.

Dr. R. H. Fitz, of Boston, read a paper entitled

THE RELATION OF IDIOPATHIC DILATATION OF THE COLON TO PHANTOM TUMOR.

He reported a series of cases suggesting the organic relation of certain cases of phantom tumor and advocated resection of the sigmoid flexure in the treatment of such cases.

In the discussion Dr. William Osler, of Baltimore, presented some photographs of patients with idiopathic dilatation of the colon whom he had observed, and stated that the first patient had been operated upon, and did not die, as erroneously reported in Rotch's book on Pediatrics. The patient improved markedly, as did also another patient who was operated upon. Another case was cited to illustrate the fact that the condition may spontaneously disappear.

Dr. Abram Jacobi, of New York, mentioned the desirability of careful necropsy studies in order to elucidate the subject, and suggested the possibility of an imperfect development of the muscular coat of the colon being the basis of the condition.

Dr. James Tyson, of Philadelphia, read a paper entitled

A CASE OF PRESYSTOLIC MITRAL MURMUR ASSOCIATED WITH SYSTOLIC TRICUSPID MURMUR AND JUGULAR PULSE.

After the description of the case, the mechanism of the production, the quality, the conduction, and the recognition of the mitral presystolic murmur were discussed in detail. Descriptive diagrams were also exhibited.

In the discussion Dr. E. G. Janeway, of New York, stated that as a consequence of considerable study of mitral stenosis he was convinced that a mitral presystolic murmur may be heard at the angle of the left scapula in at least one-third of all the cases.

Dr. J. P. C. Griffith referred to a paper he had presented at the Association meeting some few years ago, in which he reported five or six cases in which mitral presystolic murmurs were very widely distributed.

Dr. Frederick P. Henry, of Philadelphia, reported a case of

MITRAL STENOSIS WITH FEVER (NON-MALARIAL) OF RELAPSING TYPE.

He stated that quotidian and certain forms of intermittent, as well as a continued fever resembling typhoid, are well recognized as symptomatic of endocarditis, but that, as far as he is aware, no case has yet been reported in which fever of the relapsing type and non-malarial in nature occurred as symptomatic of endocarditis. He employed the term to indicate a fever recurring at intervals of about one week, and reported a case that he had observed.

In the discussion Dr. W. W. Johnston, of Washington, referred to a case in which at intervals of about eight days there occurred attacks of fever which were non-malarial in nature, and exhibited some peculiar temperature charts. No note relative to the condition of the heart was made, but there was nothing revealed upon examination of the blood to account for the fever attacks.

Dr. W. H. Thomson, of New York, stated that he considered that the condition of intermittency warranted the presumption that this was connected with the life history of some micro-organism.

Dr. Bond, of Richmond, Md., asked if there had been any gastro-intestinal lesion in Dr. Henry's case, and Dr. Henry responded that there had not.

Dr. Alfred Stengel, of Philadelphia, read a paper entitled

THE IMMEDIATE AND REMOTE EFFECTS OF ATHLETICS UPON THE HEART.

He stated that athletics habitually cause some dilatation of the cardiac chambers at the time of indulgence in a trying sport. The degree of dilatation is more marked in young and inexperienced athletes than in those well trained. Occasionally, acute dilatation, sufficient to cause marked symptoms, is observed. Under these circumstances a trained athlete may recover compensation within a few days. The effect of continued indulgence in severe sports is the development of some cardiac hypertrophy, and athletes who have thus enlarged their hearts frequently suffer symptoms of over-compensation, at least during some years after they have ceased to indulge in athletic exercises. He advocated that all young men should be carefully examined before they be permitted to indulge in such sports, and that while in training they be under strict medical supervision.

In the discussion Dr. Arthur V. Meigs, of Philadelphia, stated his belief in the degenerative nature of cardiac hypertrophy, and said that as a result of the examination of a considerable number of hearts he was convinced that such hypertrophy never subserved a useful purpose.

Dr. C. F. Folsom, of Boston, stated that ill effects sometimes result from unwarranted muscular exercise, but that most of the ill effects are traceable to the damaged hearts of those entering athletics or to the want of medical supervision of those in training.

Dr. William Osler emphasized the frequency of a systolic murmur in the pulmonary area of young athletes and others, and said that this was frequently a cause of the rejection of applicants for life insurance, when in reality it was of no pathologic significance.

Dr. George Dock, of Ann Arbor, stated that athletes with a pulmonary murmur are often capable of a great amount of muscular work, and that this is well illustrated in the case of football players and in some of the volunteers during the late war.

Dr. A. R. Cushny, of Ann Arbor, read a paper entitled

ON THE INTERPRETATION OF PULSE TRACINGS.

His paper was an attempt to interpret clinical pulse tracings in terms of the results of animal experimentation. He stated that there is little in the literature indicative of whether irregularity of the pulse is referable to disease of the auricle or ventricle or both. He detailed his personal experiments, stating that when the dog's heart is exposed and the ventricle stimulated with single electric shocks each stimulus that falls during the non-refractory period is followed by an abortive systole, which is sometimes sufficient to cause a distinct pulse in the arteries, but often fails to do so. The auricle is not affected by the stimulus and continues to beat in its usual rhythm. The next contraction of the ventricle after the abortive systole is induced by an impulse descending from the auricle as usual, and therefore takes place at the exact time at which a contraction would have occurred had there been no abortive systole. The interval between this beat and the last normal one is therefore exactly double the pause between two ordinary contractions. If a sphygmographic tracing be taken, the pulse appears to miss one beat, and the intermission is found to be exactly twice as long as the interval between two ordinary elevations of the tracing. If the auricle be stimulated instead of the ventricle the result at first appears the same, the ventricle contracts prematurely, owing to the artificial impulse descending from the auricle, and there is either a very small undulation in the sphygmographic tracing or a complete intermission. If the duration of this intermission be measured, however, it is found to be less than double the pauses between two ordinary pulsations. In this way the examination of the sphygmogram of the dog enables us at once to determine whether the stimulus was applied to the ventricle or to the auricle, for in the first case the intermission is exactly twice as long as the ordinary interval between two pauses, while in the second case it is invariably shorter. Some consideration will show that the first proposition is true, for any intermission of the pulse due to ventricular disorder, that is, any intermission of the pulse that is due to the ventricle only, must be equal to twice the ordinary pause. Any intermission that is of shorter duration must accordingly be due to the disordered action of the parts of the heart above the ventricle, which determine the pulse rhythm. In cases of heart disease hitherto examined the sphygmogram very often showed intermissions which indicated that the ventricle alone was at fault, while in many others it was clear that the intermission was due to disorder of the rhythmic parts of the heart. In some cases the pulse was so irregular that no certain conclusion could be drawn in the matter. The accurate measurement of the pulse tracing in irregularity of the heart thus affords a means of diagnosticating with considerable probability whether the ventricle or the rhythmic part of the heart is at fault. Tracings exemplifying the results of the investigations were exhibited.

In the discussion DR. GEORGE DOCK presented the heart of one of the patients of whom Dr. Cushny had taken pulse tracings. He stated that the patient had had double aortic and probably relative mitral incompetency, with loss of compensation, anasarca, and distressing pulmonary signs. The striking non-response to treatment was very marked. At the necropsy there was, in addition to the conditions already mentioned, excessive dilatation of the right auricle. The stretching was so marked that in many places the wall was reduced to the thin serous coats. This and several other cases that he had observed suggested that possibly protractive loss of compensation was due to such stretching of the auricle. He emphasized the importance of devoting attention to the study of pulse tracings and the condition of the auricles.

DR. ABRAM JACOBI stated that he now understood the variations in the intermittency of the heart in many diseased conditions, particularly exhausted and fatty hearts, those in which the intermittency is complete being due to ventricular disorder, those in which it is incomplete to auricular disorder. He spoke also of the comparative rarity of auricular as compared with ventricular disease.

DR. CUSHNY stated that he found the auricular intermission in about one-half of the cases examined, but could not state whether the auricle was diseased less frequently than was the ventricle. It is quite possible that the intermittency of the auricular type was due in some of the cases to inhibition.

(To be continued.)

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Recent Literature.

Atlas and Epitome of Operative Surgery. By OTTO ZUCKERKANDL, Privat-docent in the University of Vienna. Authorized translation from the German. Edited by J. CHALMERS DA COSTA, M.D., Clinical Professor of Surgery in Jefferson Medical College. Pp. 395, 24 colored plates and 217 illustrations in the text. Philadelphia: W. B. Saunders. 1898.

The book is an epitome of operative surgery, written to serve as a manual for students. Those operations whose practice on the cadaver forms the basis of instruction in operative surgery, the so-called "typical" ones, such as ligation of arteries, amputations, etc., are described in detail and illustrated in their most important stages. The "atypical" operations, such as gastrostomy, extirpation of the thyroid, resection of the intestine, etc., which are usually performed in actual practice only by the skilled surgeon, are described but concisely. The first fifty-six pages state the general rules relating to dissection, manner of using instruments, repair of tissues, the different methods of suturing wounds. Next is described the ligation of arteries and the different amputations and resections. The latter part of the book is devoted to special operations classified anatomically according to regions, including the head, neck, trunk (chest, abdomen, pelvis, hernia).

The volume is well arranged and convenient in size. It is extensively illustrated. Its plan is, first, to define briefly the character of the operation, then to enumerate the conditions which require it to be performed, finally, to describe its technique. It is a book which may be used to advantage by the medical student, and one which will furnish the surgeon an opportunity to quickly review operative work.

Cleft Palate; Treatment of Simple Fractures by Operation; Diseases of Joints; Antrectomy; Hernia, etc. By W. ARBUTHNOT LANE, M.S. London: The Medical Publishing Company, Limited.

This is a series of lectures which the writer gave, which are interesting in that they give the writer's personal views of the subjects under consideration. The best of these lectures is that on Cleft Palate. The work is of interest and any one who reads it will receive many valuable suggestions. The lecture on Some of the Consequences of Wearing Boots is of real value.

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CANCER AND MODERN RESEARCH.

The formidable and uncompromising character of cancer, the insidious nature of its onset, and the slow and painful character of the deaths which it causes, have rendered it perhaps the most dreaded disease to which mankind is liable. It has therefore rightly been ever the subject of the most earnest and unremitting efforts of the medical profession for centuries, and no endeavor has been spared to ascertain its cause and cure; with the result that although substantial progress in its surgical treatment has resulted in the saving of many who would have succumbed to the disease, as to its causation we still remain in ignorance. All possible methods of statistical inquiry have been employed in the endeavor to ascertain its causation, and association with certain geographic and geological conditions, and mortality statistics have been tabulated in the effort to ascertain whether the scourge is or is not upon the increase. The microscope and all the resources of the laboratory have been brought to bear upon the problem of its origin and development.

The most important results so far have followed the pathological researches which have enlightened us upon its methods of dissemination, and therefore rendered possible its more thorough operative removal, and greatly improved the results of surgical treatment.

But in addition to this improvement in surgical results, pathological study has given us certain information pointing strongly toward the parasitic origin of cancer. Its spreading from a local origin along the lymphatics and veins, its dissemination in the lymphatics of the skin and breast, its metastases and general behavior, all are in harmony with this view of its origin. The fact that it is endemic in certain low, marshy districts, the probability of which at least is established by recently published researches, would be consistent with its etiological relation to some parasite which found favorable conditions outside the body in such regions.

Since Thoma in 1889 described nucleated bodies in cancer cells which he called "parasitic organisms," some at least of which were afterward shown to be degenerations, the question of the parasitic nature of cancer has been hotly argued.

Of late years Metschnikoff has declared that these cell bodies were parasitic protozoa, while Sanfelice and others have maintained that they were blastomycetes. The question of their proper position in the organic world, or of their causative relation to cancer, cannot, however, be said to have been settled.

In the April number of the *Practitioner* the editor has made a very successful attempt to collect a number of articles by distinguished men who are active in the study of cancer, which should embody the latest advances in our knowledge on this subject. The result is an extremely interesting number of that journal, the perusal of which will help those who are inclined to regard pessimistically the results of investigations hitherto to a realization that much has already been accomplished in this field, and that recent investigations point more strongly than ever to the probability that in the near future the remaining steps necessary to the proof of the parasitic origin of cancer will have been successfully taken.

The work of Plimmer, who as a result of the examination of 1,278 cancers has concluded that certain parasitic protozoa which he found in 1,130 cases are the cause of the disease, certainly bears the stamp of careful and discriminating investigation. He has cultivated the organism outside the body, and by injection into animals of the cultures has produced endothelial growths. He has obtained cultures from these growths and inoculated other animals with them, but sufficient time has not yet elapsed to obtain positive results. His investigations, though not yet sufficient to positively prove the parasitic origin of cancer, still point strongly in that direction. Confirmative testimony as to the probable parasitic origin of cancer is also furnished by Park in an able article in the same journal.

The claim of Dr. Bra, of Paris, that he has cultivated and isolated the parasite of cancer and produced cancer in animals by inoculation with the cultures are of interest in this connection, but the accounts published in the *Presse Médicale* and the daily press are too vague to allow of the formation of a definite opinion as to their value.

In two very carefully elaborated papers on the Statistics of Cancer, one by Newsholme and one by Park, diametrically opposite conclusions are reached, since Newsholme concludes on the basis of English statistics that the cancer mortality has not increased of recent years, while Park thinks that the death-rate from cancer is increasing, not only in New York but in all parts of the world, and thinks that the increase will continue until the causative organism is discovered, as was the case with tuberculosis.

With all due respect to the distinguished author, we cannot help thinking that he is unduly alarmed as to the increase of cancer, which, he says, in ten years from now will cause more deaths in New York than pulmonary tuberculosis, small-pox, and typhoid fever combined. We can only hope that if his prophecy is verified it will be on account of the control of the latter diseases by modern sanitary methods, rather than of the increase of the former.

An interesting and judicial paper by Watson Cheyne on the results attained in the surgical treatment of cancer in the various parts of the body calls attention to the progress which has been made in surgical technique, by which the thorough removal of the disease, and consequently more frequent success in operating for cancer, have resulted.

The Treatment of Inoperable Cancer is discussed in a paper by Coley, of New York, who believes that the erysipelas and prodigiosus toxins have an inhibitory action on carcinoma, though this action is less marked than in sarcoma.

The collection of papers gives gratifying evidence of the activity which is being manifested in the effort to learn the cause of cancer, in the hope that thereby some raitonal means of preventive or curative treatment may be discovered. The results already ascertained by the laboratory, maintained by legislative appropriation in New York, under the direction of Roswell Park, are of sufficient value to demonstrate the wisdom of such enlightened action by legislative bodies. It is in such investigations as are made possible by the endowment and equipment of laboratories for the purpose that our chief hope of obtaining substantial results must be placed.

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REFLEX NEUROSES IN CHILDREN.

We are in receipt of a paper by Edgar James Swift, of the State Normal School, Wisconsin, dealing with the above subject. It is one more appeal for care in the interpreting of defects often seen in children, and particularly in those who are going to school. Evidently the writer is a convert to the reflex theory of the origin of many of the more serious neuroses, and sees in the neglect of eyes and throat in the young a prolific source of nerve derangement later in life. While not willing to go so far as the author in his acceptance, for example, of Ranney's extreme views, we are entirely willing to add our testimony to the opinion that too much care cannot be taken in the examination of school children at the very earliest possible moment. We are confident that could this be thoroughly and systematically done by specialists much injustice would be spared many children and the foundation for more stable nervous systems laid.

At the present time in this community an excellent system of school examination prevails, with special reference, however, to the possible spread of contagious disease. Could this plan be extended to include also a skilled examination of the special senses, particularly of the eye, and also of the throat for adenoid vegetations, we have no doubt much good service could be done in preventing the ultimate ill effects of eye strain, or of occlusion of the nares. We are quite in accord with Swift when he writes: "If disorganization of the centres (nerve) is allowed to continue nerve derangement becomes permanent, and the habit of sending out erratic impulses is fixed by the establishment of neural paths of correlated disorder." This is unquestionably true in general, but we are inclined to think that so serious a result happens to but few school children. In this, however, as in any other matter of public health, we do well to be on the side of overcaution.

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MEDICAL NOTES.

Arrival of Transport "Grant." — The transport *Grant* arrived at San Francisco on April 29th, bringing 190 sick and wounded from Manila.

Cerebro-spinal Meningitis in Washington, D. C. — During the months of March and April of this year there were 53 deaths reported as having occurred in Washington from this disease.

A Centenarian. — Mrs. Lucinda Pratt, of Chicago, passed her one hundred and third birthday last week. She was born in Massachusetts, and preserves a vivid remembrance of the War of 1812.

A Dinner to Prof. John Guiteras. — A dinner will be given at the University Club of Philadelphia of Prof. John Guiteras as a mark of their affection on Wednesday evening, May 24th, tendered by friends and esteem, and in recognition of his professional attainments and his ardent patriotism. The committee in charge are H. C. Wood, W. W. Keen, George E. DeSchweinitz, Edward Martin, William Osler, J. William White, H. A. Hare, J. H. Musser.

Daily Cost of Sick Soldiers. — From reports received from several medical officers, the sum of 60 cents per diem, authorized in lieu of rations for the subsistence of the sick in the United States Army, appears to be well in excess of the ordinary requirements of the service in this country. At the Division Hospital at Anniston, Ala., where a total of 1,009 cases were treated during a period of five months, the average daily cost per man was 28 cents. The food issued was supplied according to the needs of individual cases, and included such foods as milk, canned and prepared soups, meats, oysters, eggs, butter, malted milk and various farinaceous preparations.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, May 10, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 36, scarlet fever 29, measles 115, typhoid fever 5.

Death of William L. Russell, M.D. — In the death of Dr. William L. Russell, which has just occurred at Barre, Vt., Harvard College and the Harvard Medical School lose their oldest graduate. Had he lived he would have been one hundred years old in

October. He was graduated in the class of 1826 at Harvard College, and received the degree of M.D. at the Medical School in 1831. He remained comparatively well up to within a few days of his death.

NEW YORK.

Launching of the new Floating Hospital. — The launching on May 4th of the new floating hospital of the St. John's Guild, which was named the *Helen C. Juillard*, after the donor, Mrs. Juillard, proved a very pleasant occasion. The thousand guests of the Guild were on the old hospital barge, *River Belle*, towed by two tugs, and the ceremony was honored by the presence of Admiral Philip and a party of officers from the Brooklyn Navy Yard, on a Government tug. The christening was accompanied by the release of a number of pigeons from a cage at the bow of the boat, in place of the breaking of the traditional bottle of champagne, and at the same instant a detail of sailors from the receiving-ship *Vermont* ran up a set of flags which had been presented by Ex-Mayor Strong.

Bravery of Prisoners at Blackwell's Island. — Commissioner Lantry, of the Department of Correction, has sent a communication to Governor Roosevelt calling attention to the heroic work performed by a number of the prisoners in the penitentiary on Blackwell's Island on the occasion of the burning of the hospital of that institution on April 22d, and recommending that some recognition should be made of their services. Among those who especially distinguished themselves was a woman, named Annie Walden, serving a life sentence for the shooting of her husband. She rescued from the flames a two-year-old child that was deserted by its mother in the panic of the moment.

Appropriation for Forest Preserves. — The Governor has signed the bill appropriating $50,000 for the extension of the Catskill Mountain forest preserve in Delaware, Green, Sullivan and Ulster Counties.

Summer Quarantine Regulations. — The summer quarantine regulations at the port of New York went into effect on May 1st. All coastwise vessels from points south of Cape Henlopen are now required to stop for examination by the health officer's staff, and extra precautions are taken in regard to vessels from Cuba.

Meeting of Nurses' Associated Alumnæ. — The second annual meeting of the Nurses' Associated Alumnæ of the United States and Canada was held at the Academy of Medicine on May 1st, 2d and 3d. The address of the president, Mrs. Hunter Robb, of Cleveland, was in part devoted to a consideration of the lessons to be learned from the late war in regard to nursing and the influence that the war was likely to have upon nurses in the future. She also spoke of the wonderful development of trained nursing in the United States during the last few years, and deplored the rapid increase of schools without a corresponding increase in the quality of those trained in them as likely to bring discredit upon their profession.

Skene Hospital for Self-Supporting Women. — The new hospital in Brooklyn, of which Dr. A. J. C. Skene is to be the head, has just been incorporated under the name of the "Skene Hospital for Self-supporting Women," instead of the "Hospital for Breadwinners," as was at first contemplated.

Gift of J. Pierpont Morgan. — A recent cablegram states that J. Pierpont Morgan, the New York banker, who is now taking a course of treatment at Aix-les-Bains, has made the hospital there a gift of fifty thousand francs.

Death of Dr. Willard P. Bowser. — Dr. Willard Parker Bowser, of Brooklyn, died on May 4th, at the age of forty-nine. He was a native of Canada and a graduate of the Medical Department of the University of the City of New York.

Miscellany.

INCREASED VACCINATION IN ENGLAND.

On the occasion of a recent dinner in London the president of the Local Government Board made an interesting announcement relative to the effect of the new Vaccination Act. He stated that from information just received it appeared that the Vaccination Act was going to have a precisely opposite effect to that which had been expected of it. The head of his medical department had written him that day: "I have requested that any general information as to either increase or decrease in the number of children vaccinated this year as compared with the corresponding period of last year may be noted by the inspectors of the Board who inspect the work of public vaccination. As yet I have not received a single account of any decrease. On the other hand, the inspectors inform me that there is distinct evidence of a general increase in the amount of vaccination going on, and in a number of cases the actual statistics recorded are highly satisfactory in this respect. In several such instances the increase in the number of certificates of successful vaccination sent in has ranged from 25 to 100 per cent." The increase was attributed by this gentleman to the system of domiciliary vaccination, and the provision of a better and purer kind of lymph, which had relieved the apprehensions of a great many people who were formerly opposed to vaccination.

Obituary.

DR. WILLIAM A. GORTON.

Dr. William Arthur Gorton, superintendent of the Butler Hospital for the Insane at Providence, died at the Boston City Hospital, May 1st, after an operation for gallstones, which was successful, but after which he did not rally and recover, owing to an ulcer of the duodenum, which had not been suspected, and which had produced a condition which must soon have proved fatal of itself.

Dr. Gorton was born in North Brookfield, N. Y., June

21, 1854. On his father's side he was descended from one of the early settlers of Rhode Island, and on the maternal side from a family prominent among the early residents of Massachusetts. He graduated in 1873 at Whitestown Seminary, N. Y., and entered the medical department of the University of the City of New York in 1874, where he was graduated in 1876. In April, 1876, he entered Bellevue Hospital, and after serving eighteen months in that institution as house-officer went to Cooperstown, N. Y., and commenced practice in partnership with Dr. L. H. Hills, now of Binghamton. A few months later he was offered a position as assistant physician in the New York State Asylum for Insane Criminals, which he accepted in June, 1878.

In January, 1882, he was appointed assistant physician to the Danvers Lunatic Hospital, of which institution he was chosen superintendent in 1886. He resigned in May, 1888, to become superintendent of the Butler Hospital in Rhode Island, which position he held at the time of his death, having been selected from a large number of candidates, and where he proved a worthy successor to the late Dr. Goldsmith.

Dr. Gorton was a member and president of the Rhode Island Medical Society, and a member of the American and the Boston Medico-Psychological Associations. He was also a member of the St. Botolph Club of Boston, and of the Providence Athletic Association. He was married June 8, 1877, to Miss Mary Elizabeth Langley, of Danvers. They had four children: Mary Putnam (deceased), Janet Langley, Miriam Rogers and William Tillinghast Gorton.

Personally Dr. Gorton was one of the gentlest of gentlemen, and his early death, in the forty-fifth year of his life, will be a loss to friends and patients to which they will hardly be able to reconcile themselves. The death of one of his parents when he was only nine years old, and of the other when he was fourteen, deprived him of the college training which he so much desired, but which he was all the more anxious to provide for a younger brother, whose incurable illness, at the beginning of his career, was a lifelong grief from which Dr. Gorton never fully rallied and which was perhaps the beginning of the ill health which resulted so disastrously.

As a physician he was faithful to every duty even to the point of disregard of himself. In the courts his opinions were clear and honest and inspired confidence. As a hospital superintendent he made for himself a place which his successor will find the greatest difficulty in filling.

Correspondence.

THE DUCTUS COMMUNIS.

Dear Journal: —
I have read a squib,[1]
Wherein, without the slightest fib,
A young M.D. describes the tamin',
By means of Winslow's poor foramen,
Of coltish students, all astray
Where anatomic fields are gay.
You published it ten months ago,
A long gestation time, we know.
I read it with extreme amusement,
Divined what all the leading cues meant,
When lo! As if by *hocus pocus*
I found *communis choledóchus.*
"My boy," quoth I — and said a cuss —
"That duct is called cholédochus."
Said he, "We think this accent right
According to Professor Bright,
Who, with no earthly thought to joke us,
Calls it *communis choledóchus.*"
"Mercy!" I cried; "so that 's the accent,
Sent out within his room and back sent.
Χολή — that 's bile — the letters give;
And then comes *δέχομαι*, receive.
Behold its little ἒ *ψιλόν!*
It makes as short an ὂ *μικρόν.*
The word, as shaped by Latin hammers,
Must take the rule of Latin grammars,
That when the penult vowel 's short
The accent falls one place before 't.
Full well I know your good Professor —
Long years away be his successor!
He beats me on all nerves asthenic,
But I beat him on roots Hellenic.
I feel as in a lens's focus,
When on my ear rings *choledóchus;*
And one must gather lots of gall
Who gives the word such sound at all.
Though all the doctors should unite
To call that sort of accent right,
Just as they might have all concurred in
Analysis of biliverdin,
I beg each friendly Medicus
To call that duct *cholédochus,*
And since we must resort to Greek,
When compound notions we would speak,
Not to insult the noble tongue
By uttering its vowels wrong."

(Signed) Philiater, not M.D.;
Though thrice a doctoral degree
I hold, yet in the whole of them
There is not either "D." or "M."

[Special Correspondence.]

SANITARY NOTES ON JAMAICA AND PORTO RICO.

April 14, 1899.

To the Editor: — A short stop at Port Antonio, Jamaica, was full of both pleasure and interest, the latter especially, as it afforded an opportunity of seeing what a century of Anglo-Saxon domination had effected, in the way of civilization and sanitation, under tropical conditions practically analogous to those of our new possessions.

The scenery of the island is both grand and beautiful, while the exuberance of the tropical vegetation and soft moist atmosphere gives one almost the impression of being in some vast hothouse. The island teems with human life, and, except in the interior, appears everywhere to be under the highest cultivation, cane and cocoanuts filling the valleys, bananas covering the slopes and coffee-trees the mountain sides. Nature is certainly very generous in her gifts to Jamaica. So far as one could see, the choicer portions of the island are under the control of the Boston Fruit Company, which now grows its own fruits, instead of depending for a supply upon the somewhat uncertain Jamaican. This company also conducts an excellent little hotel at Port Antonio, admirable in appointments and beautiful in its surroundings.

The negro population outnumbers the white in the proportion of forty to one, and this difference is steadily increasing. I was told by the port physician that the marriage ceremony is largely disregarded, over half the births being illegitimate. Jamaica possesses a large population of East Indian coolies, imported as laborers, and their curious and flimsy little bamboo huts were to be seen on every side. I noticed that these coolies invariably built their houses on hillsides, the steeper the better, presumably for better drainage and to obtain the full cleansing effect, around and under their dwellings, of the heavy tropical rains. Port Antonio itself is typically English in its quaint old architecture and construction. The roads, in and out of the town, were well made and cared for, and everything appeared clean and well kept.

Yellow fever, formerly endemic in Jamaica, has been stamped out by excellent sanitary measures energetically enforced. We can certainly do as much for Cuba as England has done for Jamaica — but it is going to take time.

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[1] The verses referred to were published in the Journal for June 23, 1898, and contained the lines:

I 'm a poor abused foramen,
And in front of me is tucked
The communis choledochus, which
Is nothing but a duct.

The island maintains a careful quarantine against Mexico, Cuba, Santo Domingo and Porto Rico, and on account of that fact and her own excellent sanitary conditions, her trade with this country is uninterrupted, where that of her neighbors is practically destroyed for half of each year. The death-rate from tuberculosis, as in all the West Indies, is high, and venereal infection is widespread. Infantile mortality is said to be great, chiefly from tetanus of the new-born and intestinal disorders, resulting from poor care and improper food. The children I saw, however, looked healthy and well nourished and I failed to see the protuberant "mango belly," which is such a marked characteristic of juvenile Cuba. Much to the credit of the English, evidences of miscegenation are absent, and the white, black and East Indian races rarely appear to mix.

Ponce, the second largest town in Porto Rico, is located about two miles from its harbor, and is not greatly different in size and appearance from such Cuban cities as Matanzas or Cienfuegos. Like San Juan, Ponce presents evidence of American control in its comparative cleanliness and recent sanitary improvements. Porto Ricans are very anxious to be thought good Americans, and are fortunately thoroughly imbued with the idea that cleanliness and domestic hygiene, as far as they understand the term, are prime requisites in the attainment of this object. In the schools the importance of cleanliness is impressed upon the rising generation, and people in Porto Rico, as in Santiago, have already reached a point where they observe and report to the health authorities the sanitary delinquencies of their less advanced neighbors. Criticism and complaint on sanitary matters from the Spanish-American are of the utmost value, as marking an end of the passive indifference to such subjects under which he and his forefathers have lived — for a critical people is necessarily a progressive people. Such criticism is full of promise for the sanitary future.

Yellow fever is not endemic in Ponce, nor, for that matter, in any part of the island, and when introduced in the past has rarely risen to the dignity of an epidemic. As a whole, Ponce is fairly healthful. I am told that the annual death-rate is 27, but that this is largely from the great mortality in infancy and childhood, due to enteric diseases induced by poor and improper food and the almost universal practice among the poorer classes of not clothing their children until they are several years of age. In the wet season this lack of proper protection induces congestive diarrheas, which result fatally in a large number of cases. In spite of the high death-rate the large number of children in evidence is a marked feature of Porto Rican life. The fecundity of these people must be very great, as nearly every little palm hut has its family group of a half a dozen or more. The practice of leaving the small children unclothed prevails to some extent in Cuba, more especially in the rural districts. Here in Porto Rico, in spite of the orders of General Henry, it is almost the rule among the country people. Girls are usually permitted to don a single cotton garment when five or six years old, but boys of eight and ten years of age, naked as when they were born, are frequently seen.

While the Porto Ricans are not a particularly moral people, still they are by no means as indiscriminate in their relations as the returns of marriages and births would seem to show. It is a fact that barely more than a third of the children on the island were born in wedlock, but investigation shows that the parents never went through the ceremony of marriage simply because, under the old *régime*, the Spanish priest charged as his wedding fee as much as the common laborer could earn in six months. There being no penalties for cohabitation the poorer classes found it preferable to live together without marriage, and, so far as one could learn, they prove to be excellent parents and are true to each other in their family relations.

While bathing of the person does not appear to be particularly popular among these people, the women, especially in the country, appear to devote a large portion of their energies to the washing of clothes. Nearly every hut has its collection of drying linen, and nearly every water-course has its group of women beating wet clothing against the flat stones of the river bed. This method of washing may be picturesque, but is decidedly unsanitary, since, during the dry season, these streams are often small and usually form the water-supply for the people living along the banks. Sanitary conditions in the smaller country towns, even those on the line of the magnificent military road from Ponce to San Juan, are still bad, in spite of recent severe condemnation from General Henry. I am convinced, however, that these unsatisfactory conditions will soon be changed, as only ignorance, rather than indifference or unwillingness, stands in the way of their removal.

About eighteen miles from Ponce, on the road to San Juan, are the Coamo Hot Springs — locally reputed as of great efficiency in syphilis, gout, rheumatism and skin diseases. Quite a large and well-ordered bath house has been here erected, together with an excellent hotel capable of accommodating about one hundred and twenty-five guests. A Spanish medical man is in attendance, and during the rainy season the baths and hotel are said to be well patronized. The Captain-General had a residence here, which is now used as headquarters for the United States Army vaccine farm located at this place. The waters had a temperature in the baths of about 100°-115° F., and were strongly sulphurous. They are used both internally and externally and are said to have marked alterative properties, particularly in rheumatism. This disease is especially common among the Porto Ricans, and as they nearly all, from necessity, subsist almost entirely upon bananas and other vegetable diet, this prevalence of rheumatism would seem to require explanation at the hands of Dr. Haig and his following of uric-acid enthusiasts, who see such dire possibilities in meats and nitrogenous foods.

Most interesting and extensive work is now being carried on at Coamo Springs by the army medical authorities in the production of the vaccine virus required for the wholesale vaccination of the Porto Ricans, now going on. The vaccine farm is under the able management of Major Azel Ames, brigade-surgeon, United States Volunteers, — a Massachusetts man,— who is assisted in his work by five contract surgeons and about sixty members of the army hospital corps. At present the vaccine herd numbers about 450 head and vaccine points are being turned out at the rate of 16,000 per diem — for the sake of economy, the points being sterilized and recharged after use. Nearly all the animals used in the production of the virus have been loaned to the station, without charge, by the Porto Rican farmers — a fact which sufficiently illustrates the interest and good-will with which American innovations are being received. The quality of virus so produced has been excellent, the extensive employment of the tuberculin test demonstrating the existence of but little tuberculosis among the cattle of the island. In a large number of vaccinations made with virus shipped from the United States only about five per cent. were successful, owing to its rapid deterioration under tropical climate and conditions. Of the vaccinations made with the locally produced virus over 95 per cent. have been successful. It is interesting to note that not a single refusal to undergo the operation has as yet been reported. For convenience in vaccination purposes, the island has been divided into five districts, each with its chief medical officer and his corps of vaccinators. The vaccination has now been going on for several months, and it is expected will be entirely completed by the middle of June. The work has been greatly facilitated by the careful census returns of the Spaniards, whose system of direct taxation rendered them fully alive to the desirability of the careful registration and location of the tax-payers. Great credit for the conception and execution of this work is due Chief-Surgeon Hoff and his able assistants. The report on this work of vaccination will be most interesting and valuable, treating as it will of every phase of the vaccination of nearly a million and a quarter souls, "by order," in a period of less than six months.

From Coamo one climbs through beautiful mountain scenery to Aibonito, where the Spaniards had recently constructed barracks for their convalescent soldiers on account of its altitude, bracing air and healthfulness. The other little country towns along the road are squalid and unattractive and are capable of much improvement.

San Juan itself is beautiful from a distance, and also bears close inspection well. From its location, it should be most healthful. Situated on a high, narrow ridge, its natural drainage is excellent, while it is constantly swept by the strong ocean breezes. The streets are well paved, kept in excellent repair and were extremely clean. The town is very compact in its construction, but the evils of overcrowding so apparent in the larger Cuban cities are here absent. With the installation of a complete sewerage system, and an enlargement of the water supply, San Juan would be almost ideal for winter residence.

In comparing Cuba with Porto Rico one cannot but be strongly impressed in favor of the people of the latter. They are alert, eager and imitative, and, while long grievously oppressed by Spanish taxation, they have not felt the curse of war. Realizing their own deficiencies they are anxious to conform to better customs and habits. More cleanly than the Cubans in habits and surroundings, without the endemic existence of yellow fever, and with smallpox rapidly disappearing under thorough vaccination, the sanitary future of Porto Rico is promising. X.

THE CENTENNIAL OF THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

Baltimore, Md., April 28, 1899.

Mr. Editor: — The gathering of a thousand physicians from different parts of this and other States to celebrate the centennial of the Medical and Chirurgical Faculty of Maryland was a noteworthy event in the history of medicine in that State. The meeting opened on Tuesday evening, April 25th, in McCoy Hall, Johns Hopkins University, Governor Lowndes, of Maryland, presiding. Cardinal Gibbons, attired in his red robes, made the invocation, and Dr. S. C. Chew, president of the Faculty, delivered the address of welcome, in which he spoke of the close of previous centuries having witnessed some of the most striking events of history, while the close of our present era had been marked by some of the greatest discoveries of science. He then reviewed many of the most important results of scientific investigation, which, in the case of terrible and formerly greatly dreaded diseases, had caused them either to be driven from the civilized world or had shorn them of their terrors. He also spoke of vaccination, the study of disease pathologically and the great discoveries of anesthetics and antiseptics. A reception to the visiting physicians and the ladies of their party followed the address. All the hospitals and medical school were open to the visitors and there were a number of clinical lectures and demonstrations given at each hour of the morning in the various hospitals. In the afternoons scientific papers were read by especially invited physicians in McCoy Hall, while the evenings were given up to private dinners and receptions.

The annual dinner was given on Thursday evening, and among the visitors present were Surgeon-General Sternberg, Dr. Jacobi, of New York, Drs. H. C. Wood and James Tyson, of Philadelphia, Dr. Geo. Ben Johnston, of Richmond, and Dr. W. W. Johnston, of Washington.

On Wednesday a demonstration of much interest was given by Dr. Keirle of the Pasteur methods in the diagnosis and treatment of rabies. This department of the College of Physicians and Surgeons has been established for two years, and eighty cases have been successfully treated.

At the Johns Hopkins Hospital Dr. Osler gave a clinical lecture on cerebro-spinal fever, in which he mentioned the three important points in connection with the disease, (1) the discovery of the disease itself; (2) Quincke's discovery of the importance of lumbar puncture, and (3) the discovery of the specific organism. Dr. Osler said that the symptoms of the disease were very diverse, and that cases might last from six hours to six months; the diagnosis was not difficult in an epidemic but very difficult in isolated cases; the characteristic features were headache, abrupt onset, vomiting, retracted head, much pain and a very marked erythematous characteristic rash. Three cases of the disease were shown.

Dr Thayer also gave a clinical lecture on the causation of malaria, in which he spoke of it in connection with the recent literature on insect bites. Recent researches have been made on malaria in Italy and India. Up to a year ago it was studied under the three following heads: (1) the disease was said to come from the air and was supposed to be taken in by inhalation; (2) water taken into the stomach, and indeed anything taken into the gastro-intestinal tract containing poison, was supposed to cause the disease. The third way by which the malarial poison was said to gain access to the body was through the bites of insects. Under the second head many experiments were made both in Italy and Sicily. Persons were given water known to contain the malarial organism; this water was also injected in large quantities into the rectum and even the dew which contained the malarial germ in large quantities was taken into the stomach without causing the disease. One investigator drank blood drawn from a malarial case without effect. No infection followed, and indeed careful analysis fails to show that infection occurs in this way. It is hard also to prove that the disease is carried in the inhaled air, but it is also hard to disprove this. It is known, however, that inoculation carries the disease. The blood injected from a diseased person to a healthy person will carry the infection. Some years ago Laveran advanced an hypothesis that infection came from the bite of a mosquito and from other insects. Since that expression of opinion other interesting diseases have been shown to be due to the bite of insects. For example, Texas fever is caused by an organism which has been found often in the cattle tick which infects these animals, but it is not possible to trace the complete cycle of this parasite. The cycle of the existence of the malarial parasite is from twenty-four to thirty-six or forty-eight hours; at the end of that time it breaks up into little bits which infect new blood corpuscles. Some of these parasites do not break up but turn into flagellated organisms. These under the microscope are seen to rush about the field. Their function is unknown, but, according to Dock, they had something to do with the life of the parasite outside of the body. Patrick Manson had also made some studies of these organisms and found that the mosquito in Eastern countries was the intermediate host of the filaria sanguinis hominis. He had examined the mosquito very carefully under the microscope and had discovered flagellated bodies in its stomach, and this mosquito had bitten infected persons. Surgeon-Major Ross had made some very elaborate experiments with mosquitos on pigeons and other birds. He allowed mosquitos to bite some birds and noted the transmission of the malarial parasite from the mosquito to the bird. There were pigmented bodies in the muscle walls of the stomach of the mosquito, and these he later found in the birds'. He observed the growth of the pigmented bodies in the walls of the mosquito's stomach. When these small bodies were let loose he also found them in the salivary glands of the mosquito. His experiments with the infected and the non-infected birds proved the correctness of his studies. These same experiments were also done in Italy, but in a different way. Grassi found two or three varieties of mosquito that stood in close relation to malaria. About this time the work of Ross became familiar to Grassi and was repeated in Rome. The name of the variety of mosquito that gave the most satisfactory results in study was the anopheles claviger. Some of the mosquitos were caught and put on infected persons, and after a short time they were killed and the sporozoön was found in the stomach walls and the salivary glands of the mosquito. This shows that malaria may be acquired through the blood of infected persons, and it may be thus seen that it is possible for one person to infect his neighbors. Analogy would tend to show that this disease is carried only through bites. This the Italians believe. The question is, How does the mosquito obtain the parasite? In any other way than by biting infected persons? This is not known. Dr. McCallum, of the Johns Hopkins University, was the first one to show that these flagella are probably living organisms and they likely have something to do with the sexual life of the parasite. Dr. Thayer then showed some of the specimens sent by Surgeon-Major Ross, of England.

Dr. William S. Halsted exhibited some cases of hernia on which he had operated, and spoke of his method, and he also showed some cases of mammary cancer in which the breast had been removed, and explained his method of cleaning out the axilla and removing much of the pectoral muscle.

Dr. Howard A. Kelly gave a skilful demonstration of the examination of the rectal mucous membrane and of a large part of the lower intestinal tract by the use of a rectoscope. He also demonstrated very beautifully the ease with which he examined the female bladder and catheterized the ureters.

At the scientific meeting in the afternoon Dr. Herman Knapp, of New York, read a paper on "Some Landmarks in the History of Ophthalmology." The "Limitations of Conservative Surgery in the Female Generative Organs" was the subject of a very practical paper by Dr. George Ben Johnston, of Richmond, Va., in which he said that every organ had a right to exist until it was so far diseased as to be beyond repair or to endanger other parts of the body. The points to be considered in this work were the age of the patient, the nature of the malady, the extent of the lesion, existence of complex pathological states, the patient's physical condition, and the probable necessity of a second grave operation. The organs considered were the ovary, tubes, and uterus. In the application of conservatism the soundest judgment, the ripest experience and the most consummate skill must be present. The difficulties which encompass such work are very grave, for often prolonged effort increases the liability to shock.

Dr. Janeway and Dr. Samuel Alexander, of New York, were unable to be present.

In the evening the annual oration was delivered by Dr. W. W. Keen, of Philadelphia, on "The Debt of the Public to the Profession," in which he showed how the diseases that in former times so frequently visited all civilized countries had been almost entirely stamped out and only existed in those countries where the laws of health were constantly and grossly violated. He also enlarged on the numerous and wonderful discoveries in the medical world since the beginning of the century.

Thursday was taken up with clinics and demonstrations at the University of Maryland, the Baltimore Medical College, the Woman's Medical College and the Maryland Medical College.[1] In the afternoon the institutions on the west side of the city were open for inspection and at Mt. Hope Retreat for the Insane a sumptuous luncheon was served. At the scientific meeting Dr. Jacobi read a paper on "European Medicine about 1799," and Dr. Bradford one on the "Study of the Human Gait." Dr. H. C. Wood, of Philadelphia, read an interesting and amusing paper on "Nostrums, the Profession and the Law." Dr. Park, of Buffalo, was not able to be present. Dr. Welch, of the Johns Hopkins University, gave a short and very interesting talk on the collection of medical books and manuscripts, the oldest dating back to 2000 B. C. Besides these books there was quite a unique collection of portraits, diplomas and a variety of things connected with the history of medicine.

At a business meeting on Friday the following officers were elected for the ensuing year: Dr. C. Birnie, President; Vice-Presidents, Dr. Samuel Theobald and Dr. David Street; Secretary, Dr. J. W. Lord; Treasurer, Dr. T. A. Ashby.

METEOROLOGICAL RECORD

For the week ending April 29th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	Weath'r.* 8.00 A. M.	Weath'r.* 8.00 P. M.	Rainfall in inches.
S.. 23	30.15	62	77	48	47	61	54	W.	N.E.	9	2	C.	C.	
M.. 24	30.19	54	59	48	40	40	40	N.E.	S.	11	11	C.	C.	
T... 25	30.00	64	80	47	70	68	69	S.W.	N.	8	8	O.	O.	
W.. 26	29.96	56	65	47	75	83	79	N.W.	E.	7	10	O.	C.	
T... 27	30.25	50	53	46	86	60	73	E.	S.	11	10	F.	C.	
F... 28	30.25	57	71	43	43	24	34	S.	S.W.	6	15	C.	C.	
S... 29	30.19	61	83	45	42	50	46	W.	S.W.	12	16	C.	C.	
☞	30.11		70	46			56							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 29, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Percentage of deaths from Acute lung diseases.	Percentage of deaths from Diarrheal diseases.	Percentage of deaths from Typhoid fever.	Percentage of deaths from Diphtheria and croup.
New York . .	3,438,899	—	—	—	—	—	—	—
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	501	125	16.00	15.50	1.80	7.40	3.60
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	243	61	5.33	20.09	—	.82	1.64
Baltimore . .	506,389	158	42	6.93	10.08	2.52	—	1.89
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	101	42	4.85	18.43	—	1.91	.97
Washington .	277,000	99	29	10.10	15.15	1.01	3.03	1.01
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	54	11	9.25	18.50	5.55	1.85	—
Nashville . .	87,754	38	15	7.89	5.26	—	2.63	—
Charleston . .	65,165	44	16	13.62	2.27	9.08	2.27	—
Worcester . .	108,240	25	12	20.00	12.00	—	—	4.00
Fall River . .	95,919	32	7	34.43	3.13	31.30	—	—
Cambridge . .	89,724	23	3	8.70	13.05	4.35	—	—
Lowell . . .	88,641	42	14	14.28	16.66	—	—	4.76
Lynn	66,703	—	—	—	—	—	—	—
New Bedford .	66,340	22	6	4.15	12.45	4.15	—	—
Somerville . .	61,101	28	12	21.42	14.28	10.71	—	—
Lawrence . .	57,263	25	10	8.00	12.00	4.00	—	—
Springfield . .	56,501	16	1	6.25	6.25	—	—	—
Holyoke . . .	43,424	13	2	—	7.69	—	—	—
Brockton . .	37,278	16	3	6.25	12.50	—	—	—
Salem	36,883	8	5	—	—	—	—	—
Malden . . .	34,613	11	3	—	9.09	—	—	—
Chelsea . . .	33,468	15	2	6.66	—	—	6.66	—
Haverhill . .	32,022	6	2	16.66	—	—	—	—
Gloucester . .	30,589	4	2	—	—	—	—	—
Newton . . .	29,716	7	2	14.28	—	—	—	—
Fitchburg . .	29,438	8	4	12.50	12.50	—	—	—
Taunton . . .	28,167	14	2	7.14	21.42	7.14	—	—
Everett . . .	25,338	8	4	—	12.50	—	—	—
Quincy . . .	23,549	8	3	—	50.00	—	—	—
Pittsfield . .	22,643	1	—	—	—	—	—	—
Waltham . .	21,812	6	—	—	16.66	—	—	—
North Adams .	20,971	7	3	14.28	14.28	—	14.28	
Chicopee . .	17,842	6	2	—	16.66	—	—	
Medford . . .	16,511	3	—	—	—	—	—	—
Newburyport .	14,915	3	1	—	—	—	—	—
Melrose . . .	14,032	3	—	33.33	33.33	—	—	—

Deaths reported 1,607; under five years of age 448; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 173, acute lung diseases 229, consumption 214, typhoid fever 49, diarrheal diseases 38, diphtheria and croup 31, cerebro-spinal meningitis 31, whooping-cough 7, erysipelas 5, scarlet fever 2.

From cerebro-spinal meningitis Philadelphia 12, Washington 5, Baltimore and Worcester 4 each, Boston and Somerville 2 each, Charleston and Newton 1 each. From measles Boston,

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[1] Probably the most original work in this school was the explanation by Dr. R. W. Johnson of his proposed turning off the carotids in operation on the head and neck. This he has never tried on a human being, but he is satisfied from his work on dogs that it is practicable and easy. He passed a ligature loosely around the carotid without tying it tight, and put the two ends knotted through a slit in a short stick, which the assistant holds. By raising this stick the carotid on either or on both sides could be compressed and the blood supply shut off.

Pittsburg, Nashville and Lowell 2 each, Somerville and Fitchburg 1 each. From whooping-cough Philadelphia and Lowell 2 each, Boston, Fall River and Brockton 1 each. From erysipelas Philadelphia and Boston 2 each, Springfield 1. From scarlet fever Cambridge and Melrose 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending April 22d, the death-rate was 18.3. Deaths reported 3,993; acute diseases of the respiratory organs (London) 277, measles 120, whooping-cough 107, diphtheria 64, diarrhea 42, fever 31, scarlet fever 20.

The death-rates ranged from 11.8 in Cardiff to 23.4 in Liverpool; Birmingham 20.8, Bradford 17.2, Croydon 15.1, Gateshead 16.1, Hull 16.0, Leeds 19.1, Leicester 17.8, London 17.2, Manchester 22.4, Newcastle-on-Tyne 22.6, Nottingham 18.5, Plymouth 21.8, Sheffield 17.8.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 6, 1899.

M. C. Drennan, medical inspector, ordered to additional duty at the Marine Recruiting Rendezvous, Philadelphia, Pa.

W. C. Braisted, passed assistant surgeon, detached from the Naval Hospital, Newport, R. I., and ordered home to be ready for orders for sea duty.

J. J. Snyder, assistant surgeon, detached from the "Wabash" and ordered to the Naval Hospital, Newport, R. I.

A. L. Gihon, medical director, retired, granted leave for one year with permission to leave the United States.

J. M. Steele, surgeon, ordered to temporary duty at the Recruiting Rendezvous, Baltimore, Md.

S. B. Palmer, assistant surgeon, detached from the "Annapolis" and ordered home.

W. M. Garton, assistant surgeon, detached from the Naval Hospital, New York, and ordered to the "Annapolis."

J. D. Gatewood, surgeon, ordered to the Bureau of Medicine and Surgery for temporary duty.

C. U. Gravatt, medical inspector, detached from the "New York" and from duty as fleet surgeon of the North Atlantic Squadron, and ordered home to wait orders.

P. Fitzsimons, medical inspector, detached from the "Brooklyn" and ordered to the "New York," as fleet surgeon of the North Atlantic Squadron.

G. E. H. Harmon, surgeon, detached from the "Amphitrite" and ordered to the "Brooklyn."

J. M. Edgar, surgeon, detached from the "Richmond" and ordered to the "Amphitrite."

G. P. Lumsden, surgeon, detached from the "Franklin" and ordered to the "Richmond."

S. H. Dickson, surgeon, detached from the "Massachusetts" and ordered home to wait orders.

J. C. Byrnes, surgeon, detached from the Norfolk Navy Yard and ordered to the "Massachusetts."

F. W. Olcott, passed assistant surgeon, ordered to the "Texas."

G. D. Costigan, assistant surgeon, detached from the "Indiana" and ordered to the Naval Hospital, Chelsea, Mass.

M. S. Elliott, assistant surgeon, detached from the "Texas" and ordered home to wait orders.

J. H. Payne, assistant surgeon, detached from the Naval Hospital, Chelsea, Mass., and ordered to the "Indiana."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING MAY 4, 1899.

Wheeler, W. A., surgeon. Department letter of April 21, 1899, granting Surgeon Wheeler twenty-seven days' leave of absence from June 4, 1899, amended so that the said leave shall take effect from May 5, 1899. May 4, 1899. Department letter of April 20, 1899, accepting the resignation of Surgeon Wheeler to take effect from June 30, 1899, amended so that said resignation shall take effect May 31, 1899. May 4, 1899.

Brooks, S. D., surgeon. Relieved from duty as member of Board convened to meet at San Francisco, Cal., May 2, 1899, for the examination of candidates for appointment as assistant surgeon in the Service. May 3, 1899.

Magruder, G. M., passed assistant surgeon. Granted leave of absence for fourteen days. April 30, 1899.

Perry, T. B., passed assistant surgeon. Detailed as member of Board convened to meet at San Francisco, Cal., May 2, 1899, for the examination of candidates for appointment as assistant surgeon in the Service. May 3, 1899.

Wertenbaker, C. P., passed assistant surgeon. To rejoin station at Wilmington, N. C. May 3, 1899.

Hastings, Hill, assistant surgeon. Relieved from duty at Seattle, Wash., and directed to proceed to Astoria, Ore., for the purpose of establishing a United States Quarantine Station at or near that point. April 28, 1899.

Russell, H. C., assistant surgeon. Relieved from duty at Louisville, Ky., and directed to proceed to Cairo, Ill., and assume temporary command of Service. May 1, 1899.

Parker, H. B., assistant surgeon. Detailed as quarantine officer of the port of Santiago, Cuba. May 2, 1899.

Lumsden, L. L., assistant surgeon. To proceed to Seattle, Wash., and assume command of Service. April 28, 1899.

Anderson, J. F., assistant surgeon. Granted thirty days' extension of sick leave from May 1, 1899. April 29, 1899.

Fricks, L. D., assistant surgeon. Relieved from duty on U. S. transport "Sedgewick," and directed to assume temporary command of Service at Savannah, Ga. May 4, 1899.

Kerr, J. W., assistant surgeon. To proceed to the San Francisco Quarantine Station and report to the commanding officer for temporary duty. May 3, 1899.

Scott, E. B., hospital steward. To report to acting assistant surgeon in charge, Savannah Quarantine, for duty and assignment to quarters. May 2, 1899.

Comfort, N. C., hospital steward. Relieved from duty at Cincinnati, O., and directed to proceed to Louisville, Ky., and report to commanding officer for duty and assignment to quarters. May 1, 1899.

SOCIETY NOTICES.

Suffolk District Medical Society. — The Section for Clinical Medicine, Pathology and Hygiene will hold its last regular meeting at 19 Boylston Place, Wednesday, May 17, 1899, at 8 p. m.

At 8 o'clock: Dr. Franklin W. White will report "A Case of Tetany."

At 8.15 o'clock: Dr. J. W. Courtney will present a paper entitled, "A Case of Ataxic Paraplegia developing under Circumstances of Unusual Interest." Discussion by Drs. Knapp, Walton and Thomas.

H. F. Vickery, M.D., *Chairman.*
J. Bergen Ogden, M.D., *Secretary*,
Harvard Medical School, Boston.

New Hampshire Medical Society. — One hundred and eighth anniversary meeting of the Society will be held on Thursday and Friday, May 25 and 26, 1899, in the new G. A. R. Hall, entrance Pleasant Street, Concord, N. H.

The officers of the Society are: President, George H. Saltmarsh, M.D., Lakeport; Vice-President, Charles R. Walker, M.D., Concord; Secretary, Granville P. Conn, M.D., Concord.

Alumni Meeting.

The annual meeting of the Alumni of Dartmouth Medical College will be held at the Eagle Hotel, May 25th, at 5 o'clock p. m., and will be followed by a banquet. Circular announcement will be made to the Alumni by Prof. W. T. Smith, Secretary.

American Surgical Association. — The meeting of 1899 will be held at the rooms of the Chicago Medical Society, Stewart Building, No. 92 State Street, Chicago, Ill., on Wednesday, May 31st, Thursday, June 1st and Friday, June 2d.

W. W. Keen, M.D., *President.*
Herbert L. Burrell, M.D., *Secretary.*

THE LENVAL PRIZE.

This prize, which has been founded by Baron Léon de Lenval, of Nice, will be awarded at the International Otological Congress to be held in London from August 8 to 11, 1899.

The regulations for its award, which were passed at the Fifth International Congress, held at Florence in 1895, are as follows, namely:

(1) In connection with the International Congresses of Otology, the sum of 3,000 francs has been given to found a prize, bearing the name of "The Lenval Prize."

(2) The interest of this sum which has accumulated between one International Otological Congress and the next shall be awarded to the author of the most marked progress bearing on the practical treatment of affections of hearing during that time, or to the inventor of any new apparatus which is readily portable and improves considerably the hearing power of deaf persons.

(3) The sum of 3,000 francs will be deposited in a public bank in the hands of the president of the jury.

(4) The International Otological Congress will elect a jury each time, consisting of seven members. The jury will pronounce its decision at the closing meeting of each Congress.

The members of the jury as at present constituted are Professor Politzer, Vienna, Dr. Benni, Warsaw, Dr. Gellé, Paris, Professor Pritchard, London, Professor St. John Roosa, New York, Professor Kirchner, Würzburg, and Professor Grazzi, Florence.

All persons desirous of competing for the prize are requested to communicate without delay with Mr. Cresswell Baber, Hon. Sec. Gen., 46 Brunswick Square, Brighton, Eng., stating the facts on which their claim is based.

Original Articles.

A CASE OF DIABETES MELLITUS QUICKLY FOLLOWING MUMPS.

On the Pathological Alterations of the Salivary Glands, closely resembling those found in the Pancreas, in a Case of Diabetes Mellitus.

BY H. F. HARRIS, M.D.,

Associate Professor of Pathology at Jefferson Medical College; from Laboratories of the Jefferson Medical College Hospital, Philadelphia, Pa.

The writer's attention was first directed to a possible relation between morbid conditions of the salivary glands and those of the pancreas by the history of a patient suffering from diabetes mellitus, the details of which were as follows:

A. W. R., age forty-two, white, a farmer, applied for treatment at the Medical Clinic of the Southern Medical College, Atlanta, Ga., on the 3d of March, 1895. Family history negative. Except an attack of measles when a child, he never remembers having been sick until three years prior to the time he presented himself for treatment, when he had an attack of mumps. About a month after his recovery he noticed that he began to pass more urine than formerly; since this the quantity of urine voided has slowly but steadily increased. He has constant thirst, and eats much more than was his custom before the trouble began. Bowels are irregular; the stools have generally a much paler color than is normally the case; has lost about thirty pounds in flesh; eye-sight has recently become much worse. He has suffered from a slight degree of salivation ever since he has had this present trouble.

Physical Examination. — Patient is much emaciated. Pulse 88, respiration 28, temperature 98.4°; tongue shows slight imprint of teeth. There is an eczematous condition of the skin of the face, neck and back. Patellar tendon reflex lost in both legs; elbow reflex greatly diminished. Heart, lungs, liver and spleen normal so far as could be ascertained. During the first twenty-four hours after coming under observation he passed 6,440 cubic centimetres of urine. It contained no albumin, but 4.6 per cent. of glucose; acetone present. This urine contained 57.96 grammes of urea. The saliva contained traces of glucose. Blood examination showed 3,957,500 erythrocytes to the cubic millimetre; white cells normal. There was 95 per cent. hemoglobin. None of the feces could be obtained for analysis. The man returned to the clinic several times, but finally disappeared, and as a consequence his subsequent history is unknown.

With one or two trifling exceptions, this man presented all the usual symptoms of diabetes, and the case is therefore, clinically, of no unusual interest. As he has, however, been previously healthy and the diabetes so rapidly followed the attack of mumps, it appeared not impossible that the latter disease might have in some way induced the former. Since the writer's attention was called to the matter by this case he has seen in literature several references to the fact that diabetes has not infrequently followed mumps. There are many cases on record which prove beyond doubt that chronic alterations in the parotid may follow mumps, but it is quite clear that its destruction as the result of disease is not followed by the symptoms of diabetes in man.

Following the removal of all of the salivary glands in a dog the writer was able to detect slight traces of what was apparently glucose for a period of ten days after the operation. The animal entirely recovered from the effects of the surgical procedure, and two months after was in perfect health. On looking into the literature it was found that the same experiment had been previously carried out by Reale.[1]

This experimenter was able to induce a mild glycosuria in dogs by the removal of the salivary glands, and, furthermore, produced the same condition in dogs where the previous removal of the pancreas had not been followed by its appearance of sugar in the urine. In the same place Reale refers to a case of diabetes which he thought was due to the fact that the patient, who suffered from salivation, would never swallow any of the saliva. It does not, however, seem that the facts at present before us would justify the belief that alterations in the salivary glands alone would lead to a pronounced condition of glycosuria. But the removal of the pancreas, or even the destruction of a part of it, in most cases, is immediately followed by diabetes in many of the lower animals, as has been shown by the brilliant experiments of v. Mering.[2] Since the publication of Schmackpfeffer's[3] thesis on diseases of the pancreas the possibility of an inflammatory condition of this organ being induced by the poison of mumps has been generally admitted, but, unfortunately, there must always remain some doubt as to the true nature of the case to which he referred. The writer has been unable to find another recorded instance where a pancreatitis was supposed to have been induced by mumps, and it would therefore appear that the condition, if it occurs at all, is extremely rare, or that the symptoms are of such a character that attention is not directed to the diseased organ. Notwithstanding this, when it is remembered that, in addition to the parotitis, adenitis of the sublingual and submaxillary glands, orchitis, prostatitis, ovaritis, mastitis, nephritis, thyroiditis, and inflammation of the cervical lymphatic glands have been sufficiently often observed to make them well-recognized complications of mumps, it certainly would appear possible, nay, even probable, that a gland so closely resembling the parotid as the pancreas would at times be involved. If this be granted, an admission of the possibility that the changes might become chronic, and lead to permanent structural alterations in the viscus, could scarcely be avoided, in view of the frequently reported atrophy of the parotid and testicle following acute inflammation of these glands resulting from mumps.

The writer does not for a moment assume that every case of pancreatic disease is due to mumps, nor, in the present state of knowledge, does it appear to him probable that it is even common, but the facts as above set forth would seem to justify an investigation by those who are in position to give the matter attention.

That functional alterations in the salivary glands very generally occur in diabetes mellitus has long been known, but the condition has received but little attention from the clinicians, and, so far as the writer can find, none at all from the pathologists. Jardet and Niviere[4] have recently particularly directed attention to the changes in the saliva in this disease, and have claimed for these glands an importance in the diabetic process which they probably do not deserve. It cannot, however, be doubted, as the case — the record of which follows — proves that profound changes sometimes occur in the salivary glands, in every way resembling those found in the pancreas, in diabetes mellitus.

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[1] Congress of Berlin, 1890, Part II, Fasiculus of Internal Medicine, p. 97.

[2] Ueber experiment. Diabetes, Verhandl. des V und VI Congr. f. Inn. Med., Wiesbaden, 1886 und 1887.

[3] Dissertatio inauguralis sistens observationes de quibusdam pancreatis morbis, 1817, 26.

For the clinical details of this case the writer is indebted to Dr. F. A. Packard, under whose charge the patient was while in the Philadelphia Hospital, and, for permission to make the post-mortem, to the kindness of Prof. W. M. L. Coplin, during whose service as pathologist the necropsy was made.

J. H., age sixty-three, white, male, a Pennsylvanian, was admitted to the Philadelphia Hospital July 19, 1897.

Clinical diagnosis. — Diabetes mellitus.

Family history. — Father died of dropsy; mother died of pulmonary tuberculosis.

Personal history. — Patient was always well up to his present illness. He has never used alcohol. About fifteen months before admission the patient noticed that he began to pass more urine than formerly. He drank more water than usual, and his appetite increased to an abnormal degree, notwithstanding which he gradually lost flesh. Five weeks before admission he noticed a dark spot on the inner side of the big toe of right foot; shortly after a purulent discharge began to come from this spot. This area has been very painful.

Physical Examination. — Except the gangrene of the toe above referred to, the man was physically sound. The urine was examined and found to contain 3.66 per cent. of glucose. A diagnosis of diabetes and diabetic gangrene of the toe was made, and the patient was placed on proper diet and treatment. From the time of admission until death the patient has remained in the hospital. Although the gangrenous condition of the toe entirely healed in a short time, the patient's general condition gradually grew worse. A few weeks before death there were added to the diabetic symptoms those of pulmonary tuberculosis, which gave the usual signs of such conditions. While in the hospital he passed, on an average, from 3,500 to 4,000 cubic centimetres of urine. He died on January 26, 1899.

Autopsy was made at 2 P. M., January 29, 1899.

Pathological Diagnosis. — Atheroma of vessels of base of brain; tuberculosis and abscess of lung; tuberculous ulcers of lower part of ileum; atrophy of pancreas; atrophy of salivary glands; closure of cystic duct; gall-bladder adherent to duodenum; ulceration through walls of both of these viscera, causing their cavities to communicate. Body of a much emaciated male. Skin and mucous membranes pale; post-mortem rigidity slight. On outer portion of right forearm a tattoo-mark of our Saviour undergoing the pains of crucifixion. On section a small amount of fat is found in abdominal wall. The muscles of the abdominal wall are quite pale. In dependent portions of abdominal and pelvic cavities are found small collections of a slightly reddish-yellow fluid. There is coloptosis. Other abdominal viscera in their normal situations.

Lungs fill their cavities well. The left lung is bound to the thoracic wall by old, very tough adhesions. The parts of the pleural cavity which are not obliterated contain 75 cubic centimetres of slightly blood-stained, opaque fluid; with the exception that the right pleural cavity contains only 20 cubic centimetres of fluid, its condition is practically that of the left.

The heart is in its normal position. Pericardium normal; it contains 80 cubic centimetres of clear, yellow fluid. Left side of heart is rather firmly contracted; right side moderately so. The sub-pericardial fat of left ventricle shows mucoid change. Left auricle contains a small amount of clot, — chiefly post mortem. The right auricle contains a large mass of "chicken-fat" clot. Both ventricles contain a small amount of dark, semi-clotted blood. Aortic and pulmonary valves are continent. Right auriculo-ventricular opening admits three fingers, and the left, two. Each of the aortic valves shows a slight amount of thickening; into these areas there is a small amount of calcareous infiltration. Both mitral valves show the same changes which are observed in the aortic; their edges are, however, normal. The heart muscle is quite friable.

Lower two-thirds of the upper lobe of the left lung are in a state of complete consolidation. Substance does not crepitate; it is grayish in color, and sinks when placed in water. In this area there are numerous small cavities which contain a pus-like material. The lower lobe is normal. Scattered through the right lung are small nodules, varying in size from barely perceptible points to one centimetre in diameter, which contain a pus-like material. The walls of these abscesses are very thin.

Material from these pus cavities from both lungs was subjected to immediate examination by Professor Coplin, with the following results:

The fresh unstained material was found to consist of pus cells, elastic fibres, giant cells — one of which contained five small, centrally placed nuclei — and granular detritus; in addition there were a few cells about twice the size of pus cells, with very small nuclei and a clear, almost hyaline, protoplasm. Specimens stained by carbol-fuchsin showed the cellular elements, as above mentioned. There were many diplococci surrounded by a clear space, which suggested a capsule. There were also a few bacilli found which had the morphologic peculiarities of tubercle bacilli. Specimens counterstained by Gabbet's methylene-blue solution showed these bacilli red. Carbol-fuchsin specimens also showed chains of cocci which contained five and six elements. Specimens stained by Gram's method showed the organism as above mentioned, and in addition, several zoöglea masses of cocci. The spleen weighs 180 grammes. The organ is rather flabby and its capsule is wrinkled. The substance is normal in every particular. The adrenals are normal. The left kidney weighs 225 grammes. On section more blood exudes from the organ than is usual. Capsule strips readily. Beneath the capsule and on the convex border of this kidney there are a few minute cysts, which contain a clear, yellow fluid. The substance of the organs is normal in consistence. The cortex appears slightly thinned. The right kidneys weighs 190 grammes. In all essential particulars it resembles its fellow. Bladder and ureters are normal. Rectum is normal. The duodenum just below the pylorus is adherent to the under surface of the gall-bladder. Where joined together there is a small opening through the walls of these viscera, about one centimetre below the pylorus, causing their cavities to communicate. There is a very small fistulous tract, which extends from the interior of the stomach to the edge of this opening. This tract is between the muscular coats of the duodenum and the wall of the adherent gall-bladder. The duodenum is otherwise normal.

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[4] Des alterations glandes digestives à sucs alcalines et de leur importance dans les diabètes sucres, Revue de Médecine, December, 1898, p. 973.

With the exception above noted, the stomach is normal. Pancreas is very small, weighing only 35 grammes. It is 13 centimetres long, 4 centimetres wide, and about .5 centimetres thick. The surface of the organ is very nodular, and feels quite hard. On section there is more resistance than is usually the case, but the color is normal. When squeezed a minute quantity of clear fluid exudes. Inspection shows the presence of numerous fibrous-like bands running through the organ. There is evident atrophy, and there has evidently been an old interstitial pancreatitis. There is no evidence of carcinomatous or tuberculous change. The duct of the pancreas seems entirely closed a short distance from the point where it joins the bile-duct.

Liver weighs 2,050 grammes. Its substance is apparently normal in every particular.

The gall-bladder contains a small amount of yellowish and very thick material, which is evidently not normal bile. The cystic duct is entirely closed; at the point where it should open into the gall-bladder there is a calculus having a diameter of two centimetres.

The mucosa of the small intestine is very pale. There is a small oval-shaped ulcer in the ileum, four centimetres above the ileo-cecal valve; the edges of the ulcer are smooth and slightly undermined. The floor of the ulcer is grayish in color; the ulceration apparently does not extend deeper than the muscular layer. The underlying serous coat is normal. The long axis of this ulcer, which is longitudinal to the long axis of the intestine, measures 12.5 millimetres in length, and its width is 7.5 millimetres. Above this ulcer there are found in the ileum six other ulcers, resembling the one just described, with the exceptions that they are small, measuring about 2.5 millimetres in diameter, and are practically round.

In the mesentery, near the head of the pancreas, a lymphatic gland is found which is much enlarged. On section the mass is gray in color and quite soft.

Several lymphatic glands presenting the same peculiarities were found in the neck near the right lobe of the thyroid. The thyroid is normal.

The ascending transverse and descending aorta contain numerous atheromatous patches.

Brain weighs 1,330 grammes; it is in every way normal.

All of the salivary glands were removed and found smaller than normal. The right parotid weighs 12 grammes, and the left 10 grammes. The submaxillary glands weigh 4 grammes each, and the two sublinguals together weigh 3 grammes. These weights are in every instance in excess of what the glands really weighed, as it is found on microscopic examination that many of the pieces which were removed contain no glandular structure at all. These glands, particularly the parotids, show the same peculiarities which characterize the pancreas.

From a culture made from the lung a streptococcus was found. In the first culture a few diplococci were found, but they disappeared on plating. From the spleen a streptococcus was obtained, and also the staphylococcus pyogenes aureus. Cultures from other organs negative.

Microscopic examination. — All of the tissues were fixed in Neidenhain's mercury-bichloride solution. Sections were stained in hematoxylin alone and with eosin, carmalum alone and with picric acid, carboltoluidin-blue alone and with eosin, acid orcein, carbol-fuchsin for tubercle bacilli, and by the methods of Van Giesen, Weigert and Sanfelice.

Pancreas and salivary glands: In the present instance the alterations in the pancreas and salivary glands may be looked upon as the primary and most important of all the changes found, and, for this reason, will be first considered. As the pancreas anatomically belongs to the groups of salivary glands, and as the pathologic alterations are identical in all of these organs, much useless repetition can be avoided by considering them together. Sections taken from all parts of all of these glands show a very marked thickening of the trabeculæ which bind the lobules together (Fig. 1*b*). This thickening is not uniform, the same band being much thicker at some points than at others. In the majority of instances every lobule is separated from adjoining ones by these bands, but here and there two, three or even more lobules lie practically in contact, and appear in every way normal. The delicate interstitial substance which lies between the individual acini, as a rule, shows no change, but not infrequently this tissue has also become markedly thickened (Fig. 1*c*). In still rarer instances this hyperplastic change has gone on to such an extent that practically all the acini of a lobule have been destroyed, and replaced by newly-formed fibrous tissue. In these areas remnants of the acini sometimes persist as small collections of epithelial cells, closely packed together by the contracting fibrous tissue surrounding them. From what has been said it necessarily follows that the excretory ducts of the glands suffer much, as a result of the pathologic processes, often being greatly reduced in size, and much distorted (Fig. 2*d*). Here also small collections of epithelial cells are often found bearing no resemblance to the normal ducts. Quite a degree of thickening is likewise found in the

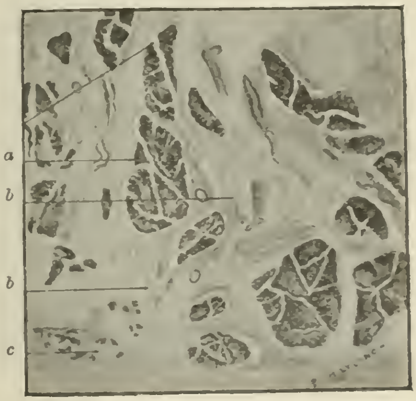

FIG. 1. Section of left parotid under a very low power; carbol-toluidin-blue and eosin; *a*, normal lobules; *b*, greatly thickened trabeculæ; *c*, lobule almost entirely changed to fibrous tissue.

outer coats of small arteries which lie in the trabeculæ (Fig. 2*e*). Scattered through the trabeculæ everywhere branched connective-tissue cells are found, and here and there small collections of lymphoid cells, mixed with which are fibroblasts, a few plasma cells and an occasional mast cell. These collections of cells are most prominent around the smaller arteries and ducts, but are also found around some of the smaller veins. Between the acini of some of the lobules considerable collections of such cells are also found; where these cells are present there is always a greater or less increase in the amount of fibrous tissue of the part (Fig. 2*c*). All of the newly-formed tissue consists of white fibrous tissue, there being present in it no elastic tissue fibres. In the trabeculæ like collections of cells occasionally occur having no apparent connection with either blood-vessels or ducts, but it is not improbable that many, if not all, of them are really masses of cells in the vicinity of these structures, the section being, however, so cut that they are not included.

The lymph nodes which were present in these glands in all cases show a decided thickening of their trabeculæ. Occupying the periphery of the nodes and extending deeper into their substance are numerous rounded or oblong cells, the largest of which have a diameter of from 9 to 10μ; many of the largest cells exhibit no nuclei, the protoplasm is finely granular, and stains intensely with acid dyes. These cells appear to be undergoing degenerative changes. A few of these cells and all of the smaller ones have distinct nuclei, which are, as a rule, vesicular in character; in some instances the nuclei are elongated and twisted on themselves, much resembling nuclei which are frequently seen in stained blood preparations. The protoplasm of the smaller cells is, as a rule, faintly basophilic, though in some cases it is oxyphilic. Passing toward the central portions of the nodes, still smaller cells are found which are apparently lymphoid cells, the protoplasm of which is somewhat increased in amount; the protoplasm of these cells is almost always strongly basophilic. It seems highly probable that these cells are all derived from the lymphoid cells of the normal nodes. Scattered through the nodes red blood cells are occasionally found. Collections of the larger varieties of these cells are occasionally found in small openings in the tissues, which appear to be dilated lymph channels.

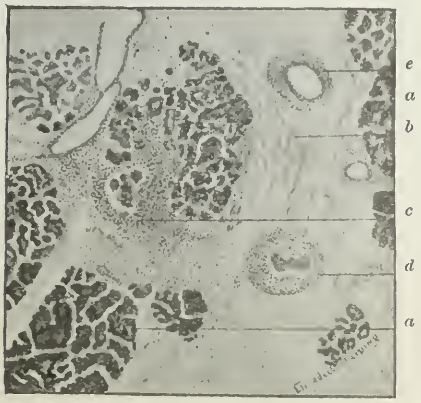

FIG. 2. Section from right parotid; carboltoluidin-blue and eosin. Bausch and Lomb ⅔ inch, Oc.B. *a*, normal lobules; *b*, thickened trabeculæ; *c*, cellular infiltration into a lobule; *d*, a duct the wall of which is thickened and infiltrated with cells, and the lumen decreased in size; *e*, an artery with cellular infiltration into its walls.

The post-mortem, unfortunately, was made so long after death that no reliable conclusions could be drawn as to the condition of the epithelial lining of the acini and ducts. However, a record of the changes observed is not wholly without interest, for, while many of them were doubtless post mortem, others could scarcely have been so.

Sections of a normal parotid in the writer's possession show an average diameter of the acini of from 20 to 25μ, few being of either a greater or less diameter. Sections of the parotids of the case under discussion show in most instances acini which have diameters varying from 10 to 20μ. In some instances they are much larger, having diameters varying from 40 to 60μ; in these cases several of the apparently swollen acini are generally found together. Acini with diameters intermediate between the former and latter groups are rare. The epithelial cells lining the acini are almost always detached from their basement membranes, and often they have partially or completely disappeared from the lumina of the acini. The cells themselves are swollen, and their nuclei for the most part no longer take the stain. The protoplasm preserves its power of taking basic stains, but the reaction is not uniform throughout the entire cell, as is the case in normal cells of the kind; in some parts of the cells the protoplasm is abnormally basophilic, while in others the affinity for these dyes is diminished. The protoplasm of these cells is, as is that of the normal cell, finely granular. The cells lining the excretory ducts show the same changes which are observed in those of the secreting parts of the gland. A curious and unexpected find in a bit of muscle attached to the sublingual glands was an encysted trichina.

Lungs: The pulmonary lesions are of a most marked character, and were, undoubtedly, the immediate cause of death. Scattered throughout the lung substance there are numerous miliary tubercles which show the usual caseous centres, around which are very thin walls of fibrous tissue, containing numerous fibroblasts, and here and there typical giant cells. It is evident that in the great majority of instances the tubercles began in the smaller bronchial tubes, but occasionally one is found which clearly began in the air vesicles. Quite frequently small abscesses are also found scattered through the lung substance, and they seemed to have always originated in the smaller bronchi, or, less frequently, in one of the tubercles above referred to. The contents of these abscesses vary somewhat, depending on their point of origin, but all contain multitudes of polymorphonuclear leucocytes, a few swollen epithelial cells, and granular *débris*. The walls of these abscesses are made up of the infiltrated and compressed lung tissue which surrounds them.

Sections stained by Weigert's method show within them multitudes of streptococci, which morphologically resemble the streptococcus pyogenes. In the sections examined none of the lung structure was normal, the lumina of the air vesicles containing many swollen epithelial cells, a few white blood cells, and an occasional red blood cell; in addition to this there is always found a quantity of granular detritus, and many diplobacilli, which morphologically and in their microchemic properties resemble the micrococcus lanceolatus. Here and there an air vesicle is found which contains many leucocytes, a few swollen epithelial and red blood cells, all of which are bound together by shreds of fibrin. The epithelial linings of the bronchial tubes are for the most part gone, and the tubes generally contain large numbers of polymorphonuclear leucocytes. The arteries of the lung generally show a beginning endarteritis, there being between the inner and middle coats small collections of lymphoid cells. The trabeculæ of the lung are greatly swollen and contain rather diffuse collections of swollen connective-tissue cells, lymphoid cells, red blood cells, and a few polymorphonuclear leucocytes, lymphocytes and plasma cells.

Intestine: Sections of the ulcer show that the ulceration extends down to the circular muscular coat. The edges of the ulcers are undermined, and there are found, especially in the submucosa in the vicinity, many typical tubercles. The tissues near the ulcers are infiltrated with lymphoid cells, swollen connective-tissue cells, many mast cells and a few plasma cells. The subperitoneal tissues show some thickening.

Lymphatic glands: Sections of the enlarged lymphatic gland from the abdominal cavity and from those taken from the neck show in every instance typical tuberculosis.

Kidneys: The epithelial cells of the tubules are slightly irregular in form at their free ends, and often their nuclei stain very faintly or not at all, but they are attached to their basement membranes in the usual way, and, before death, were evidently practically normal. The blood-vessels throughout the kidney contain more blood than is generally found in these organs when normal. There are no other changes.

Microscopic examination of sections from the liver, spleen, stomach, adrenal, testicle, prostate, thyroid gland, brain, and pineal gland showed all of these organs to be normal.

Summary.— Diabetes may follow mumps so quickly that there is at least a strong suspicion that the former disease may be induced by the latter. It is not probable that the diabetes is the result of changes produced in the salivary glands, but their removal in dogs is followed by a slight glycosuria.

On account of the close resemblance in structure between the salivary glands and the pancreas, it would seem probable that a general disease, like mumps, which causes changes in the one, would at times likewise produce alterations in the other.

There is no well-authenticated case of pancreatic inflammation having followed mumps, but in, at least, one instance there is a suspicion of it having done so. Inflammatory changes having once been set up in the pancreas, all analogy would lead to the conclusion that in some instances they might become chronic, and that serious alterations in function would result.

Disturbed functional activity of the pancreas, if marked, probably in all cases leads to diabetes. Alterations in the pancreas and salivary glands, which are in every way similar, occur in at least some cases of diabetes. These alterations are apparently produced by some general cause which acts on all of the glands belonging to this particular group.

Proctologists. — The American Association of Proctologists is to convene at Columbus, O., during the forthcoming meeting of the American Medical Association. There is reason to hope that we have at last reached the end of the formation of specialties.

SMALL ANEURISM OF THE DESCENDING ARCH OF THE AORTA, X-RAY EXAMINATION CONFIRMED BY AUTOPSY.[1]

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

In the Medical and Surgical Report of the Boston City Hospital for 1897 I reported some cases of thoracic aneurism that I had seen in 1896 by means of x-ray examinations. Since then I have seen a number of others, as well as cases in which there were symptoms pointing to aneurism of the thoracic aorta, but in which the x-ray examination showed that no aneurism was present.

The following case is noteworthy because the aneurism was small, and an opportunity was given, by the death of the patient from another cause, to see that the x-ray and post-mortem appearances agreed exactly. The patient was referred to me for an x-ray examination by Dr. H. D. Arnold, February 18, 1899. It was thought probable that he had an aneurism of the innominate artery, and there was a question of aortic aneurism as well. Dr. Arnold's examination is in part as follows:

"T. H. Y., forty-five years old. Pain in the precordia for about one week, increased on exertion; sense of intense pressure there. Some cough and expectoration; slight attacks of hoarseness in past few days.

"*Physical examination.* — Area of dulness shown in diagram by dotted lines. At lower angle of neck on the right side, close above the inner end of the clavicle, pulsation is more marked than normal, and greater than at corresponding place on the left side of the neck. Pulsation is greater than normal in the episternal notch. Pulsation in episternal notch is felt more distinctly on the right side than on the left, and there is a distinct lateral thrust from the right instead of from below upwards; there is a slight tracheal tug."

On February 18th *x-ray examination* showed a small aneurism of the descending arch of the aorta. The examination was made with the patient lying on his back (Fig. 1) and also when lying on his face (Fig. 2). This latter diagram gives the outline of the aneurism and also the left border of the heart.

On February 23d the patient was found on the street and brought to the hospital in an unconscious condition and placed in my service; he died just after entrance.

A careful post-mortem examination by Dr. Pearce showed an aneurismal dilatation of the innominate artery, and an aneurism of the descending arch of the aorta which corresponded to the outline which had been traced at the x-ray examination and had been brought to the autopsy room for comparison. The outline of the right auricle and of the left ventricle (Fig. 1) made at the x-ray examination also corresponded to what was found at the autopsy.

It will be seen by comparing the x-ray lines (Fig. 1) with the dotted lines, which represent the outlines found by percussion, that we failed to recognize any dulness over the site of the aneurism, and even after I had *seen* its outline on the fluorescent screen we could not detect it by percussion. Further, by following the dotted line which indicates the left border of the heart as found by percussion, we see that it is incorrect.

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[1] Read before the Association of American Physicians, Washington, D. C., May, 1899.

when compared with the same border as determined by the fluoroscope and at the autopsy. On the right side the border of the enlarged right auricle was not recognized by percussion, but I saw it on the fluorescent screen, and, as already stated, this x-ray line was confirmed at the autopsy. In cardiac disease I have frequently demonstrated a marked discrepancy between the position of the borders of the heart as suggested by percussion and as determined by means of the fluorescent screen.

A further point of interest in this patient is that the lungs were found to be normal both by the x-ray and post-mortem examinations.

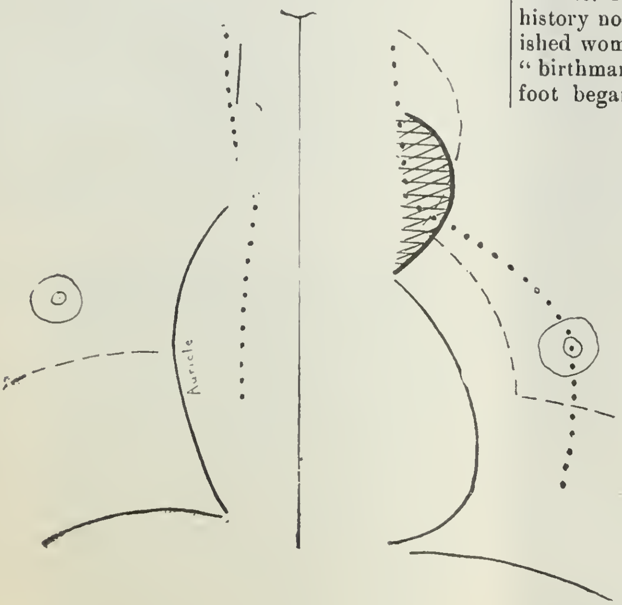

Fig. 1.

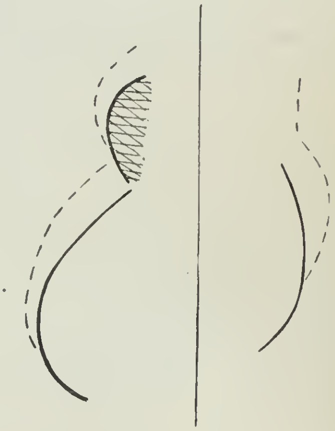

Fig. 2.

(Fig. 1) : Full lines, except the median line, represent x-ray outlines in full inspiration; broken lines, in expiration; the shaded area shows the position of the aneurism in full inspiration, the broken lines above it, its position in expiration; dotted lines, the outlines as found by percussion. Another tracing of the aneurism, made on the back, (Fig. 2) showed a movement downwards of only one and three-quarters centimetres, while the tracing made on the front of the chest showed about double this movement, but both are more than the real up-and-down movement of the aneurism between expiration and full inspiration, as the aneurism, though nearer the fluorescent screen when the screen is on the back than when on the front of the chest, is in either case far enough away from it to cause the shadow of the aneurism to move farther than the aneurism itself.

This examination was made with the patient lying on his back. The Crookes tube is ordinarily placed three and one-half feet away from the fluorescent screen, but in this case the distance was not noted. The x-ray lines were drawn on the chest by means of a suitable pencil[2] and then copied on to a piece of tracing cloth placed on the chest. These diagrams (Fig. 1 and also Fig. 2) were photographically reduced from the percussion and x-ray lines made on February 18th.

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Clinical Department.

A CASE OF MELANO-SARCOMA.[1]

BY GEORGE SHATTUCK WHITESIDE, M.D., BOSTON.

Mrs. A. P., age fifty, widow. Previous medical history not remarkable; well-developed and well-nourished woman. In March, 1897, a congenital mole or "birthmark" on the inner inferior aspect of right foot began to ulcerate. This enlarged to a round ulcer the size of a quarter of a dollar. Two months later she was seen by Dr. O'Brien, of Rockport, who brought her to the Massachusetts General Hospital.

Through the kindness of Dr. Scudder, I removed the ulcer on May 16, 1897, thinking it probably an epithelioma. A wide margin of healthy tissue was taken, so that a plastic operation was necessary to cover the denuded area.

Dr. J. H. Wright examined the specimen and reported that "Specimen consists of a lenticular piece of skin showing a shallow ulcer several centimetres in diameter. Microscopic examination shows at the base of the ulcer a layer of very cellular tissue situated in the corium, consisting of closely packed, vesicular nucleated cells, of variable shape, arranged in groups, separated by a thin stroma supporting bloodvessels. In places are masses of coarse, granular, brown pigment intimately associated with the cells. There is a wide margin of healthy tissue both beneath and at the sides of the growth. From the general arrangement and appearance of the cells, the diagnosis is endothelioma, or soft wart."

The wound of operation healed by first intention.

Six months after this the patient noticed two small, bluish spots near the scar of operation. One of these was removed by Dr. S. W. Allen on December 10,

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[2] This pencil consists of a brass tube one quarter of an inch in diameter and five inches long carrying in one end a crayon suitable for marking on the skin. The metal tube casts a shadow on the fluorescent screen and it is thus easy to follow with its point and trace on the skin with the crayon any outline, such as that of the heart or an aneurism. If the clothing is not removed the outline may be drawn on a sheet of paper suitably supported over the patient.

[1] Read before the Surgical Section of the Suffolk District Medical Society, February 8, 1899.

1897, and Dr. Wright's pathological report was: "The nodule is composed of vesicular nucleated cells, arranged in groups, densely infiltrating the corium. Some of these contain a large amount of brown pigment. The growth is considered as malignant and sarcomatous in character. Diagnosis: melano sarcoma."

A week later Dr. Beach amputated the leg at the point of election. The wound healed quickly. Patient left the hospital January 10, 1898.

In March the patient first noticed a lump in the region of the right kidney. This she concealed from every one. This tumor grew slowly but caused no subjective symptoms.

In August the family noticed, at times, impairment of memory, irritability, dislike of being left alone, depression and langor.

The end of September she began to have vomiting, not associated with or in any way dependent on food.

Early in October frontal and right-sided occipital headaches began. These were constant, severe and with exacerbations. Then the symptoms became more varied. She began to talk to herself, became easily excited. A little later the langor and indifference increased and the excitability diminished; then ptosis of right eye began; twitching of left arm and hand was noticed at times; patient finally became very sleepy and would doze off at any moment.

October 21st went to the theatre; considerable fatigue followed. The next day a bad attack of vomiting, continued all day. Two days later I saw the patient for the first time since she left the hospital nine months before; history and mental symptoms as above described.

Physical Examination. — Face expressionless, eyes had a dull, fixed look; ptosis of right upper lid. Liver enlarged downwards; spleen not palpable; no glandular enlargements except in popliteal space of amputated leg. A tumor in region of right kidney, rounded in shape, not moving with respiration, moveable, separate from the liver, non-fluctuant and firm.

Eye examination by Dr. E. R. Williams, with atropine, showed, besides the ptosis above mentioned, convergence deficient, vision normal and equal in both eyes, double optic neuritis of considerable extent, otherwise normal.

Urine normal and contains no melanin.

Four days later I was telegraphed for and found the patient in semi-stupor, lying slightly turned to right side; left arm and leg and left side of face paralyzed, but not completely so; tongue when protruded turns slightly to the left; reflexes somewhat greater on paralyzed side; impossible to determine sensation; moans and cries inarticulately; can be aroused for a moment at a time; when spoken to loudly answers in a slow, halting voice; no vomiting; takes food well; pupils react to light; uncertain control over sphincters of bladder and rectum. Pulse 84, feeble and intermittent. A small dose of sodium bromide and chloral caused almost immediate quiet; sleep, with stertorous breathing.

The next day patient cyanotic. Pulse faint, rapid and irregular; respiration rapid and shallow. Has slept twenty hours of the last twenty-four. Given strychnia by mouth. A gradual improvement now set in with regard to the patient's general condition. The note on November 9th says that the facial paralysis had increased, and the left arm became useless. Swallows with difficulty; nystagmus when asleep. Morphia given lately for headaches. Beginning bed-sores.

November 15th. Patient sat up in bed and read a newspaper. Complains of pain in left shoulder and arm, especially when handled. Then the tide turned, and on November 23d patient seen in bed. Turned eyes when I came in but did not recognize me for a few minutes. Left facial paralysis increased; left arm and leg useless, right leg nearly so; all reflexes diminished; pupils equal; tongue points slightly to left when protruded; lungs show diminished breathing over whole left side of chest, apparently from paralysis of muscles of chest wall and possibly diaphragm, but that could not be proved. Renal tumor somewhat larger and less movable than a month ago; pulse and general condition fair, except for beginning bed-sores of dependent prominences.

November 27th. A sudden change took place in patient's condition. Stupor, from which she could not be aroused even to take food; marked nystagmus; gradual cardiac failure, and death on November 30th.

Autopsy on December 1, 1898, by Mr. Oscar Richardson: Examination showed body of a well-developed and well-nourished woman. Right leg amputated at junction of lower and middle thirds; enlarged glands in popliteal space of amputated leg.

Abdomen not opened; palpation showed many lumps of variable size; enlarged liver, spleen, and a tumor size of small cocoanut connected with right kidney. Opening the head showed a tumor of the brain pressing on and compressing the temporo-sphenoidal lobe and occupying a considerable part of the right side of the middle fossa, adherent to dura and bone anteriorly. Examination of the brain after removal showed the right temporal lobe pressed upward and flattened from side to side; right cerebral peduncle, hypocampus and uncas and right substantia recticularis alba displaced to left but not atrophied. On the inferior aspect of right temporal lobe, and causing the compression of the lobe above mentioned, is an irregular lobulated tumor, the size of a hen's egg, lying under the dura. On section in formalin-hardened specimen it is about the consistency of brain tissue, homogeneous, of grayish color, with blackish and pink spots resembling injected vessels.

On section of brain after removal of tumor, cavity of right lateral ventricle encroached upon; the basal ganglia displaced upward and inward; cavity of left lateral ventricle somewhat larger than normal. In external inferior portion of right lenticular nucleus, and separated from the cavity in the brain tissue which held the tumor, by a narrow margin of apparently healthy brain tissue, is an irregularly outlined cavity fifteen millimetres in greatest diameter, filled with a soft, black substance, together with a grayish-red, soft mass in the centre.

Microscopic Examination. — All sections of the tumor show it to be composed of large, polyhedral cells, closely packed, with little or no stroma between. Sections of tissue from the brain and medulla show the fibres of the motor tracts more or less degenerated wherever seen, degeneration of the root of the right third cranial nerve, both sixth nerve roots, both seventh nerve roots, and in the region of the decussation of the pyramids degeneration of both pyramidal tracts. The section through the hemorrhagic area in the right lenticular nucleus shows a central tumor mass composed of cells similar to those in the large tumor but smaller, with blood clot around this new tissue.

The diagnosis is sarcoma of a kind in harmony with the ulcer of the right foot removed a year ago.

In this case we have a most interesting and instructive train of events. First, the patient had a mole. It is said that moles in this position (on the foot) not infrequently become sarcomatous in middle-aged persons. H. R. Crocker describes a case in his book on skin diseases, but the spread of the disease was very different from that of the present one. This mole did not at once become sarcomatous, but first showed a structure consisting of atypical cells in groups with a very vascular stroma. This type of tissue often very closely resembles sarcoma. This lesion was removed entire, taking the whole thickness of the skin and "a wide margin of healthy tissue." At that time there were no glandular enlargements, and one would have supposed a sufficiently radical operation had been done.

A local recurrence of the disease, however, required amputation six months after the first operation. At this time the pathologist reported that the disease was considered melano-sarcoma. No local recurrence took place after this, but a gradual spread of metastatic growths through the abdominal viscera began soon, and in six months the patient gave evidence of a brain tumor. Apparently this metastatic tumor did not injure the brain tissue near it by invading it, but caused symptoms from pressure alone. Finally, a metastasis of the tumor began inside a cerebral blood-vessel. This caused a thrombosis; rupture of the vessel. Death due directly to the effect of the hemorrhage at this point.

The lessons taught by this case seem to be these:

(1) A mole on the foot in a middle-aged person should be excised.

(2) An ulcer beginning in a mole on the foot demands immediate and radical surgery.

(3) The prognosis of ulcerated moles should be guarded even where the growth seems non-malignant.

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SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

Regular meeting Wednesday, February 8, 1899, Dr. J. W. Elliot in the chair.

Dr. J. C. Munro read a paper on

LAMINECTOMY.

An informal report of seventeen operations was made, with a few deductions and suggestions in the way of treatment. Of seven acute traumatic cases, three of which were in the cervical region, no shock followed operation, and even in the rapidly fatal cases a temporary improvement followed interference. Those injured in the upper part of the cord died, with sudden and marked elevation of temperature. Two dorsal cases lived for several months, neither injured nor benefited by the operation. Autopsy in three cases showed complete crush and softening of the cord.

Of four chronic traumatic cases one, a fracture-dislocation of the second cervical, was markedly improved in the paralysis of the upper extremity and in the motious of the head; a second, operated upon during a secondary acute affection of the cord, was not benefited by interference, but died in a few hours, with high temperature. A third, mid-dorsal case, and almost hopeless from the start, was relieved of the athetosis, but gradually succumbed to sepsis. A fourth, upper lumbar, though paraplegic and typhoidal at time of operation, made a complete recovery, so that she could earn her living at general housework at the end of eight months.

Of two adults with paralysis from caries, one, upper cervical, was perhaps slightly benefited; the other, one of the earlier cases, died of acute peritonitis, probably from being placed in the prone position after operation, a position that has proved not only useless but at times dangerous.

Of two cases of syringomyelia both were markedly benefited by operation, and though ultimately the disease is fatal yet the relief justifies the simple operation of opening the spine and dura.

Two cases of sarcoma were operated upon, one a diffuse growth, the other melanotic, but very little if any benefit resulted.

With regard to the technique, several points were emphasized: a single median incision; hemostasis by gauze packing, so that the use of forceps is rarely required; removal of the laminæ by special forceps, the chisel rarely and the trephine never being required; the dorsal position after operation.

In conclusion, it was held that the operation rarely should occupy a half-hour, the shock being notably increased after that length of time, and rarely being appreciable in short operations; that the hopeless nature of the damage to the cord cannot always be told before it is inspected; that, as Horsley has shown, sepsis is the only danger, practically; that anesthesia is not difficult nor a contraindication in the prone position, and that there is no advantage in the osteoplastic operation.

The operation should not be done until the profound shock of the accident has passed, nor should it be advocated if the cord is completely crushed, a condition which cannot at present always be accurately told. Furthermore, interference should be withheld if rapid spontaneous recovery is taking place. It is still a question if temporary relief may not be obtained in acute myelitis by evacuation of the subdural fluid; intense relief is obtained without question by such a procedure in the chronic types.

Dr. J. C. Warren reported the following three cases:

I. FRACTURE OF THE LUMBAR VERTEBRÆ; LAMINECTOMY.

II. LAMINECTOMY FOR PRESSURE SYMPTOMS IN A CASE OF SYRINGOMYELIA.

III. FIBROMA OF SPINAL CORD; REMOVAL; COMPLETE RECOVERY.

We are all very much interested in this large number of cases Dr. Munro reports, which shows activity in a field of surgery which is new and full of interest and replete with possibilities for the future. I feel some hesitation in presenting only three cases to-night. They were cases I selected from such as I have had because they were successful, and I suppose the successful cases are what we want to hear about, as they are encouraging.

Case I. (Patient shown.) Mr. H. A. W., married, thirty-one years of age, fell through the culvert of a bridge, about twenty feet, striking the end of the spine in a sitting position. The accident occurred November 26, 1896, about thirteen hours before entrance to the hospital.

On examination a deformity was observed of the spine of the eleventh dorsal vertebra, though it was not marked, the displacement being lateral rather than posterior; there was tenderness at this point. He is apparently paralyzed from the waist down, but a closer examination shows that he is able to move the muscles of the limb down to the hamstrings, and rotation of hip takes place in left limb. There is some sensation in an area covering the last three inches above ankles; there is dulness of sensation over and around penis and scrotum, good cremasteric reflex, knee-jerks absent. There was retention of urine, necessitating the use of the catheter.

During the first week there was some improvement, the patient being able to move the toes of both feet slightly. There was sensation over the insteps of both feet and on the sole of the right foot.

On December 4th the record states that there is incontinence of urine and no change in motion or sensation, but that prominence in back was more marked.

December 10th. Operation advised by Drs. Putnam, Walton, Baldwin and Taylor. The prominence is more marked.

Laminectomy was performed on December 15th. The spines and laminæ of the twelfth dorsal and first and second lumbar vertebræ were removed. One of them had evidently been fractured. An exudation was found external to the dura and between it and the laminæ removed. This was cut away with scissors and the dura opened. There was no visible crushing of the cord, but the dura was adherent to it at the point at which the exudation was found externally. The adhesions existed more on the left than on the right side of the cord, which was yellowish and edematous in this area. The pia was scratched with a knife, and about a drachm to a drachm and a half of clear fluid escaped, the swollen appearance disappearing. The cauda equina appeared to begin at about this point. The dura was stitched with catgut, as also the muscles and fascia. The skin was sutured with silkworm gut.

December 22d. Wound healed; stitches out. Small bed-sore on sacrum.

December 26th. Moves legs more freely; no motion in left foot.

Sensation and motion improved slowly during the following weeks; the patient was moved into a rolling chair and moved out of doors daily. The bed-sore slowly healed.

When examined by me October 8, 1897, there was still no active motion in ankles and toes of left leg and in toes of right foot. The left toes were also anesthetic; bowels were occasionally moved involuntarily; urine dribbled on standing but controlled when lying down; catheter passed every three days; walks with crutches and cane and is much encouraged as to his condition.

This patient lives in Cambridge; his business is in Boston. Returned to business last April. The bladder is getting better all the time. Passes water voluntarily; has not used the catheter for a year; has a rubber bag for safety. Movements of the bowels getting a good deal better; has not had involuntary discharges for quite a while. Sensation in the limbs improving all the time; left foot drops a little. The wound healed by first intention. He walks now, as you see, with very little assistance from cane or crutch.

In connection with this case I pass round a specimen of injury to the cord in the lower cervical region operated upon by one of the surgeons at the hospital. The patient died a few days later, and the cord and spine were removed in mass, hardened by the Kaiserling method, and a vertical section made after hardening. I would suggest this as the proper way of preparing the cord for demonstration.

Case II. This case had previously been operated upon December 28, 1891, by Dr. W. W. Keen.[1] On that occasion the arches of the tenth, eleventh and twelfth dorsal vertebræ were removed. The dura was incised and the cord inspected, and was found to be greatly thickened, of a dark gray color and adherent. No cerebro-spinal fluid escaped at the operation, but the membranes were not sutured, in order to relieve pressure upon the cord. The patient was left in my care. The wound healed by first intention, but later opened, and discharged for several weeks a considerable quantity of a cerebro-spinal fluid. The patient obtained entire relief from pain, but remained completely paralyzed below the waist.

In February, 1898, it became necessary to do something to relieve pain in the arms and shoulders, which had come on after unusual exertions in his profession as an architect. On February 10th the upper portion of the cicatrix was incised, and the arches of the seventh, eighth and ninth dorsal vertebræ removed. The cord at the seat of old cicatrix in the dura was much thickened, and, when the dura was opened, it protruded, and appeared like a soft sarcomatous tissue. Probing failed to reveal any collection of fluid. A gauze drain was left in, and the wound closed. The sinus formed by this drain closed in about two weeks, after the discharge of considerable cerebro-spinal fluid. A small bed-sore was easily controlled. An irritable spasmodic stricture caused some trouble at first, on the passage of the catheter, but finally yielded. There was immediate and complete relief to pain, which has not returned since.

This case impressed upon me the advantage to be gained by relief from pressure. The sudden relief from pressure by enabling a quantity of cerebro-spinal fluid to be discharged seemed to give the spinal cord an opportunity to regain its function.

Dr. Putnam: My notes about this case are substantially as follows: I was asked by Dr. Lovett to see her in June, 1898, and learned that she had been having severe pain in the left flank ever since the winter of 1896–1897, and that of late her legs had been getting helpless.

The pain was greatly increased by movement, and even by turning the head, opening the mouth widely, or by coughing, and also by lying down. The sensibility was impaired in all its modes over the whole surface of both legs and thighs, but much more seriously over the front surface of the thighs and legs, from the groin down, — that is, in the distribution of the lumbar nerves, — than over the back of the thighs. It was also slightly impaired over the abdomen as high as the umbilicus. The left leg was the worse as regards motion, the right as regards sensibility.

Dr. J. C. Warren: Case III. The operation was performed June 9, 1898. The patient having been etherized, the parts were thoroughly disinfected by the permanganate method, it having been necessary to postpone this preparation until after anesthesia, on account of the pain and difficulty in handling the patient. Drs. J. J. Putnam, Taylor, R. B. Greenough, Lothrop and J. S. Stone were present.

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[1] See Dumis, vol. ii,

An incision six inches long was made from the seventh dorsal to first lumbar spines. The muscular mass was rapidly dissected off on each side from the spines and the transverse processes, and held back by a broad retractor devised by Dr. Greenough. Hemorrhage was controlled by gauze packing so effectually that it was found at the end of the operation that it had not been necessary to tie a single ligature. The spines of the lower four dorsal vertebræ were next removed with cutting forceps, and the laminæ of the tenth and eleventh vertebræ were cut away, disclosing the dura, but showing nothing abnormal. On removing the laminæ of the ninth dorsal vertebra it was seen that a swelling existed in the cord beneath, which gave to the touch of the finger a marked sense of resistance. On laying open the cord at this point by an incision about one inch in length a tumor about the size and shape of an olive was disclosed on the left side, lying in the meshes of the pia. So loose were its adhesions that it was readily removed by the gentlest of movements with a blunt instrument, and with the slightest possible hemorrhage, which was controlled by a gentle pressure of a few moments' duration. No pedicle was found. The dura was stitched with three silk sutures. The muscles were brought into apposition by a few buried silk sutures, leaving a space for temporary gauze drain. Skin was closed with silkworm gut. Two provisional sutures were left at point of drainage. A dry dressing was applied.

Complete paralysis below nipple with retention of urine and incontinence of feces followed recovery from ether. Considerable pain in region of left chest, controlled by morphia and bromide. The gauze wick was removed on the second day and the provisional sutures were tied. Union of the wound took place by first intention.

Dr. Lovett: This patient consulted me about a painful condition in the lower spine and left side. She was seized in my office with a terrible paroxysm of pain, and I sent my nurse home with her to a friend's house in town. She had been having these attacks a long time and presented the symptoms of lumbar Pott's disease. She had, however, a beginning paralysis in the legs, with increased knee reflexes, which was not consistent with lumbar Pott's disease. She stayed in town for a while under my care and I put her on iodide of potash, and it seemed to me at that time the diagnosis lay between lumbar Pott's disease, possibly in some way or other a syphilitic Pott's disease, or a new growth. Watching her a while, it seemed to me it was something in the nature of a malignant new growth, and Dr. Putnam saw her with me. She improved at first with rest. She stayed in town three or four weeks and went home better. She did not improve after she got home, but grew rather worse, the paralysis increased, the paroxysms of the left side increased, and Dr. Warren saw her with me. At that time he thought it best not to operate. About a week later I went to Europe and left her in his care. The Pott's disease was to my mind excluded by the mobility of the lumbar spine, the fact that it was not particularly affected by rest in bed — she found the sitting position more comfortable than to lie down — and the fact that the reflexes were so much increased. There was no history of syphilis to be obtained, and when Dr. Putnam saw her he pointed out that she presented the symptoms of pressure on one side of the spinal cord at a definite level, not likely to be caused by anything except a new growth.

After the operation there was no return of sensibility for a day, and then only to a very slight degree. The motion was at first entirely absent, but began to return in three days. It increased, however, very slowly. At present she can walk alone, though with difficulty, and the sensibility is nearly perfect. Reflex spasms, especially of the muscles of the feet, have been very troublesome throughout. The knee-jerks are still very lively, though less so than before the operation.

I do not feel very enthusiastic about the future of the spinal operations after fracture, although I agree with Dr. Munro that they ought to be undertaken. I should like very much to know what the conditions were in the cases where recovery or marked improvement took place, because in the cases where the spinal cord has been examined after death so much hemorrhage has occurred inside the cord that it is rather difficult to understand just what the operation does in bringing about an improvement. Of course if there is actual pressure, as by a spicule of bone, that can be removed — and there is no doubt that this occasionally takes place and that the possibility of finding it amply justifies the search. It would seem from some of the cases I have read that improvement has occurred without regard to relief from pressure, and either there is some mysterious effect produced by operation which we have not learned to analyze, or else the patients might have improved anyway. A very interesting case was reported by Dr. Hammond, of New York, a year ago, where a professional wrestler who had been completely paralyzed from what was considered fracture and dislocation of the cervical vertebræ improved so much after operation that he finally returned to his old occupation.

In the second case that Dr. Warren referred to there was undoubtedly some new growth of the cord, but I should doubt very much if it was a case of syringomyelia, although that possibility is open and formed a part of the reason why the second operation was advised. When Dr. Warren operated the second time the cord presented itself as a bluish mass. A piece was afterwards examined which seemed to consist entirely of cells, and looked like a sarcomatous growth. The patient had been suffering for about twenty years from a complete paralysis which followed intense pain in the lower part of the back. He had been completely paralyzed a number of years when the first operation was done by Dr. Keen, at my suggestion, and with the idea that there might be an external tumor. The cord was found at the operation to be of dark color and of abnormally large size. After the operation his general condition improved very much, though the paralysis was of course unrelieved. Four years ago he had a severe and protracted attack of severe pain across the shoulders, and there were signs, such as absence of perspiration and change in the character of the perspiration, and sensory symptoms such as are seen in syringomyelia, indicating that the disease had invaded the upper portion of the spinal cord. The first attack of pain occurred in 1895 and lasted some months. It was relieved a great deal by ice-bags and hot-water bags, but in 1897 it returned with renewed force. He was obliged to sit up in order to have any comfort and was suffering extremely. After everything had been done that could be suggested I tried lumbar puncture. The needle failed to bring fluid, probably because [as appeared afterward] there was no fluid there. Dr. Warren operated at the old site, and he has had no pain since that time, now over a year. The cause of the improvement was perhaps a change in pressure, but it seems to me that it may have been a case of relief by "operation *in se*," or, in other words, by breaking up the habit of pain. One sees that sort of thing in connection with neuralgias of various sorts. A change of medicine or of scene, or occasionally a strong nervous shock, will drive away a severe neuralgia so that it may not return for a very long period.

I wish to add that Dr. Robert B. Greenough has been making a complete list of the reports of operated cases of spinal tumor, which will be published later. The results were, on the whole, very encouraging.

Dr. Bullard: Dr. Munro spoke of one case, a woman, who recovered after the operation. I would like to read a few notes:

Woman, twenty-five years old. June 8, 1896, had total paraplegia, with incontinence of urine. Knuckle at junction of dorsal and lumbar regions.

June 11, 1896. Laminectomy by Dr. Munro. The laminæ of the first and second lumbar vertebræ removed. The first lumbar vertebra was rotated. A sharp knuckle or angle of probably upper vertebra was found projecting posteriorly against anterior portion of cord, and below this on left was a projection from the lateral wall of canal extending to median line of canal and pressing the cord to about half its diameter. Opposite the lateral projection was a rent in the dura with a hernia of the lateral portion of the upper end of the cauda equina.

August 9th. Seems to be improving; can get considerable motion of toes.

August 23d. Great improvement; can move both legs quite freely; no return of sensation in legs; has control of bladder and rectum.

October 25th. Improves slowly in motion and sensation.

December 6th. Walks about without help of any kind.

December 15th. Gets about some and is in good condition.

This case very much resembles in certain respects Dr. Warren's first case. We should distinguish between pressure on the cord and that on the cauda equina. The cauda-equina cases recover with much greater readiness and facility than do the others.

I want also to speak of one case which occurred last summer at the City Hospital. The man came in with a fracture of the spine in the cervical region, apparently only involving one-half of the cord — Brown-Séquard paralysis. Operation was performed on the 9th of June. The hemiplegia was on the right side, the sensations diminished on the left side. After the operation the man was extremely ill for some days, but he gradually improved and on the 23d of September motion in the right extremities seemed to be slowly increasing. On the 10th of October sensation apparently normal on the left and motion in the right leg very much better. Discharged from the hospital on this date very much relieved. I have not seen him since.

These cases show that relief does sometimes follow laminectomy. It is, of course, impossible to say it was due to laminectomy, but I think it was. I think these cases began to improve not immediately but one or two months after the operation.

Dr. Goldthwait: My experience in laminectomy as regards fracture of the spine is naturally very limited, but I operated upon one case about three weeks ago which seems to me worth reporting in such a discussion, as it illustrates very readily the difficulty of determining the condition of the cord unless it is exposed. I saw the patient at the Haverhill Hospital, when I was there doing some other work, and was asked to operate. The man had been injured four or five days previously, and was absolutely paralyzed below his waist, with no sensation below the anterior spines of either thigh. There was no deformity. The location of the fracture was made by palpation and by the location of the paralysis. The operation was performed and the eleventh and twelfth spines removed, showing a cord which was apparently perfectly intact. On the side was a large spicule of bone three-fourths of an inch long, representing one of the wings of the laminæ, which was pressing directly on the cord. The dura had been penetrated so that there was some leakage, but no hemorrhage. The cord pulsated and it looked as if the case would get well right off. The man now has sensation in one leg down to the knee and in the other to the middle of the thigh. The bowels and bladder remain the same. It looked like a case which could improve at once, but, in the light of the experience Dr. Bullard has had, I should suppose there was a probability of his gaining considerably more than already shows. It seems to me that laminectomy in cases of spinal caries where paralysis comes on in the course of the disease after anchylosis has taken place is the advisable and desirable thing to do.

Dr. Elliot: My experience in this matter has been about as exemplified by the other gentlemen this evening. My first case was done May 15, 1890, which I think was the first case done in Boston since the present revival of the operation. A negro child was knocked down in Cambridge Street. There was complete paralysis and loss of sensation below the navel. At the operation the fifth, sixth and seventh dorsal vertebræ were opened; the fracture had gone into the pleural cavity, so that as I opened the spinal cavity the air sucked into the pleura and blew the blood out and in. The cord was found to be entirely severed, and to be creamy white and jellified at each end. The little chap recovered and is of course paralyzed. His bladder fortunately was drained for a time, and contracted so that it was finally obliterated, and his water simply runs away, causing no trouble. He has no cystitis. He is alive, has learned a trade, and I think he is a useful member of society.

My experience in the traumatic cases — I have seen a good many of them and have done a few of them — is that we shall rarely have an opportunity to take a piece of bone out of the cord. Traumatic cases are usually not brilliant successes. However, I should think that with an improvement in the use of x-rays we had something to hope for in the way of making an accurate diagnosis; even now where the spine is fractured if there is an amount of dislocation which would be apt to cause pressure on the cord it can often be demonstrated by x-ray photographs. In spinal caries I have had but one case which was improved by laminectomy. In new growths I have had but one case, and that was a sarcoma of the spine, where I took out the axis and the next vertebra; I think I may have taken the atlas out too. This was supposed to be a dislocation of the second cervical vertebra, and the patient was pretty much paralyzed and the respiration was getting to be affected, so that he was in a very distressing condition. The operation, which consisted in removing a large amount of sarcoma from the spinal canal, relieved him at once, and almost wholly, so that his respiration was good, and he sat up in a chair and moved his hands within two weeks and was much relieved of his pain. He is still doing well although the operation was done eight months ago.

DR. CHEEVER: Did I understand you to say that in 1890 you thought was the first operation for relief of pressure on the cord by trephining or removing the laminæ of the vertebræ?

DR. ELLIOT: For trephining for fractured spine.

DR. CHEEVER: Historically speaking, I suppose I ought to correct that. On January 14, 1867, it was done once by myself; and again I repeated the operation the same year. The cases are reported in the first volume of the City Hospital Reports, published in 1870, page 577.

DR. MUNRO: Dr. John Mason Warren performed a laminectomy for injury of the spine in 1867, two months after the operation performed by Dr. Cheever at the City Hospital.

DR. ELLIOT: Dr. Warren's case has been called to my attention. Dr. J. C. Warren has shown me the specimen.

In regard to the surgical technique, I object to Dr. Munro's dictum of thirty minutes' limit for duration of the operation. As a matter of fact, I do not think time is especially important in these cases. None of my cases have died and I think very few have had shock, and certainly I have not tried to do the operation in thirty minutes. The same is true of hysterectomy and other operations. I don't think time has much to do with the result. I object to hurry in an operation; I don't think you can avoid shock by doing it in thirty minutes. I have seen an operation done so rapidly that it caused shock. Horsley, whom I saw do these operations, did them nicely and quickly, but never hurried at all, made no attempt to do it in thirty or twenty or eight minutes, but all his cases I happened to see recovered and did well. I think shock is something more complex than the mere question of shortening the duration of an operation.

DR. MUNRO: I do want to protest on the question of time, because I think that it is an extremely important factor. When I say the operation ought to be done in thirty minutes I don't mean that there is need to hurry. After thirty minutes I am sure these cases show evidence of shock. When I say one surgeon has finished the operation in twelve minutes I do not mean that he has hurried, but that he has worked steadily and quietly without haste, and I am positive in this operation that time is an important question.

DR. BULLARD: I agree with Dr. Munro. I have records of 27 cases, and I think there is no question, other things being equal, that shortness of time is in favor of the patient. A great many patients have shock in a very short time, and others go a long time without shock, but that shortness of time, when the operation is properly done, diminishes the chance of shock is, in my opinion, quite certain.

DR. ELLIOT: The best proof I can have on the other side is that my patients have all recovered, and I don't think any of the operations have been done in twenty minutes; certainly no effort was made to do them in a very short time, but they have shown no sign of shock. I notice in Dr. Munro's cases that some of them are reported as having shock and some had no shock, and this had no special reference to length of the operation.

DR. MUNRO: The cases that had shock were usually septic, to begin with. I do believe that, as in head injuries, exposure alone of the nerve centres in a long operation does cause shock. I have found it so in operations on the brain and on the spine, and it has proved to be the case in other surgeons' hands as well.

DR. G. S. WHITESIDE reported a

CASE OF MELANOTIC SARCOMA, WITH AUTOPSY REPORT AND SPECIMENS.[1]

Medical Progress.

RECENT PROGRESS IN GYNECOLOGY.

BY EDWARD REYNOLDS, M.D., BOSTON.

THE EFFECTS PRODUCED IN THE FEMALE BY CASTRATION.

ALREADY Hegar and others have drawn attention to the fact that after castration there is apt to be a decided increase of leucorrhea. With the progressive atrophy of the genital organs the discharge gradually lessens and finally disappears altogether. An exception to this is found in cases in which the ovaries were removed to influence the growth of uterine fibroids. In this class of cases the discharge continues and is apt to increase. Phenomena usually observed after castration are various pains and discomforts, which appear at the time and instead of the menstrual period, and which are grouped under the term of molimina menstrualia. When the factors of menstruation are remembered the etiology of the symptoms is understood. The symptoms complained of vary in character; they are both local and general — flushes, nervous disturbances, sensations of heat followed by chilliness, vertigo, meteorismus, backache, abdominal pains, pains in the region of the ovaries, and also a bearing-down feeling and weight in the pelvic organs. These symptoms are most severe in the first months following the operation; they are apt to last about two years, and finally disappear entirely.

Pfister's investigations as to the libido sexualis are quite extensive and certainly important, because it is the one point upon which both patient and husband desire full explanation. To better understand the effects of castration upon this function it is advisable to briefly recapitulate its physiology. Here again the theory of Pflüger appears to be the most rational and conclusive one. The sexual activity of women depends largely upon the functions of the ovaries. The distention of the Graafian follicles reacts upon the ovarian nerves and is reflected upon the lumbar ganglia, from which erotic sensations emanate. To this are added the reflexes produced by body contact, all of which combine and result in the libido sexualis. From this it may be seen that the latter function also necessitates two factors, and that the absence of the ovaries is likely to diminish the sexual desire. At a period of sexual excitation the smallest external influences can arouse the libido sexualis, while at other times, when the sexual desire is not strong, even marked influences may pass without any effect. The glans clitoridis contains numerous nerve filaments, which end in the ganglia of Krause. From the latter ensue the sensuous sensations during the actus, while the desire to intercourse originates in the ovaries. Thus the ovaries contain the nerve centre, so to speak, of sexual desire, while from the nerve terminals of the glans clitoridis proceed the impulses to the brain, which are there perceived, and which cause the final orgasm. Some observers state that the ovaries intensify the action of the clitoric nerves. Practical experience, however, shows different results. Thus Pfister found in nearly 50 per cent. of his cases no diminution of the libido; in the remaining cases the desire was lessened, and in some it entirely disappeared. It should be noted, however, that in most of the cases belonging to the latter category this function was diminished, or even absent, prior to the operation, being due in part to age, in part to protracted invalidism. Another important factor influencing the extent of the libido is whether the person is single or married. In married women the brain has received previous impressions, which to a certain extent keep awake and prolong the period of sexual activity.

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[1] See page 470 of the Journal.

During the natural climacterium the ovarian substance changes into connective tissue, and the other genital organs, especially the uterus, become atrophic. Various authors have shown that after castration similar changes occur. The uterine atrophy is marked. Less constant are the changes in the vagina. Pfister's investigations show various instances in which this organ remained unchanged. As to the mammary glands, which must also be classed as genital organs, the results following castration are different. In some women the breasts become atrophic, while in others a decided increase in size was noted.

At the time of the normal climacterium the female body undergoes manifold changes, manifesting themselves in different parts of the organism. An especially marked phenomenon is the increase of adipose tissue. The expression of the face is changed, caused by a broadening of the lower jaws and greater prominence of the cheek. The waist increases in diameter and the hips grow broader and more massive. The uniform distribution of adipose tissue gives to the youthful individual the well-rounded and pleasing appearance. This changes with the advent of the climacterium, at which time the fat is deposited in parts in large quantities, while in other regions it disappears, leaving the skin loose and giving rise to the formation of furrows and wrinkles. After castration there is also a tendency to the formation of fat deposits, and in more than 50 per cent. an increase of the body weight was noted. There is, however, a difference between the changes of the natural and the artificial climacterium. After the latter the women retain their youthful appearance, and the fat deposits retain their symmetrical character and preserve the rounded contours of the body. In fact, castration seems to preserve appearance, and the changes of age appear later and are less marked. The hair is apt to retain its color, with an increased lustre. The complexion is clearer and wrinkles are rarely present. Even the eyes become more expressive and brighter. The hips and loins do not increase in width. The breasts, although smaller in size, remain round and firm and do not become flaccid and dependent, as after the natural climacterium. The growth of superfluous hairs at the upper lip and other parts of the face, which so often disfigure the faces of women past the menopause, rarely appears after castration. The changes which after the natural climacterium appear quickly occur very gradually after castration and may extend over a period of years. There is, however, a certain regularity with which these changes take place. Pfister's investigation comprised thirteen cases. In all of these menstruation ceased absolutely, and was followed by an atrophy of the uterus; there was also a marked increase in the weight of the body, which in some of the cases amounted to obesity.

The influence upon the nervous system is quite marked and well pronounced. Most frequently women complain of flushes, varying in severity, and which may last from a few months to several years. It should, however, be noted that in about one-half of the cases similar symptoms existed prior to the operation. The patients describe a peculiar sensation arising in the abdomen and extending upward toward the heart and lungs, giving rise to a feeling of heat and fulness in the head. Palpitation of the heart, vertigo, and buzzing in the ears may exist at the same time, but are frequently absent. The face appears congested and feels warm. The patient, however, complains of a chilly feeling extending down the back, especially in the centre, usually followed by profuse perspiration. These symptoms are most pronounced immediately after the operation and become more marked at regular intervals, which to a certain extent assimilate to the time of menstruation. In some cases these symptoms are most severe and produce actual suffering, while in others they are slight and hardly noticeable. In the latter cases the flushes soon fail to appear. Women very frequently complain of a headache having the character of true migraine. In many cases this has existed prior to the operation, but there are indubitable cases in which the headache appeared for the first time after the operation. A less frequent symptom is vomiting and nausea, also neuralgic pains involving the nerves, especially those of the lumbar plexus. Palpitation of the heart, hoarseness, inclination to cough, and insomnia are rarer symptoms.

The nervous symptoms following castration are certainly more intense than those of the climacterium, probably owing to the fact that the loss of ovarian function is sudden and not so gradual as during the natural menopause, thus causing a greater shock to the nervous system. In judging the influence of castration upon the nervous system the fact must not be lost sight of that quite a number of patients have been sufferers for years, often to such an extent that they willingly embrace every opportunity to procure relief and are anxious to undergo an operation. It seems but rational that in such cases the nervous system is also affected and that many of the symptoms predate an operation and are not altogether the result of castration. Pfister found from his inquiries that a depressed mental condition is the exception after castration, and in quite a few cases the patients became more cheerful and of a more sanguine temperament.

As to the loss of memory, Pfister noted in 74 cases a decided weakening of the memory; in 38 cases no change was observed. Regarding the therapeutic result of the operation, Pfister states that a comparison before and after the operation showed decided improvement and that the result of the operation is apparently very favorable. In many cases years of suffering gave way to comparatively good health and pronounced invalids became enabled to attend to their household duties. In the letters which were received in response to inquiries many patients expressed themselves in terms of deep gratitude, and, although suffering from minor discomforts, most of them state that they enjoy comparatively good health.

MYOMECTOMY WITH UTERINE DRAINAGE.

E. C. Dudley, writing in favor of myomectomy as opposed to hysterectomy, urges the attempt at this operation in all cases. For small tumors he obliterates the cavity with buried sutures. In case of large tumor, and consequently of large traumatism, with enormous surfaces to be united by buried sutures, closure of the uterine wound involves too great danger of sepsis, and the technique should be modified as follows: After the tumor has been shelled out from the uterine wall an opening is made directly from the tumor cavity to the uterine cavity. If the uterine canal is patulous a continuous strip of gauze is carried from the tumor cavity directly through the uterine canal into the vagina and the tumor cavity packed with the same continuous strip. The temporary elastic ligature around the cervix does not interfere with the introduction of the gauze. The uterine wound is then closed, as above described, by buried sutures and deep Lembert sutures of catgut. The peritoneal margins of the wound thus turned in and united, rapidly grow together, and the whole uterine traumatism, now isolated from the peritoneum, is adequately drained through the vagina. No abdominal drain is required. If the uterine canal is not sufficiently patulous it may be dilated, or bilaterally incised by means of a herniotomy knife, or it may be both dilated and incised. The vagina is loosely filled with gauze to meet that which protrudes from the uterus; an absorbent vulvar dressing, to be changed as often as it becomes moist, completes the capillary drain. The gauze is removed in two or three days. Care is necessary in the closure of the uterine wound that the gauze be not caught in the suture, because then its removal would have to be postponed until after the absorption of the suture.

The same principles will apply to an intraligamentous tumor. An intraligamentous myoma may be shelled out from its bed between the folds of the broad ligament. The same mode of drainage may be used in the case of intramural tumors, except the route of drainage. This should not be through the uterine canal, but through an opening which is readily made from the tumor cavity to a point in the vagina just back of or in front of the uterus; in exceptional cases it may be necessary for the purposes of hemostasis to ligature one of the ovarian arteries, or both. Experience has shown that sloughing of the uterus from thus cutting off its blood supply is not to be feared.

VAPORIZATION OF THE UTERUS.

Pincus emphasizes the value of this method as a means of sterilizing the uterine cavity prior to the performance of hysterectomy. About two minutes' vaporization with his apparatus obliterates and sterilizes the uterine cavity.

EXTIRPATION OF THE VAGINA.

Martin describes a new method of extirpation of the vagina and uterus for cancer, and reports a case. He first makes an incision around the introitus, and then with the finger detaches the vagina from the rectum and bladder. After the vagina has been detached the uterus is extirpated in the usual manner, the peritoneum is stitched together from the top of the wound, and the vagina is then obliterated transversely. His patient, who was sixty-one years old, made an uninterrupted recovery, and six months later there had been no recurrence. He believes the operation to be valuable not only for malignant diseases but also for the treatment of extreme prolapse. He says that it is exceedingly simple and free from technical difficulties. He has used it in six cases of prolapse.

METHOD OF CREATING A VAGINA IN A CASE OF CONGENITAL ABSENCE.

Robert Abbe planned and carried out the following operation on a woman, twenty-one years old, who had a congenital absence of the vagina: For several days the alimentary canal was made as empty as possible. A crescentic cut was made across the interlabial space, with concavity upward, thus getting a little shelf of mucous membrane below the urethra to divert escaping urine. By blunt dissection a free cellular space was readily created between the bladder and the rectum, to the depth of five inches. This was temporarily packed with sterile gauze to check oozing. Thiersch skin grafts were then cut from the thigh sufficiently large to cover an ample plug made thus: A thin French rubber condom, such as can be obtained at drug stores, was sterilized by boiling and stuffed with long strips of iodoform gauze to its full capacity. Upon this the skin grafts were spread with their wet sides outward and edges freely overlapping. Numerous small punctures had been previously made in the rubber after stuffing, so that the gauze contents would receive any discharge lurking about. A piece of rubber tubing the size of one's little finger, wrapped loosely about with iodoform gauze, was then inserted into the rectum, with a view of permitting free exit of gas during the subsequent days of enforced constipation. Finally the graft-covered form was carefully passed into the new vaginal space, the walls of which were held apart by three deep retractors, which on removal allowed the fresh surfaces to come into closest contact with the wet surface of the grafts. To prevent the plug from being in the slightest displaced two silkworm-gut stitches were passed across the vulva, transfixing the gauze-packed tampon, and tied over iodoform plugs at either side. The urine was drawn every eight hours for a week, with such precaution that no cystitis resulted. The bowels were confined for ten days, without the slightest discomfort to the patient. Light diet was given. No febrile reaction whatever followed. On the tenth day the retention suture was removed, the end of the plug cut, and the packing first removed before the rubber form. After cleansing it was seen that the grafts had taken universally and a new lined cavity had been created, four and one-half inches deep. The patient was married ten weeks after the operation. She keeps the vagina open by using a wax bougie part of every day. The bougie is held in place by a T-bandage. If the plug is omitted for one or two weeks considerable shrinkage takes place, but the renewal of the plug overcomes this.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

(Continued from No. 19, p. 456.)

The Fourteenth Annual Meeting was held in the Arlington Hotel, Washington, D. C., May 2, 3 and 4, 1899.

Dr. J. J. Putnam, of Boston, read a paper prepared by himself and Dr. J. Collins Warren, of Boston, entitled:

A CONTRIBUTION TO THE SUBJECT OF THE CLINICAL HISTORY AND SURGICAL TREATMENT OF TUMORS INVOLVING THE SPINAL CORD.

He reported first a case of intradural fibroma, which had given rise to typical symptoms of nerve-root and cord injury. These consisted, in the beginning, of pain in the lower abdomen and legs. At the end of six months there developed paralysis of motion and sensation of the Brown-Séquard type, exaggerated knee jerk, ankle clonus, difficulty in controlling the bladder, etc. The pain at this time was both spontaneous and provoked by defecation. A diagnosis was made of tumor involving the ninth dorsal segment. At the operation this diagnosis was confirmed and an almond-sized tumor readily removed. The patient was much improved by the operation and is now able to walk well with the assistance of a cane. The interest in the case centred in the wide distribution of the pain, the increase of the pain by defecation and distention of the intestines by gas, and the disturbance in sensibility, which was less in the sacral than in the lumbar distribution. The second case was one of intramedullary tumor of long standing. The patient had been operated upon first in 1891, but no tumor was found. For a time after the operation the patient improved, but then grew much worse. A second operation was performed at the site of the former one, and a considerable amount of cerebro-spinal fluid permitted to drain off for some time. The pain, which had formerly been excessive, ceased entirely, and has not returned after one and one-half years. The third case was one of sarcoma of the cervical vertebræ that seemed to have originated in a trauma. The symptoms of cord compression were marked, there being at first difficulty in locomotion and in moving the arms, without much disturbance of sensibility. Later the patient became confined to bed, and a protuberance was noticable in the pharynx. Operation was undertaken when the patient was almost moribund, and a portion of the growth removed. Upon microscopic examination it was found to be a giant-cell sarcoma. A review of the reported cases of operation for the relief of tumors involving the spinal cord was then detailed, with particular reference to the prominent clinical manifestations and operative technic.

Dr. M. Allen Starr, of New York, read a paper entitled

ON THE TREATMENT OF TABES.

He stated that the most recent conception of tabes is that it is a degeneration of the sensory neurons. The sclerosis is thus a secondary alteration, a proliferative change to supply a defect of degeneration. Of sensory neurons there are several kinds, and any may become involved in tabes. As a matter of fact though there are but two that are pre-eminently affected and it is thus possible to speak of two types of tabes, a spinal type and an optic type. Of 300 cases but 30 were of the optic type. The two types are distinct in onset and course, though both may later present manifestations of the other. The spinal type may be acute and rapid in its course, or it may be chronic, and often remain stationary for some years. Of the optic type, blindness is naturally the earliest and most prominent manifestation. The treatment of the disease differs somewhat according to the type, but the first essential is the general nutrition of the patient. The general nutrition and strength of the patient must be built up by a generous amount of easily digested food, moderate stimulation, exercise short of fatigue, baths and massage. By thus improving the general health of the individual the nutrition of each neuron is enhanced and the degenerative process counteracted. Antisyphilitic treatment should be postponed until the general condition of the patient is improved, when it may frequently be employed with great utility. Fraenkel's movements are also of value if systematically carried out. Of medicines, cod-liver oil, glycerophosphates, arsenic and tonics are of greatest benefit.

In the discussion Dr. J. J. Putnam spoke of some of the indications for the employment of hydrotherapeutic measures and gymnastic exercises.

Dr. Wharton Sinkler, of Philadelphia, confirmed Dr. Starr's clinical and therapeutic observations, directing particular attention to the paramount importance of building up the nutrition of the patient. He spoke also of the commonly disastrous consequences of large doses of the iodides.

Dr. W. H. Thomson concurred with Dr. Starr in his division of the disease into two types and also in his therapeutic directions. He spoke of the value of the actual cautery over the spine in girdle pains, and of the relief afforded by a "red pepper patch" when placed over various painful localities.

Dr. C. F. Folsom spoke of the value of massage and gymnastics, and stated that in the administration of the iodides the patient must be carefully watched, as these salts are often of doubtful utility. If, however, they are well borne they often facilitate the building-up process.

Dr. B. Sachs, of New York, concurring in Dr. Starr's clinical and therapeutic observations, said that it must not be overlooked that some cases diagnosticated as tabes are undoubtedly cases of spinal syphilis, and that in these antisyphilitic treatment is of value. Thus early in a case the question of the institution of such treatment requires careful consideration.

Dr. Charles Cary, of Buffalo, stated that the ill effects attending the use of the iodides may often be obviated by their administration two hours after meals.

Dr. E. G. Janeway, of New York, mentioned the improvement in cases of chronic syphilitic fever following the mixed treatment, and cited a case of presumable incipient tabes likewise similarly improved.

Dr. J. B. Herrick, of Chicago, read a paper on

KERNIG'S SIGN IN MENINGITIS.

He narrated his personal observations regarding the value of the sign first described by Kernig in 1884 and revived by Netter in 1898, an inability to extend the leg when the thigh is flexed at a right angle with the body. He had observed 19 cases of meningitis with 6 necropsies. The sign was present in 17, absent in 2. The latter were seen shortly prior to death and the examination was untrustworthy. In most cases the sign was merely confirmatory of the diagnosis, but in some cases it was of distinct value. In one case of typhoid fever, though the sign was present, there was no other clear evidence of meningitis. The patient died from perforation, and the necropsy revealed a meningitis due to the staphylococcus pyogenes aureus and the bacillus typhosus. In 100 other cases it was absent in 98 and present in 2 — one of extradural hemorrhage and one of gonorrheal arthritis with contractures. No satisfactory explanation of the phenomenon has been advanced — it is not due to increase of intracerebral pressure.

In the discussion **Dr. William Osler** stated that he had observed the sign in cases of epidemic cerebrospinal meningitis, but that it was hardly of any service in diagnosis. It might, however, be of value in obscure cases.

Dr. J. P. Crozer Griffith offered evidence of the positive value of the sign; he had not observed it in any conditions other than meningitis.

Dr. James C. Wilson, of Philadelphia, read a paper entitled

ON ASTASIA-ABASIA, WITH A CASE.

He presented a historical reference to the literature of the subject, and reported a personal observation in detail. His patient was a female, age twenty-four years, of neurotic inheritance. She was in good health until she had an unsatisfactory love affair. Subsequently she suffered with bath pruritus, and one night was much shocked by the receipt of an indifferent telegram. The next day she complained of subjective sensations of pain and pricking in the limbs, but while in bed or when sitting there were no disturbances of either motion or sensation. Attempting to stand, however, she was unable to do so, there occurring various irregular contortions of the lower limbs, with compensatory movements of the upper extremities to maintain equilibrium. Under treatment, consisting principally of faradism and massage, she improved somewhat. She was then taught to stand anew and made rapid improvement. Later she had distinct hysteric manifestations with which the former attack was undoubtedly associated. The discussion was participated in by Drs. Jacobi, Thomson and Henry.

Dr. J. K. Mitchell, of Philadelphia, reported a

CASE OF FAMILY PERIODIC PARALYSIS.

Prior to his report but three undoubted cases of like kind had been reported in America and but about sixteen in Europe. His patient was a boy, age eighteen years, who at irregular intervals would be more or less suddenly attacked with paralysis. The attacks often come during the night, the patient awaking with total paralysis, complete abolition of the skin, muscle, and tendon reflexes, loss of faradic and galvanic irritability, unaltered sensibility, and impaired mind and speech. Examinations of the urine, feces, and blood for long periods of time yielded negative results; in particular no ptomaines could be isolated. Similar attacks are hereditary in the family of the patient's mother, in which five cases are known. The consistency of the manifestations in the attacks is of interest, as well as the condition of the heart, there being a systolic murmur in the pulmonary area. Treatment is of no avail. The condition was thought to be autotoxic; the formation of the toxins uncontrollable. Two poisons were considered to be produced, one or the other predominating in the individual attacks. One was thought to have an action upon the peripheral nerves and muscles, the other on the spinal cord. The attacks are probably not hysteric, nor the equivalent of an epileptic seizure.

In the discussion **Dr. J. J. Putnam** stated that he had observed an almost analogous case.

SECOND DAY.

Dr. W. W. Johnston, of Washington, read a paper entitled

THE CONTINUED FEVER OF EPIDEMIC INFLUENZA.

He referred to the meagre literature on the subject, and reported his observations of a number of cases. He stated that the onset of the disorder might be sudden, with marked catarrhal manifestations, that these may subside, that the fever may then slowly rise again, and not attain the normal for fourteen or sixteen days. Occasionally it resembles typhoid fever. When the temperature reaches normal the patient is not well, as fever may continue for some time. He reported one observation in which the fever continued for sixty-seven days, and another for one hundred and four days. Several charts were exhibited showing that the early part of the fever curve resembles that of typhoid fever, but that the latter part does not, there being long continued slight oscillations. In contradistinction to other infectious diseases, with long continued fever commonly dependent upon some complication, these cases reveal normal hearts, lungs, etc., except weakness of the heart, probably due to myocarditis, the result of the continued action of the toxin. Manifestations of cardiac dilatation sometimes supervene. It is especially difficult to differentiate the condition from enteric fever and tuberculosis. Treatment should be supportive, especial attention being devoted to the condition of the heart and the nervous system. For the latter morphine is most serviceable.

Dr. Victor C. Vaughn, of Ann Arbor, read a paper entitled

SOME REMARKS ON TYPHOID FEVER AMONG THE AMERICAN SOLDIERS IN THE RECENT WAR WITH SPAIN.

The paper was the result of an investigation into the causes of the introduction and spread of typhoid fever in some of the regiments encamped in this country. It was stated that the true number of cases of typhoid fever was not contained in the official reports, the nature of many undoubted cases being masked by the diagnosis of malaria in many cases of protracted fever, in which examination of the blood showed the absence of any malarial hematozoa, by the diagnosis of indigestion (the mortality from which in some regiments was 15 per cent., by the diagnosis in other regiments of dengue, and again of enteric fever as distinguished from typhoid fever. It was evident from the investigation that the majority of the men were infected when they reached the camps. More than 90 per cent. of the volunteer troops affected at

Chickamauga were infected when they reached that camp. Some were infected in their State camps; others brought the infection from their homes. There was no evidence that the water supply was infected prior to the arrival of the troops. In some cases in which the same water was partaken of by the inhabitants of the neighboring town and the encamped soldiers the latter were affected with typhoid fever, the former not. It was concluded that water infection played a very insignificant rôle in the spread of the disease among the troops. It was equally clear that infection came through an improper disposal of fecal matter and urine. It was impossible to walk through some camps without soiling one's shoes with fecal matter. Over this flies swarmed and subsequently infected the food. Previous intestinal disoders seemed to have little effect in causing an attack of typhoid fever. But many of the intestinal disorders diagnosed otherwise were undoubtedly typhoid fever. Another potent factor in the spread of the infection was the fact that the disease was often far advanced before its real nature was recognized. Methods for the proper disposal of fecal matter were recommended, and care in the selection of medical officers, as well as the delegation of more authority to them, was earnestly recommended.

In the discussion **Surgeon-General Sternberg** deprecated the occurrence of typhoid fever among the soldiers, stating that it was attributable in large part to the non-appreciation on the part of the regimental officers of what they were content to designate the "fads" of the doctors relative to sanitation. In addition, the spread of the disease was to be ascribed to the non-recognition, on the part of the physicians, of the true nature of many cases of disease, and to the non-disinfection of excreta. The inadequacy in point of numbers of the medical department, even in time of peace, was also commented upon. He stated also that although most of the medical officers of the volunteer army were equal to the average physician of their neighborhood, most of them had to learn even the rudiments of camp sanitation, and he advocated that the medical schools should devote more attention to hygiene.

Dr. Francis P. Kinnicutt, of New York, detailed some experiences at Montauk Point and in the New York hospitals, mentioning the inefficient sanitary measures. He advocated greater knowledge and greater power on the part of the medical officers.

Dr. George L. Peabody, of New York, stated that Dr. Vaughn's paper was a great indictment of the medical officers, and advocated the distribution of the paper among these officers and the adoption of a requisite to subsequent appointment that all applicants for the position of assistant surgeon in the army be required to familiarize themselves with the paper.

Dr. George Dock narrated some experiences, particularly at the Sternberg General Hospital, and exhibited several instructive charts. He spoke of the lamentable lack of knowledge of the clinical course of typhoid fever on the part of many of the medical officers coming from civil life. A great amount of quinine had been given to many of the patients with mistaken diagnoses, and although the cases continued the diagnosis was not altered. The protracted cases almost without exception were instances of typhoid fever.

Dr. Abram Jacobi deprecated the appointment of incompetent regimental surgeons by the governors of States and the necessity of their acceptance by the surgeon-general.

Dr. D. W. Prentiss, of Washington, asked if any ill effects had been observed from large doses of quinine.

Dr. Dock replied that sometimes such had been observed and sometimes not. Large doses at times seemed to depress the mind and disorder the stomach.

Dr. S. Solis Cohen, of Philadelphia, spoke of a Pennsylvania regiment in which satisfactory sanitary measures had been ordered by the regimental surgeons, and faithfully carried out by the regimental officers, and no typhoid fever developed. In other regiments sanitary measures were not carried out and typhoid fever developed. He also spoke of the occurrence of mixed typhoid and malarial infection. In camp all cases of fever should be considered typhoid fever until proved otherwise. If a case of fever does not yield to two hypodermic injections of fifteen grains each of the double hydrochlorate of quinine and urea it is not malaria.

Dr. Vaughn stated that the average medical officer in the volunteer army was as good as the average surgeon, but that he is powerless to prevent or cure disease unless the line officers follow his directions, and this the latter are often not disposed to do.

(To be continued.)

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Recent Literature.

A Practical Treatise on Fractures and Dislocations. By **Lewis A. Stimson**, B.A., M.D., Professor of Surgery in Cornell University Medical College, New York; Surgeon to the New York and Hudson Street Hospitals; Consulting Surgeon to Bellevue, St. John's, and Christ Hospitals; Corresponding Member of the Société de Chirurgie of Paris. With 326 illustrations and 20 plates in monotint. New York and Philadelphia: Lea Brothers & Co. 1899.

It can hardly be said that this is a second edition of the author's earlier work, as it has been essentially rewritten and much of the substance matter is entirely new. One of the most valuable principles of Dr. Stimson's earlier work was the historical fulness of his work on fractures and dislocations, and we are glad to say that this has been retained in the present volume. It is profusely illustrated, and, where necessary and possible, by skiagrams. We would especially call the attention of the reader to the following quotation from the preface of the book: "In studying these photographs it must be remembered that they are the reproductions of shadows, not, like ordinary photographs, of the appearance of illuminated surfaces, and that the apparent modelling of the bones is inexact, because it is due to differences in thickness and opacity to the rays. While the x-rays have been of interest and value in showing details of certain fractures, especially at the wrist, elbow and ankle, yet it cannot fairly be said that they have yielded much information of practical value which could not have been obtained by palpation. Probably their usefulness will be increased by improvements in methods and apparatus, but at present the information which they give needs to be sifted with great care from among many misleading appearances." We believe that this presents the true value of x-ray skiagrams. The book is undoubtedly the best work on fractures and dislocations that has been written.

The Treatment of Wounds. Its Principles and Practice, General and Special. By Lewis Stephen Pilcher, A.M., M.D., Surgeon to the Methodist Episcopal Hospital in New York; late Passed Assistant Surgeon, United States Navy; Fellow of the American Surgical Association; Member of the Brooklyn Surgical Society; Honorary Member of the New York Surgical Society. With one hundred and forty-two wood engravings. New York: William Wood & Company. 1899.

We are very glad that Dr. Pilcher has written this book. It is very much needed and it will serve as a standard book upon this subject. The subject of the treatment of wounds has not received that careful attention that it demands and in this work we find the author has studied the subject very carefully. The original methods of antiseptic work are judiciously retained and the new methods are presented in detail.

Manual of Operative Surgery. By H. J. Waring, M.S., M.B., B. Sc. (Lond.), F.R.C.S., Demonstrator of Operative Surgery and Surgical Registrar, late Senior Demonstrator of Anatomy, St. Bartholomew's Hospital; Surgeon to the Metropolitan Hospital; Surgeon in Charge of the Throat and Ear Department, Metropolitan Hospital; Surgeon to the Belgrave Hospital for Children, and Erasmus Wilson, Lecturer to the Royal College of Surgeons, England. Edinburgh and London: Young J. Pentland. New York: The Macmillan Company. 1898.

This book was written to serve as a text-book for classes in operative surgery at St. Bartholomew's, and while very complete has no distinctive value. The illustrations are principally outline drawings and are really valuable, although they are simply diagrams. The clearness of these outline drawings gives them a distinct advantage over the indefinite "process" cuts that we so frequently see. The descriptions are clear, although sketchy. The book, while useful to the author's students, has no permanent value.

Traumatic Separation of the Epiphyses. By John Poland, F.R.C.S. With three hundred and thirty-seven illustrations and skiagrams. London: Smith, Elder & Co. 1898.

This is a work of 880 pages and accompanying it is a skiagraphic atlas of forty illustrations. On seeing the volume and the accompanying atlas of skiagraphs one wonders at its size, but on looking it over it is easy to understand how the work has grown. It is unquestionably the most complete work on this subject and will for a great many years be the book of reference for these injuries. It has peculiar value in that it gives skiagraphic plates of the development of the hand from the age of twelve months to adult life. Practically all the information that exists on this subject has been collated and the volume will be always recognized as an authority. Such work as is represented in this volume is of the greatest value to the profession, and we congratulate the author on the completion of his work.

THE BOSTON

Medical and Surgical Journal.

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BOSTON MEDICAL LIBRARY.

There is perhaps no topic upon which medical opinion in Boston and its vicinity so well agrees as this, — the imperative need of better accommodations for the Boston Medical Library. The subject has threatened to become threadbare and worn out with discussion. It is therefore with the greatest satisfaction that we learn that a new era is at hand and that there is a stronger probability than has existed for years that a new library is to be secured. The substance of this can be summarized in a few words. The Committee which has charge of the raising of funds and the erection of a new building has voted to pay the mortgage of $8,500 resting upon property of the Library and to arrange for the sale of the old building. The Committee has further decided that the new library shall not be obtained, as at first proposed, by the remodelling of an old house, but by the erection of a new building especially adapted for its purposes. It has referred to the members of the Society the decision between two sites,— the lot, already the property of the Society, on the corner of Garrison and St. Botolph Streets, and the land adjacent to the westerly side of the building of the Massachusetts Historical Society, on the Fenway. Finally, a proposition has been submitted to the General Committee by which the younger members of the profession guarantee for five years the interest on some $25,000, with this proviso, that a total of $50,000 be obtained by similar guaranty or capital before June 1, 1899.

The Boston Medical Library has done much for medicine in our community. It has brought together under one roof, and thus made accessible, the smaller collections of medical books which previously were located in different parts of the city. To these new volumes have constantly been added. What is of still more value is the remarkably large amount of current literature with completed files, which testifies so much to the patience and perseverance of the librarian. All this is enhanced by rare collections of books on special branches of medicine, and by portraits and memorabilia of those who made Boston known for her doctors in earlier times. Furthermore, the library has served as the place of meeting for the various medical societies, and has furnished a directory of nurses, the advantages of which only those can realize who were in the profession prior to its formation. With such a record behind it, the Boston Medical Library of the past can well be proud.

The Boston Medical Library of the future, however, has an even greater mission. Not only must it continue and improve upon its earlier work, but newer and broader fields of activity for it are already in view. Attractive reading-rooms with all the resources of the Association at command are sure to make the library still more popular in the profession and to stimulate good work. Consultation-rooms in which doctors in or out of town can make appointments, a smoking-room, and halls capable of accommodating the various societies, a fitting and proper place for the directory of nurses, — these are simply corollaries of the new library and improvements on conditions already existing.

The new library should stand for all this and for far more; it should keep pace with Boston's advances in medicine. In the last few years increasing numbers of students and physicians have come to our city for study in summer and post-graduate courses. In each branch of medicine facilities for teaching have taken great strides and new laboratories and hospitals have led the way to further development. But if Boston is to hold her rank in medical progress she must have what other cities have, alike in Europe and America, a centre of medicine. Berlin, Vienna, Philadelphia and New York, each has a Medical Library Building commensurate with the position it holds in medicine, giving dignity to the profession and representing to the community the highest tribunal of medical science. And this is to be one of the chief functions of the new Medical Library. It is to be the home of medicine to which all the members of the profession can come; it is to be the court of medicine to which all questions of hygiene and public health can be referred; it is to be the centre of medicine of Boston, of Massachusetts, and of New England.

Therefore, when you are asked to give to the new Medical Library, give, remembering that your gift is to the Library, with all the worth which that word implies, but not to that alone: you are contributing to the greater medicine of Greater Boston.

GLOVES IN SURGERY.

A CAREFUL piece of experimental work upon this subject has been done by Lockett, who writes as follows[1]:

"In the present state of surgical asepsis all sources of infection may be practically excluded except the skin of the patient and the hands of the operator and his assistants. The belief that the skin of the patient is not usually the source of infection is strengthened by the repeated observation that the disinfection of the field of operation is usually much more prolonged and thorough than is that of the hands of the operator and his assistants, and by the fact that operations in which the hands do not come in contact with the wound are apt to be followed by excellent results, notwithstanding that the cut and bruised condition of the skin decreases its vitality and resistance to infection. It should also be remembered that the skin of the patient can hardly be said to come in contact with the wound.

"Halsted, as a result of his experiments on the disinfection of the hands, came to the conclusion which is now held by many observers, that it was practically impossible to secure absolute disinfection of the hands by existing methods. Even after a condition of surface sterility is obtained, the deeper layers of the epidermis contain bacteria which by prolonged maceration, such as is involved in a long operation, are set free. However careful the surgeon may be, the fact remains that infection may occur from his hands or from the hands of his assistants. It is believed that this difficulty can be in a great measure overcome by covering the hands with a material which can be made absolutely sterile and which, while impermeable to bacteria, does not materially interfere with the sense of touch, the handling of instruments, ligatures, etc., or the manipulation of such delicate tissues as the peritoneum and intestines. These considerations led to the use of gloves. The character of the glove to be used is of the utmost importance and should have careful consideration.

"Halsted has used rubber gloves from the first. Mikulicz, of Breslau, introduced the use of the cheaper cotton gloves; he does not now use them in their original state, but incorporates in them some impermeable material or employs a glove made of impermeable material. Keen used cotton gloves in his clinics at the Jefferson Hospital, but not being satisfied that they would prevent all infection occurring from the hands, he suggested a series of bacteriologic investigations to determine their value. These experiments were conducted by Lockett in the laboratories of the Jefferson Medical College Hospital, under the supervision of Prof. W. M. L. Coplin, director of the laboratories:

(1) The hands were disinfected. The finger nails were cut short and cleansed. The hands were then scrubbed in hot water with green soap and a brush. They were then rubbed with a mixture of equal parts of calcium chloride and sodium carbonate, especial care being taken to cleanse the finger nails, the paste formed by the mixture being pushed around the edges and under the nails by a blunt-pointed orangewood stick kept for this purpose. The hands were then washed in sterile water and scrubbed in bichloride solution 1-1,000. A glove sterilized in a steam sterilizer for one hour was drawn on the disinfected hand, and one finger of the hand was held in a large mouth test-tube containing beef peptone bouillon for five, ten, and fif-

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[1] Philadelphia Medical Journal, February 11, 1899.

teen minutes respectively. A different finger and a different glove were used in each instance, as was also done in the experiments below. The mouth of the test-tube was passed through a flame before introducing the finger. The tubes of the bouillon were incubated at a temperature of 37° C. for three days, at the end of which time they remained sterile.

(2) A sterilized glove was drawn on a non-disinfected hand and a glove finger held in bouillon for five, ten, and fifteen minutes respectively. The tubes of bouillon were incubated and all sooner or later showed infection, the bacteria of suppuration predominating.

(3) A non-disinfected finger was held in a bouillon culture of bacillus prodigiosus five minutes. A sterilized glove was drawn on and the finger moved around in a wide-mouth test-tube containing bouillon for five, ten, and fifteen minutes respectively. The three tubes of bouillon were then incubated; the tubes quickly showed infection in each case.

(4) A sterilized glove was drawn on a disinfected hand and a finger moved around in a bouillon culture of bacillus prodigiosus for five, ten, and fifteen minutes respectively. The glove was taken off and the finger moved around in a tube containing bouillon for the same length of time as in the previous experiment. These tubes were then incubated and were found to contain in all cases the bacillus prodigiosus.

(5) A sterilized test-tube and a sterilized glove were taken and one finger of the glove placed in the test-tube. A bouillon culture of prodigiosus was poured into the finger of the glove; the pigmented bouillon passed through the glove at once; incubation showed that the glove in no wise prevented the passage of the germ.

(6) Gloves were also paraffined according to the method of C. Menge, as follows: Dry gloves were immersed in alcohol, then in pure xyol, then in xyol containing ten grammes of paraffine in solution to each one hundred cubic centimetres of xyol. This solution was kept slightly warm and the gloves allowed to remain in it fifteen minutes, when they were wrung out and dried. A finger of one of these sterilized paraffined gloves was placed in a sterilized test-tube and a bouillon culture passed through the glove and was found to contain the bacteria in question.

(7) Thinking the fibrin of the blood might so fill the meshes of the glove as to prevent the passage of bacteria, sterilized paraffined and non-paraffined gloves were immersed in fresh blood (bovine), wrung out and allowed to dry. A bouillon culture of prodigiosus poured into a finger of each glove passed through and was found to contain the bacillus prodigiosus.

(8) In addition to the experiment with paraffined gloves just mentioned, the same experiments were made with them as with the unparaffined gloves, and with the same results. Both the thin German gloves procured by Professor Keen and the heavier gloves purchased in this country were used in all the foregoing experiments. It was found that these gloves could be sterilized in the autoclave for twenty minutes at a temperature of 111° C. or in a steam sterilizer for one hour, and that when so sterilized were found to be free from germs. It was also found that the paraffined gloves could be sterilized one hour in a steam sterilizer without any apparent damage to the paraffine.

"The results of the above experiments seem to prove the absolute inefficiency of cotton gloves; both in their original state and when paraffined they fail to prevent infection from the hands. It therefore becomes necessary to look further for a glove which may accomplish the purpose desired.

"Perthes, of Leipzig, uses rubber gloves or silk gloves with a rubber covering, and with these on the hands one can feel even the light touch of a brush. Halsted uses india-rubber gloves, which, after boiling, are dropped into large basins containing mercuric chloride solution, filled with this solution by the surgeon who is to wear them, and drawn on while full, the hands having been previously disinfected as if the gloves were not going to be worn. The same chain of reasoning already presented in this article led McBurney, of New York, to adopt the use of rubber gloves. His gloves are prepared by washing them with soap and water to which a little aqua ammonia has been added. They are then boiled for fifteen minutes in a one-per-cent. solution and laid in the centre of a sterilized towel. The towel is folded over the gloves and not opened until the operator and his assistants are ready to put them on. If the dry hands are rubbed with dry sterilized starch the gloves can be drawn on with ease, even if their interior is moist If the hand is moistened with glycerin or lubrichondrin wet gloves may be easily drawn on. Filled with any sterile fluid, the gloves permit the ready entrance of the hand. If the latter method of putting them on is adopted the hands must be previously as thoroughly disinfected as they would be if gloves were not going to be worn. If the hands are not disinfected, and the accident of tearing or puncturing the gloves occurs during the operation, the wound will most likely become infected, because such accidents may occur without being recognized in time to prevent infection. Previous disinfection of the hands is most important to the operator who has just adopted the use of the gloves, for, on account of not being accustomed to their use, tears and punctures are more likely to occur. When one has become accustomed to gloves the probability of such accidents occurring is slight; but, unless want of time forbids, the hands should always be as thoroughly disinfected as possible. Inasmuch as rubber gloves can be boiled, they can be rendered absolutely free from germs; and as they are non-absorbent, they must remain so, unless they come in contact with septic material. It is claimed that they are impermeable to bacteria, and if occasion demands, a surgeon having a suppurating lesion upon his hand may operate without danger to the patient from his source, provided tearing or puncturing of the gloves does not occur."

After all has been said and done, the permeability of cotton gloves and the danger of tears or punctures in rubber gloves render it necessary for the surgeon who employs them to disinfect his hands as carefully as if he were going to operate without them. It is also an undisputed fact that a large number of our best surgeons, while not finding that the gloves interfere with the sense of touch for such purposes as vaginal examinations or the examination of wounds and the like, do find that they interfere with the more delicate manipulations, such as the handling of fine sutures and needles in intestinal suture, and interfere if not with delicacy at least with rapidity of operating.

Such excellent results are attained by men who habitually keep their hands clean, and are careful in their disinfection without the use of gloves, that their adoption for routine operating has been by no means universal.

The chief advantage in the use of gloves seems to be in the fact that when, as not infrequently happens, a surgeon is called upon to operate upon a septic case shortly before the performance of an aseptic operation, he may employ rubber gloves for the former, and be thereby enabled to operate with bare hands upon the second case without danger to the patient, provided no punctures of the gloves have occurred. When it is necessary to make vaginal or rectal examinations shortly before opening the abdominal cavity the gloves are an excellent resource, as they do not interfere with the quality of touch required for these purposes, and there is no danger of puncture. For such purposes, and for private operating when it is not infrequently necessary to handle the patient, adjust the tables, etc., immediately before operating, sterile gloves are of great value.

For the more delicate manipulations of aseptic surgery, however, including a very large class of both major and minor operations, the advantages of their use admit of argument.

Whether they are employed or not they should by no means form an excuse for laxity on the part of the surgeon in regard to the habitual care and cleanliness of his hands, which should be not only kept constantly clean but prepared for operation with fully as much care as is the skin of the patient.

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MEDICAL NOTES.

Typhoid Fever among the Soldiers. — Dr. V. C. Vaughan's paper on Typhoid Fever among the American Soldiers in the Recent War with Spain, read at the annual meeting of the Association of American Physicians, and the discussion thereon deserve the attention of the profession.

Officers of the American Climatological Association, 1899. — At the meeting of the American Climatological Association held in New York, May 9th–11th, the following officers were elected: President, A. Jacobi, M.D., New York. Vice-presidents, R. H. Babcock, M.D., Chicago; J. W. Brannan, M.D., New York. Secretary and Treasurer, Guy Hinsdale, M.D., Philadelphia. Council, S. E. Solly, M.D., Colorado Springs; James B. Walker, M.D., Philadelphia; E. Fletcher Ingals, M.D., Chicago; E. O. Otis, M.D., Boston; Beverley Robinson, M.D., New York. Representative to the Executive Committee of the Congress of American Physicians and Surgeons, Frederick I. Knight, M.D., Boston; Roland G. Curtin, M.D., Philadelphia, *Alternate.*

Comparative Mortality in the Philippine Islands. — A translation of the official Spanish reports for the five years ending in 1898 gives the mortality among the Christian population and such non-Christians as were Spanish subjects. It includes 53 provinces, containing a total population of 6,211,706 souls, and having an average annual death-rate of 27.1 per thousand. The average density of the population throughout the islands is given as 21.431 per square kilometer. The annual death-rate for the province of Manila is given as 26.2 per thousand, and that of Iloilo as 24.4 per thousand. The lowest mortality was that of the island of Marianas, 10.4 in a population of 9,770, while the highest death-rate is found in the province of Cagayan, with an annual death-rate of 53.9 per thousand, a total population of 96,357, and containing six inhabitants for each square meter of territory. The death-rate of Mindoro, among the Sulu Mahommedans, is given as 16.6, and its population as 68,991. The most densely populated province is that of Manila, with 462 souls to each square kilometer, while the most sparse population is found in the island of Isabella de Basilan, with one inhabitant for each square kilometer.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, May 17, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 52, scarlet fever 36, measles 90, typhoid fever 11.

No more Small-pox in Boston. — The Boston Board of Health has announced that small-pox has disappeared from the city, no cases having been recently reported. There are two cases convalescent at the small-pox hospital.

An Examination by the New Hampshire Board. — The fifth examination for licenses to practise medicine in the State of New Hampshire will be held at the State House, Concord, on Tuesday and Wednesday, June 20 and 21, 1899, beginning at 8 o'clock A. M. All unlicensed physicians who were not in practice in this State on and before March 16, 1897 must pass the examinations in order to receive a license to practise legally their profession.

NEW YORK.

Dr. W. L. Dalrymple a Health Officer. — Dr. W. L. Dalrymple has been appointed health officer of New Rochelle, Westchester County, which has just been incorporated as a city.

The Board of Health and Unlicensed Practitioners. — The president of the Health Department has sent to Dr. Charles F. Roberts, the sanitary superintendent, a letter in which he requests the latter to direct the assistant sanitary superintendents of all the boroughs of the city to use all means in their power to discover and locate persons practising medicine without proper diplomas. It has come to the knowledge of the Department, he says, that uneducated and unscrupulous persons are in the habit of going about from house to house and taking advantage of the ignorant by professing to be endowed with wonderful healing faculties. In order that the most efficient measures for remedying such evils may be adopted he suggests that Dr. Roberts should immediately communicate with the medical societies of the several counties now comprised in the limits of the city. "It is only by the aid of medical societies," he remarks in conclusion, "that this Department can meet with success, and to them we must look for advice and example."

Two cases that have recently been attracting a good deal of public attention seem to have been the inspiration for the activity of the Board of Health in the matter. One is that of Dora Kranz, a Brooklyn child. Some time since she was found to be suffering from gangrene of the toes, and immediate amputation was advised by Dr. Silas B. Blaisdell, of the Eastern District Hospital, in consultation with Dr. George B. Fowler. The mother refused to have the amputation done, and soon afterwards the professional services of Mrs. Mary Müller, a "Magic Curist," were called in requisition. Under her administrations, which consisted mainly of mysterious incantations, the gangrene continued to spread, and by the time the mother had paid something over fifty dollars to the so-called healer the child's foot sloughed completely off. The patient was then removed to the Eastern District Hospital, and her life could be saved only by the amputation of the limb above the knee-joint. Later Mrs. Müller was arrested and held in $350 bail on the charge of practising medicine without legal qualification. The other case was that of Mrs. Charlotte M. Barguet, who died of pleurisy, at Mount Vernon, just beyond the Borough of the Bronx, under the treatment of Mrs. Clarence Fowler, a Christian Science healer. The coroner, acting on the finding of the jury at the inquest, ordered the arrest of Mrs. Fowler and the son and daughter of the deceased, and those individuals, two of them under bonds of $1,000 each, have been held to await the action of the grand jury of Westchester County.

THE HEALTH OF THE CITY. — The health of the city, as indicated by the returns of the Bureau of Vital Statistics, continues very good, though, rather curiously, the mortality of the month of April shows no reduction from that of March. The average death-rate for the four weeks ending April 29th was 18.88, against 18.63 for the four weeks ending April 1st.

A VISIT TO THE LOOMIS SANITARIUM. — The members of the American Climatological Association, which was in session at the Academy of Medicine on May 8th, 9th and 10th, were given on May 12th, with their families, a complimentary trip to the Loomis Sanitarium for Consumptives at Liberty, Sullivan County.

THE BODY OF DR. TRACY FOUND. — The body of Dr. Robert Storer Tracy, who has been missing since the night of April 1st, has just been found in the Saranac River. Dr. Tracy was a son of J. Evarts Tracy, of the law firm of Evarts, Choate and Beaman, and was twenty-seven years of age. He was a graduate of Yale University and the College of Physicians and Surgeons, New York. After serving for two years as interne at the New York Hospital he became one of the Staff of the Sloane Maternity Hospital. Early in December last he went to Dr. Trudeau's Sanitarium in the Adirondacks on account of incipient pulmonary tuberculosis.

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Miscellany.

THE FOOD SUPPLY OF OUR ARMY IN THE PHILIPPINES.

IN a report on sanitary conditions at Manila Major H. W. Cardwell, chief surgeon First Division, Eighth Army Corps, under date March 18, 1899, writes as follows:

"There is at present absolutely no fault to be found with the supply of food, and its preparation is excellent. Great ingenuity has been exercised by the various companies of this regiment (Fourteenth United States Infantry) in the erection of stone and brick ovens in the court-yard of the Cuartel, for use in bread-making and roasting; the tops of many being used as huge stoves. The issue of fresh beef, as regards its quality, is of the best. Companies which do not cook their own bread buy from those that do or from regimental bakeries, and the quality is equal to that of the best American city bakeries.

"Potatoes and onions, fresh, with the usual canned goods from the commissary and such green produce as can be obtained in the markets, supply an ample vegetable ration. The issue of rice in additional quantity by the commissary is appreciated, and, strange to say, those most liable to complain as to insufficiency of quantity are newly arrived organizations. I find that many, especially among the officers who have been here six months or more, crave and eat as much meat as they did in the United States."

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THE RATION FOR THE TROPICS.

As a result of the President's consideration of the report of the Wade Court of Inquiry, appointed to investigate the character of the food supplied to the army during the war with Spain, measures looking to a change in the United States army ration for the tropics have been instituted. The military commanders in the Philippines, Cuba and Porto Rico have been cabled to appoint, each, a board of three officers, noted for their ability and experience, serving respectively in the line, medical and subsistence departments, to determine what alterations in the established ration, if any, would be conducive to the health of troops serving in tropical climates. These boards are to fully inquire into the subject and consider all reports and other matter bearing on the subject. Particular attention is to be given to the experience of officers and enlisted men of long service in the tropics. Military commanders are directed to cable the recommendations of the boards, and to forward their full reports by mail to Washington.

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THE HISTORICAL EXHIBIT AT THE CENTENNIAL ANNIVERSARY OF THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

The historical exhibit at this anniversary, an account of which was given by our correspondent in our last issue, was especially notable for the number of portraits and relics of the founders of the faculty and distinguished physicians of the last century which had been secured. Among these may be mentioned that of Dr. Philip Thomas, 1747–1815, a founder of the Faculty from Frederick County, who was a Presidential Elector of George Washington; Dr. Henry Stevenson, 1721–1814, founder of the Faculty from Baltimore, who in 1765 converted his residence into an inoculation hospital; Dr. George Brown, 1755–1822, founder of the Baltimore Medical Society, 1789, and Professor of the Practice of Medicine in the Maryland College in 1807 (painted by Jarvis); Dr. Nathan Smith, founder of the Medical Departments of Dartmouth, Bowdoin and Yale Colleges; Dr. Dick, consultant during Washington's last illness; Dr. Amos A. Evans, 1785–1848, Surgeon of the frigate *Constitution*; Dr. William Shippen, 1712–1801, founder of Princeton College, and member of Continental Congress, 1778–1779; Dr. William Shippen, 1736–1808, who in 1761 began the first course of lectures in anatomy in America, was a founder of the Medical Department of the University of Pennsylvania in 1765, and Director-General of all the Military Hospitals of the United States from 1777–1781; Dr. Benjamin Rush; Dr. David Ramsey, member of the Continental Congress, from South Carolina, 1782, and author of the "History of the American Revolution"; and others of the leading men in medicine in Baltimore and Maryland in the last and early years of the present century.

METEOROLOGICAL RECORD

For the week ending May 13th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....7	29.98	66	82	51	58	49	54	W.	S.	12	6	C.	C.	
M...8	29.89	55	62	48	60	87	74	N.E.	N.E.	24	10	O.	O.	
T....9	29.79	55	62	48	90	51	70	N.	N.W.	12	10	O.	C.	.04
W..10	30.08	60	70	50	35	44	40	N.	S.	10	10	C.	C.	
T...11	29.87	62	72	51	33	85	59	W.	W.	13	9	F.	O.	.06
F...12	29.87	62	73	52	49	33	41	W.	W.	18	8	C.	C.	
S...13	30.00	62	70	54	44	67	56	E.	S.	6	10	F.	R.	.03
☞	29.93		70	50			56							.13

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, May 6, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup
New York . .	3,438,899	1324	428	7.63	16.31	1.47	.42	2.17
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	226	50	7.04	11.52	.44	2.20	1.32
Baltimore . .	506,389	165	36	3.66	12.81	.61	.61	—
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	97	32	12.36	14.28	6.18	3.09	1.03
Washington .	277,000	87	14	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	54	18	6.90	11.50	—	—	1.15
Nashville . .	87,754	29	16	31.05	20.70	10.35	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	108,240	26	5	38.50	19.25	—	3.85	3.85
Fall River . .	95,919	28	10	7.14	10.71	3.57	—	—
Cambridge . .	89,724	30	10	6.66	20.00	3.33	—	—
Lowell . . .	88,641	29	11	—	10.35	—	—	—
Lynn	66,703	20	3	10.00	—	—	—	—
New Bedford .	66,340	25	6	8.00	8.00	—	—	8.00
Somerville . .	61,101	16	4	—	12.50	—	—	—
Lawrence . .	57,263	28	13	10.71	10.71	3.57	—	—
Springfield . .	56,501	28	5	10.71	10.71	7.14	—	—
Holyoke . . .	43,424	12	5	—	8.33	—	—	—
Brockton . .	37,278	9	3	11.11	11.11	—	—	—
Salem. . . .	36,883	9	2	—	—	—	—	—
Malden . . .	34,613	4	1	—	—	—	—	—
Chelsea . . .	33,468	7	1	—	—	—	—	—
Haverhill . .	32,022	15	5	6.66	13.33	—	—	—
Gloucester . .	30,589	4	1	—	—	—	—	—
Newton . . .	29,716	7	2	—	14.28	—	—	—
Fitchburg . .	29,438	10	3	20.00	—	—	—	—
Taunton . . .	28,167	22	7	4.15	8.30	—	—	—
Everett . . .	25,338	13	3	—	—	—	—	—
Quincy . . .	23,549	5	2	40.00	20.00	—	—	40.00
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	4	—	—	25.00	—	—	—
North Adams .	20,971	8	2	—	37.00	—	—	—
Chicopee . .	17,842	8	5	—	—	—	—	—
Medford . . .	16,511	4	2	—	25.00	—	—	—
Newburyport .	14,915	7	1	—	14.28	—	—	—
Melrose . . .	14,032	3	1	—	66.66	—	—	—

Deaths reported 2,283; under five years of age 700; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 197, acute lung diseases 372, consumption 314, diphtheria and croup 45, diarrheal diseases 43, scarlet fever 26, cerebro-spinal meningitis 23, measles 22, typhoid fever 16, whooping-cough 11, erysipelas 9, small-pox 1.

From cerebro-spinal meningitis New York 8, Washington 4, Boston 3, Baltimore, Worcester and Lynn 2 each, Nashville and Brockton 1 each. From measles New York 14, Nashville 4, Boston, Washington, Providence and Fitchburg 1 each. From whooping-cough New York 5, Pittsburg, Providence, Nashville, Fall River, Cambridge and Lawrence 1 each. From erysipelas New York 7, Baltimore and Haverhill 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending April 29th, the death-rate was 17.7. Deaths reported 3,862; acute diseases of the respiratory organs (London) 294, whooping-cough 120, measles 114, diphtheria 61, diarrhea 32, scarlet fever 30, fever 25.

The death-rates ranged from 11.3 in Gateshead to 27.6 in Wolverhampton; Birmingham 20.6, Bradford 16.6, Cardiff 14.0, Derby 16.7, Hull 18.0, Leeds 19.8, Leicester 15.1, Liverpool 20.9, London 16.9, Manchester 23.2, Newcastle-on-Tyne 16.6, Nottingham 19.2, Portsmouth 16.1, Sheffield 18.0, Swansea 13.1, West Ham 15.5.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 13, 1899.

J. C. Rosenbleuth, passed assistant surgeon, orders assigning to "Newport" moderated; ordered to the "Vermont."

J. E. Wise, medical inspector, detached from the Asiatic Station and ordered to the Naval Hospital, Yokohama, Japan, for treatment; thence home to wait orders.

L. L. Young, passed assistant surgeon, sick leave extended two months.

F. Rogers, surgeon, detached from the "Buffalo," directed to be examined for promotion May 15th, and ordered home to wait orders.

J. C. Rosenbleuth, passed assistant surgeon, detached from the "Vermont" and ordered to the "Buffalo."

R. S. Blakeman, assistant surgeon, detached from the "Buffalo" and ordered home to wait orders.

C. M. DeValin, passed assistant surgeon, detached from the "Brooklyn" and ordered home to wait orders.

W. B. Grove, assistant surgeon, detached from the "Vicksburg" when put out of commission and ordered to the "Brooklyn."

F. M. Furlong, assistant surgeon, detached from the "Scindia" when put out of commission and ordered to the "Independence" temporarily.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING MAY 11, 1899.

Murray, R. D., surgeon. Granted leave of absence for fifteen days from June 4, 1899. May 11, 1899.

Peckham, C. T., surgeon. When relieved from duty at New Orleans, La., by Passed Assistant Surgeon J. A. **Nydegger**, to rejoin station at Pittsburg, Pa. May 8, 1899. To proceed to Neville Island, Pa., for special temporary duty. May 8, 1899.

Vaughan, G. T., passed assistant surgeon. Detailed by the Secretary of the Treasury as delegate to represent the Treasury Department at the meeting of the International Tuberculosis Congress at Berlin, Germany, May 24th to 27th inclusive. April 27, 1899.

Nydegger, J. A., passed assistant surgeon. To rejoin station at New Orleans, La. May 6, 1899.

Stewart, W. J. S., passed assistant surgeon. To proceed to Nantucket, Mass., for special temporary duty. May 10, 1899.

McMullen, John, assistant surgeon. Upon being relieved from duty as sanitary inspector on U. S. transport "Buford," to report to the medical officer of the Service at the U. S. Immigration Depot, New York, N. Y., for temporary duty. May 9, 1899.

Von Ezdorf, R. H., assistant surgeon. Detailed as inspector of quarantines. May 9, 1899.

Heiser, V. G., assistant surgeon. Detailed by direction of the President, for duty in the office of the United States Consul at Naples, Italy. May 6, 1899. Upon being relieved from duty at the Immigration Depot, New York, N. Y., to report at Washington, D. C., for instructions preliminary to departure for Naples, Italy, for duty. May 8, 1899.

Hobdy, V. C., assistant surgeon. Relieved from duty at the Reedy Island Quarantine Station and directed to proceed to Stapleton, Staten Island, N. Y., and report to medical officer in command for duty and assignment to quarters. May 10, 1899.

Corput, G. M., assistant surgeon. Granted leave of absence for seven days. May 11, 1899.

BOARD CONVENED.

Board convened to meet at Detroit, Mich., on May 20, 1899, for the physical examination of Surgeon **John Godfrey**. Detail for the Board: Surgeon H. W. **Sawtelle**, Chairman, and Passed Assistant Surgeon G. M. **Magruder**, Recorder.

MASSACHUSETTS MEDICAL SOCIETY.

One Hundred and Eighteenth Anniversary.

The annual meeting will be held at 9 o'clock A. M, Wednesday, June 14, 1899, in the building of the Massachusetts Charitable Mechanic Association, on Huntington Avenue, Boston.

Meetings of Sections will be held in the same building, on the preceding day, Tuesday, June 13th.

Section in Medicine.— Dr. C. F. Folsom, of Boston, Chairman; Dr. J. J. Minot, of Boston, Secretary. "The Clinical Importance of a Knowledge of the Size of the Heart," by Dr. F. H. Williams, of Boston. "The Diagnostic and Prognostic Value of the Pulse," by Dr. Henry Jackson, of Boston. "The Prognosis of Nephritis; A Study of Five Hundred Cases," by Dr. R. C. Cabot, of Boston. "The Rôle of the Staphylococcus in Skin Diseases," by Dr. C. J. White, of Boston.

Section in Surgery. — Dr. E. H. Bradford, of Boston, Chairman; Dr. F. G. Balch, of Boston, Secretary. "Intussusception," by Dr. J. C. Munro, of Boston. "The Completed History of a Case of Gastrectomy; Remarks upon the Surgery of Gastric Cancer," by Dr. M. H. Richardson, of Boston. "A Lantern-slide Demonstration of the Dissemination of Carcinoma," by Dr. W. T. Councilman, of Boston.

On Tuesday, June 13th, at 8 o'clock P. M., in Paul Revere Hall, The Shattuck Lecture will be delivered by Dr. James J. Putnam, of Boston. Subject: "Mental Therapeutics; from the Standpoints of the Physician and the Psychologist."

At the close of the lecture a reception will be given by the Society to the Officers of the Society, at which refreshments will be served.

Annual Meeting. — Medical papers and communications. "Improvements in Army Medical Science, suggested by Experience in the Late War," by Dr. W. H. Devine, Lieutenant-Colonel and Medical Director, Second Brigade, M. V. M., late Major and Brigade Surgeon, U. S. V. "A Report of the Blood Examinations in Typhoid Fever and in the Malarial Fevers," by Dr. J. J. Curry, Acting Assistant Surgeon, U. S. A., Pathologist to the U. S. A. General Hospital, Savannah, Ga. "A Hospital Clearing House," by Dr. C. J. Blake, of Boston. "Demonstration of Parasites in the Blood and Tissues in Malaria," by Dr. J. H. Wright, of Boston. "Methods of Conducting Volunter Aid in Foreign Territory," by Dr. E. G. Brackett, of Boston.

The Annual Discourse will be given by Dr. Edward H. Bradford, of Boston.

Annual Dinner, 1 P. M.— At the close of the Discourse the Annual Dinner will be served, and the Fellows of the Society, called in order of seniority, will march in procession to Grand Hall. Notice will be given ten minutes before the formation of the procession, and in the interval Fellows are requested to assemble in Exhibit Hall.

Francis W. Goss, M.D., *Recording Secretary*, Roxbury.

SOCIETY NOTICES.

New York State Medical Association, Fifth District Branch.—The fifteenth annual meeting of the Association will be held in Brooklyn, Tuesday, May 23, 1899.

The main work of the meeting will be a discussion on malignant disease.

E. H. Squibb, M.D., *Secretary*.

American Dermatologicl Association. — The twenty-third annual meeting of the Association will be held at the Hotel Walton, corner of Broad and Locust Streets, Philadelphia, May 30 and 31 and June 1, 1899.

John A. Fordyce, M.D., *President*, New York.
George T. Jackson, M.D., *Secretary*, New York.

The American Medico-Psychological Association.—The fifty-fifth annual meeting of the Association will be held at the Waldorf-Astoria, New York, May 23, 24, 25 and 26, 1899.

Henry M. Hurd, M.D., *President*.
C. B. Burr, M.D., *Secretary and Treasurer*.

APPOINTMENT.

Charles G. Cumston, M.D., of Boston, has been appointed an honorary member of the Surgical Society of Belgium.

RECENT DEATHS.

Francis Minot, M.D., M.M.S.S., of Boston, died in Readville, May 11, 1899, aged seventy-eight years.

William W. Godding, M.D., M.M.S.S., superintendent of the Government Hospital for the Insane at Washington, died on May 6th. Dr. Godding was sixty-eight years old, and had been actively engaged in work for the insane from the beginning of his professional career, with but one intermission of a few years. He was during his life connected with the New Hampshire State Asylum and also with the Taunton institution as its superintendent.

Sir William Roberts, M.D., whose death was recently reported, was the first professor of medicine of the Victoria University when that institution was founded in Manchester from Owens College. He was a member of the senate of the University of London and of the general medical council. He contributed largely to medical literature, especially in relation to diseases of the kidneys and the digestive organs and had a wide reputation as a physician and consultant.

BOOKS AND PAMPHLETS RECEIVED.

De la Voix Chuchotée. Paul Olivier. Paris. 1899.

Massachusetts Infant Asylum, Thirty-second Annual Report, 1899.

Appendicitis. By H. O. Walker, M.D., Detroit, Mich. Reprint. 1899.

Organothérapie ou Opothérapie. Par le Dr. C. Hillemand. Paris. 1899.

Transactions of the Massachusetts Medico-Legal Society, Volume III, No. 1, 1899.

Forty-third Annual Announcement Portland School for Medical Instruction, 1899.

Inheritance. By William Matthews Ogle, Ph.B., M.S., M.D., Delaware City, Del. Reprint. 1898.

On So-called Functional Heart Murmurs. By Maude E. Abbott, B.A., M.D., Montreal. Reprint. 1899.

The Readjustment of the Collegiate to the Professional Course. By Simeon E. Baldwin, M.A., LL.D. Reprint.

Second Annual Report of the Trustees of the Boston Insane Hospital for the Year ending January 31, 1899.

The Digestion of Amylaceous Food. By Robert W. Hastings, M.A., M.D., Brookline, Mass. Reprint. 1899.

Original Articles.

THE VALUE OF POSTURE IN THE TREATMENT OF OCCIPITO-POSTERIOR POSITIONS.[1]

BY CHARLES M. GREEN, M.D., BOSTON.

The advantage to be gained in the treatment of occipito-posterior positions by a proper application of the force of gravity by posture of the patient is not, it seems to me, as thoroughly understood and appreciated as it should be. We know, to be sure, that in a majority of these cases the head flexes and descends, that the occiput rotates to the pubic arch and is normally born. But we also know that it is in the posterior positions that operative procedures are more often necessary; that the mother suffers more exhaustion and damage to soft parts; that the fetus is more often lost, and that the physician more frequently finds his Waterloo.

At the superior strait the head does not so readily engage when the occiput is posterior; the head is more liable to become extended and present the brow or face; the brim is not so well fitted, and there is therefore a greater chance of prolapse of the funis. The reason for the comparative difficulty in the engagement of the posterior occiput is apparent from an inspection of the bony pelvis. In anterior positions the biparietal diameter of the fetal head passes readily through a pelvic diameter parallel with, and almost equal to, one of the large, oblique diameters. But in posterior positions the biparietal must pass through a much smaller diameter, the chord that subtends the right or left sacro-iliac arch. When the pelvis is ample, the child not much above average size, and the pains strong, this passage of the flexed head may readily take place; but under other circumstances not only may the occiput fail to advance, but the sinciput, encountering less resistance in the anterior quadrant of the pelvis, may descend, and a presentation of the brow result.

When the posterior occiput has passed the pelvic brim, the possibilities of difficulty or disaster are largely diminished. With the head in the pelvis, flexion can be maintained, and if the elastic resistance of the pelvic floor has not been unduly impaired, and if the pains are adequate, anterior rotation of the occiput will take place. But owing to the longer rotation required to bring the occiput to the arch, it is obvious that greater demands are made on the patient's voluntary efforts, as well as on the strength of the uterine contractions. Should these forces fail to produce rotation, resort must usually be had to manual or to instrumental assistance to effect delivery. Instrumental delivery in such cases requires much more skill than is necessary in anterior positions, and is more liable to result injuriously to the fetus and to the maternal soft parts. Obviously, therefore, it is our duty to neglect no measure that will safely promote spontaneous anterior rotation.

It is not my purpose in this paper to speak of the various expedients employed to promote normal delivery in the skilful management of labor in posterior positions of the presenting occiput, but to testify to the great value experience and observation have led me to ascribe to the force of gravity as a factor in the promotion of anterior rotation.

I shall never forget my surprise, and I may say my annoyance, in the early days of my dispensary practice, at the custom, common especially among the foreign population, of the parturient woman to kneel by her bedside. Such a posture was quite different from what I had been taught to believe the correct one; besides it made examinations difficult, to say the least. Sometimes the baby was born while the mother was in this position, and my well-meant attempts to support the perineum were quite ineffectual. It did not then occur to me that this posture had become a custom from primeval instinct, and I never knew how many difficult cases, on which I might have exercised my obstetric art, were taken from me by this uncivilized, albeit highly scientific, practice. I well remember among my early cases that of a young primipara, whose labor began at 7 A. M. At 11.30 A. M. I found the head presenting at the brim in O. D. P. position; the cervix was taken up, and the os dilated an inch and a quarter. Soon after, I went to luncheon, and on my return found the patient on her hands and knees by the bedside. My notes read that during my absence of not more than an hour dilatation was completed, the membranes had ruptured, and the occiput had descended and rotated to the pubic arch. The baby was born at 1.45 P. M., six and three-fourths hours from the initial pains, and it seemed obvious to me at the time that the anterior rotation and the rapid delivery were promoted by the kneeling posture.

One other case, among those in which I made my early observations in regard to posture, lingers in my mind, that of a secundipara who had lost her first child in difficult high forceps delivery of a posterior occiput. The second child was also in O. D. P. position, and I determined to try the effect of posture. I placed the patient in the right latero-prone position in bed, so to make the right anterior quadrant the lowest part of the pelvis, and left the room for half an hour. On my return I found the head engaged in right anterior position, and I subsequently delivered by low forceps with comparative ease, with a normal rotation to the arch.

I will now quote briefly the history of a case in which last year I was able to demonstrate to several pupils the effect of gravity in changing fetal position. I first saw the patient just prior to her third labor in 1898, and was able to obtain the records of her first two labors. Her first labor was in 1890, when she was thirty-two years old; the head presented, O. L. A. The first stage was over thirty hours in duration; but the second stage lasted less than an hour and a half, and she delivered herself of a nine-pound child without assistance. From these facts it may fairly be inferred that the pelvis was ample. In the second labor, four years later, the head presented, but in right posterior position. The pains, which began at 4 A. M., were frequent, but, as is often the case in posterior positions, were not very effective. The membranes ruptured at 3.30 P. M., when the os was about two-thirds dilated. Soon after, the os became somewhat edematous, and the fetal heart rose from 140 to 170; the head was still in O. D. P. position and not engaged. It seemed to the attending physician that it was best to deliver. The axis-traction forceps was applied, but slipped when tractions were made; after three unsuccessful applications the forceps was discarded, and delivery was effected by internal podalic version with forceps to the after-coming head. The child was stillborn, and weighed eight pounds and three ounces, thirteen ounces less than the first child, which was born naturally from an O. L. A. position.

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[1] Read before the Boston Society for Medical Improvement, February 20, 1899.

When this patient was at full term with her third child, in 1898, the membranes ruptured one morning at six o'clock; I saw her a few hours later. Labor had not begun. Pelvimetry showed the pelvis to be of normal size, and the head presented in right posterior position. With a view to effecting anterior rotation of the fetus on its long axis, I advised the patient to assume a kneeling posture by her bedside, making herself comfortable with pillows beneath her knees, and leaning forward, resting her head and arms upon the bed. She maintained this posture a good part of the day. The following morning I saw her again, and was able to demonstrate to my own satisfaction and to that of several students that the fetus had rotated anteriorly and was then in O. D. A. position. The patient was allowed to sit up, but was advised to resume the kneeling posture from time to time. Labor began the next day; the first stage lasted three and one-half hours, and the patient delivered herself in a second stage of seven minutes. The child weighed ten pounds, one pound more than the first child, and one pound and thirteen ounces more than the second child, which was lost in operative delivery from a high posterior position.

The theory on which gravity effects anterior rotation of the fetus is sufficiently simple. The position of the spinal column makes the dorsal side of the fetus the heavier; and when the patient's posture is such as to make the anterior uterine wall the lower, the natural tendency, under the laws of gravitation, is for the fetus to rotate on its long axis to enable the dorsum to seek the most dependent portion of the uterus. The ease with which this anterior rotation will occur depends very largely, of course, upon the mobility of the fetus. If the fetal head is not engaged, and if the membranes are unruptured, anterior rotation will almost invariably take place. That unruptured membranes are not essential to this rotation is shown by the third labor in the case just quoted. If the head is fully engaged, rotation cannot, of course, occur until the head has passed the superior strait. But if the head is simply resting upon the girdle of contact, embedded, so to speak, in soft parts merely, a knee-chest or a knee-elbow position will make the fundus the lowest portion of the uterus, and the fetal head will drop away from its bed, unless a long-dry and retracted uterus is holding the fetus immovable.

When the head is in the pelvic cavity the influence of gravity in producing anterior rotation is not so striking. Yet, unquestionably, with the patient in a latero-prone posture on the side towards which the occiput is directed, gravity will generally effect rotation in cases wherein, if the patient lies upon her back, it will not occur at all without manual or instrumental assistance. Oftentimes, even when the head is well flexed and the soft parts elastic, the pains are not quite adequate to accomplish anterior rotation against gravity, as it must be when the patient is on her back or on the side opposite to that towards which the occiput points. A single pain will start anterior rotation; but on its cessation the head will often return to its former position, and the patient thus passes a weary and exhausting time in labor as fruitless as that of Sisyphus. In such cases the effect of gravity, when the patient is so placed as to take advantage of it, is often most satisfactory. Especially is the effect of gravity most happy when a suitable latero-prone posture is adopted as soon as the head has passed the superior strait. The shoulders are then as yet not engaged in the brim and may rotate under gravity to the opposite oblique pelvic diameter. This rotation of the shoulders and trunk makes the anterior rotation of the occiput much easier than when the head is quite low and the shoulders are already engaged with the dorsum posterior.

Of course in some cases of posterior positions, when the head is in the cavity, anterior rotation fails in spite of gravity. At most gravity is only an adjuvant force, and cannot be expected to afford effectual aid if the pains are weak, and if the head is not well flexed; good flexion is an essential requisite to normal anterior rotation. But even if gravity is ineffectual, for whatever reason, the postures necessary to the efficient working of that force certainly do no harm and are not causes of discomfort to the patient. The knee-chest and the knee-elbow postures cannot be long maintained with comfort; but I rarely find it necessary to use these positions, and if at all, for only a short time, when the head must be dislodged from a partial engagement at the brim. The kneeling posture, with the body bent forward and with the head and arms resting comfortably on a bed or chair, is surely no hardship; and we know that parturient women have, of their own volition and apparently from a sort of instinct, often assumed that position, especially during the first stage. As to the latero-prone posture — that is the commonest position in second stage labor, and is equally comfortable on either side.

I have rarely advised a patient in the last days of pregnancy to assume a particular posture in the daytime, with a view to converting posterior to anterior positions; but I have often suggested sleeping in the latero-prone position on the side towards which the occiput has been ascertained to be directed. In multiparous labors, in which the head is almost always high, I use the kneeling, forward-bending posture early in the first stage, varied with the appropriate latero-prone position, until the head is engaged anteriorly. In primiparæ, if there is no relative disproportion between pelvis and fetal head, the latter is engaged, or even well down in the cavity, at the advent of labor; in these cases I customarily employ no especial posture until the second stage, when I keep the patient in the appropriate latero-prone position until anterior rotation is accomplished; or, if the pains are ineffectual, until such time as I find it expedient to employ some manual assistance to rotation, which can be most conveniently afforded with the patient in dorsal position. Even in these cases, however, during the first stage, when the patient is preferably sitting up or walking about the room, I often find the kneeling posture to be gratefully assumed from time to time.

It will not be inferred, I trust, that I deliver patients in the kneeling posture, as perforce I sometimes did in dispensary days. As soon as anterior rotation is accomplished the patient is advised to assume such position in bed as she finds most comfortable, until the time of delivery is at hand, when the left lateral posture is most convenient for the conclusion of the labor.

REPORT OF A CASE OF PERFORATION IN TYPHOID FEVER CLOSED BY AN ADHERENT TAG OF OMENTUM, FOLLOWED BY A RELAPSE, SECOND PERFORATION AND DEATH.[1]

BY D. J. MILTON MILLER, M.D., PHILADELPHIA, PA.

Maggie M., eleven years old, was admitted to hospital on February 7, 1899, the eighth day of typhoid fever. The disease ran rather a severe course, with high temperatures (104°), moderate tympany and diarrhea (four or five stools daily), and, on the twenty-third day, four hemorrhages from the bowels, the patient losing, during twenty-four hours, about as many ounces of blood. These were accompanied by increased tympany, complaint, on the patient's part, of abdominal pain, general tenderness on deep pressure and slight rigidity of the recti muscles. These symptoms soon abated, but not entirely, continuing in a lessened degree until the morning of the twenty-sixth day (three days after the hemorrhage), when the patient complained much of abdominal pain, which, she said, had become worse again during the night. The abdomen was moderately distended and slightly rigid; there was considerable pain, not localized, on deep pressure; there was no alteration in liver dulness; vomiting had not occurred, nor collapse, although the skin was cool and the expression anxious. The temperature (10 A. M.) was 99$\frac{2}{5}$°; pulse, 102; respiration, 36, following a plunge given at 7 A. M., when the temperature was 103$\frac{1}{5}$°, a fall of 3$\frac{4}{5}$° in three hours. But as depressions of temperature of almost equal extent frequently follow plunges, its significance was not appreciated. Dr. G. G. Davis saw the case with me at 1 P. M., when the temperature had risen to 101$\frac{2}{5}$°, pulse, 126, respiration, 36. Dr. Davis did not think the condition serious, or the symptoms definite, enough to warrant operation. The next day (February 25th, twenty-seventh day of disease) the tympany was quite marked. The lower border of liver dulness was 1$\frac{1}{2}$ inches above the costal border, right nipple line. The complaint of pain was continuous and insistent, and there was great abdominal tenderness on the slightest pressure, general in distribution, but greatest about the umbilicus; there was considerable muscular rigidity. No movable dulness could be detected, and there had been no vomiting. Temperature, 102$\frac{4}{5}$°, pulse, 140, respiration, 32. Dr. Davis again saw the patient, and it was decided to operate should the condition not speedily improve. The following morning the child was in every way better. The temperature was 99$\frac{3}{5}$°, pulse, 95; the distention and tenderness were much diminished, and there was no pain. After this the patient rapidly improved, the temperature falling almost to normal, and the child evidently entering upon a favorable convalescence. On the thirty-fifth day, however, what proved to be a genuine relapse began, as shown by gradual temperature rise, fresh rose spots and re-enlargement of the spleen. This second attack was more severe than the first. The temperature was constantly above 104°, and on the sixth day (thirty-ninth day of disease) seven ounces of blood were lost by intestinal hemorrhage. Seven days later (forty-sixth of illness, thirteenth of relapse) abdominal pain was again complained of, dull in character and continuous. At 1 P. M. the temperature was 103$\frac{2}{5}$°, pulse, 128, respiration, 26. There had been no marked fall, although at 1 A. M. the temperature had sunk to 101$\frac{1}{5}$° from 103$\frac{4}{5}$° at 1 A. M., a fall of 2$\frac{3}{5}$°, but as similar depressions had been frequent during the attack, and as it had followed a sponge, no significance was attached to it. The next day the tympany had somewhat increased, but the liver dulness was unchanged. Tenderness on pressure was very marked, the most tender point being on the left side, just below and close to the umbilicus. Decided muscular rigidity was present. Shifting dulness could not be elicited. Vomiting had occurred once, an hour before my visit (1 P. M.). Temperature, 103°, pulse, 134, respiration, 56. There had been no fall. Dr. Davis again saw the case, and while not positive that a perforation existed, considered that such an accident was imminent. At 4 P. M. (three hours later) the temperature fell to 99$\frac{4}{5}$° (from 103° at 1 P. M.), but rose rapidly to 103$\frac{3}{5}$° at 7 P. M. Symptoms of perforative peritonitis — collapse, vomiting, great tympany and rigidity rapidly developed, death occurring the next day at 1 P. M.

Abstract of the autopsy, by Dr. W. E. Robertson[2]: Considerable gas and fluid were found in the abdominal cavity. There was much lymph and many recent adhesions. The great omentum was rolled up and displaced to the right side of the abdomen, except one strand, which had formed an attachment to the ileum at a point six inches from the ileo-cecal valve, serving to close an aperture, very small and slit-like, in an ulcerated Peyer's patch, which had evidently perforated some time before. Another perforation was found twelve inches from the cecum, about one-eighth inch in diameter; its edges were sharply defined, and it allowed a free escape of the intestinal contents. The mesenteric glands were enlarged. The appendix was normal. There were a few other ulcers in the colon. The spleen weighed seven and one-half ounces; liver forty-two ounces. There were no erosions in the gall-bladder. The other lesions were those usually found after death from typhoid fever.

This interesting history illustrates how a perforating typhoid ulcer may undergo healing with complete cessation of symptoms, and doubtless many cases presenting symptoms of perforation, which have resulted in recovery without operation, have been of this nature. A similar case is reported by Buhl,[3] where, at the autopsy of a patient dying from hemorrhage on the twenty-third day after symptoms of perforation, a piece of the omentum was found adherent to, and completely closing, the opening. Or the same end may be attained by the formation of a local abscess, as in a case reported by the same author, an abscess formed at the site of perforation, and caused death by rupture at the expiration of five weeks. Adhesions may also form and close the ulcer, thus preventing extravasation into the general peritoneal cavity. Such a condition was found at operation in a patient of J. Bion Bogart's,[4] a man aged thirty, who developed during a second attack of fever symptoms of perforation. At the operation the appendix was found adherent to the ileum, four inches from the cecum. On separating the appendix from the gut a minute perforation was exposed. The perforation was completely closed by the adhesion and surrounding inflammatory exudation. The patient recovered from the operation, but died later from obstruction at the hepatic flexure from an old adhesion. This case of Bogart's, as well as others in the literature, shows how successful operative interference is if undertaken early, before general peritonitis has occurred, especially in those instances where adhesions (or local abscesses) have formed, or where symptoms arise indicating that a perforation is about to take place. That such a condition sometimes exists cannot be doubted.

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[1] Read before the Philadelphia County Medical Society, April 26, 1899.

[2] Specimens exhibited at the meeting.

[3] Zeitschrift für rationelle Med., 1857, N. F., viii, S. 12.

[4] Annals of Surgery, 1896, vol. i, p. 596.

Harvey W. Cushing,[5] whose valuable paper first directed my attention to this matter, and whose conclusions are liberally made use of in these remarks, has emphasized the frequent presence of what he terms a "pre-perforative stage of ulceration." This condition he describes as "a localized inflammation of the serosa leading to a slight adhesive peritonitis, due to the near approach of an ulcer to the general peritoneal surface." The symptoms of this stage, as I have observed them, are gradual, rather than sudden, onset of pain, continuous in character, *which is complained of by the patient himself,* associated with more or less general or localized abdominal tenderness on palpation, with often, but not always, slight muscular rigidity. In addition. Cushing states that there may be a moderate leucocytosis. Vomiting is usually absent, as well as any marked change in temperature, and, if a change occurs, a rise is as often observed as a fall.

In my case there was almost continuous complaint of abdominal pain, with tenderness on deep pressure, and variable but slight muscular rigidity for three days preceding the first perforation, which occurred, probably, with the marked fall of temperature on the morning of the twenty-sixth day. At the second perforation, similar symptoms foreran by one and one-half days the decided fall in temperature, collapse and other symptoms of general septic peritonitis.

In another case under my care this winter, a boy of fourteen, an extremely nervous lad, there was constant complaint of abdominal pain, moderate tympany, tenderness on pressure and, at times, muscular rigidity, but no vomiting or change in temperature, for three days before signs of extravasation into the general peritoneal cavity occurred. In a third patient, also a boy, of about fifteen years, rigidity, tenderness and complaint of pain in the epigastric region, without vomiting, and with higher temperature, continued for a week before general peritonitis developed. This case was taken home before death, but, from the description given, general peritonitis probably determined the fatal issue.

If there is a definite recognizable stage, characterized by symptoms, sometimes present before actual perforation occurs, it is evident that operative measures undertaken during such a stage would be attended by a much greater measure of success than is usually seen after surgical interference in typhoid perforations. And even where operation is not performed, the recognition of this condition would, at least, put us upon the alert: by enjoining greater quiet, the cessation of baths, and constant watchfulness for the occurrence of more pronounced symptoms. My own experience leads me to believe that, had I appreciated the significance of these symptoms in some of my cases, perforation might not have occurred. Of course, "the earlier operations are performed the more will mistakes in diagnosis be seen."[6] Dr. Davis and myself were guilty of this error in one of our cases: A man, age forty, in the fifth week of typhoid fever, was seized with sudden, sharp pain in the umbilical region after getting out of the bath. When seen by us seven hours later there was very great tenderness on pressure, particularly over the transverse colon and in the epigastrium, complaint of pain by the patient, sufficient to require a small dose of morphine, rigidity, and slight movable dulness in the right flank, moderate distention, a fall of temperature of 2°, with a pulse of 140, but no vomiting. An exploratory incision was decided upon. At the operation *no perforation was discovered.* The appendix was normal, and the portion of the ileum exposed, about three feet, revealed only intense congestion of the serosa and many thickened Peyer's patches; there was no peritonitis or adhesions. A small amount of serous fluid was present. The gall-bladder was not examined. The peritoneum was flushed with saline solution and the wound closed. The patient made an excellent recovery, and seemed rather benefited than otherwise by the operation. Cushing[7] reports a somewhat similar case in a girl of fifteen, and C. J. Symonds[8] operated on a case where the history and mode of onset indicated a perforating gastric ulcer, but found nothing abnormal. Both patients made uneventful recoveries. Cushing and Symonds regarded their cases as hysterical. In mine we were inclined to believe that either a pin-hole perforation had been overlooked, or that the symptoms were due to a temporary obstruction of some sort, a twist of the gut, for instance, that relieved itself before or at the time of operation. The operation, evidently, if skilfully performed, is almost devoid of danger. In advising operation, however, the surgical means at hand should always be considered by the medical attendant, for, as Symonds[9] well says: "Success can only be obtained in the hands of an operator whose training makes an error in technique almost impossible."

The diagnosis of intestinal perforation in typhoid fever is at times one of the most difficult problems that is presented to the physician for solution. At the same time, early operation, before collapse symptoms have developed, affords, in the majority of instances, the only chance the patient has of recovery. And if painstaking and thorough study of our cases will show that the actual perforation is sometimes preceded by well-defined symptoms — and the cases reported in this paper would seem to corroborate the observations of Cushing in this respect — their early recognition will undoubtedly be the means of saving some lives that are now lost by waiting for the signs of perforation as usually given in the text-books.

Clinical Department.

COMPOUND FRACTURE OF THE SKULL, WITH ESCAPE OF BRAIN MATTER.[1]

REPORTED BY HENRY DU R. PHELAN, M.D.,
Acting Assistant Surgeon, U. S. A., Battery G, Sixth United States Artillery.

Private H. S., age 22, Light Battery G, Sixth Artillery, while on guard on board a water boat alongside the United States transport *Newport*, in the Bay of Iloilo, Philippine Islands, during the evening of

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[5] Johns Hopkins Hospital Bulletin, 1898, vol. ix, No. 82, p. 257.

[6] C. J. Symonds, M.S.: British Medical Journal, March 4, 1899, p. 519.

[1] Published by authority of the Surgeon-General.

[7] Cushing: Johns Hopkins Hospital Bulletin, 1898, vol. ix, No. 82, p. 257.

[8] Symonds: British Medical Journal, March 4, 1899, p. 519.

[9] Symonds: loc. cit.

January 4, 1899, was struck upon the head by a Filipino armed with some sharp instrument.

Upon examination I found an incised wound of the skull on the top of the vault, about three-fourths of an inch posterior to the bregma, and two and one-half inches in length, transverse to the long axis of the head. The front portion of the bone was depressed, and both parietal bones fractured down to the squamo-parietal suture, and possibly the temporal bones were fractured as well, as both halves of the skull could be moved independently. A small fragment of the outer table of the right parietal bone was found to be detached at about the level of the superior curved line and was removed. Through the aperture at the vertex the lacerated dura mater and the exposed brain matter were protruding.

Although conscious from the time the injury was received, the patient was suffering from shock, from paralysis of the right leg and foot, and from a slight loss of power in the right arm, the latter, however, being but temporary.

Three hours after the occurrence of the accident the man recovered sufficiently to allow an operation to be performed. Major E. R. Morris, brigade surgeon, operated, with the assistance of Dr. Henry du R. Phelan, surgeon of Light Battery G, Sixth Artillery, and Dr. Charles A. Dukes, surgeon of the steamship *Newport*, who administered the anesthetic. The left parietal bone was trephined at a point two inches from the middle line of the skull, and the opening enlarged by means of a rongeur. The depressed bone was elevated, the lacerated meninges trimmed off and the protruding brain matter replaced. No clot was found. Curiously enough the superior longitudinal sinus escaped injury, although the wound crossed the middle line of the skull. The pericranium and scalp were brought together by means of catgut sutures and drainage provided for. The patient revived readily after the operation, and the recovery was uneventful, the wound healing by first intention. On the following day the rectal temperature rose to 101.5°, and during the rest of the week it varied from 99° to 99.5°. From the ninth to the fifteenth day the temperature was taken by the mouth, and ranged from 98.5° in the morning to 99° in the evening. Since then no record was taken till the 9th of February, when the buccal temperature was found to be normal. On the day following the operation the pulse varied from 120 to 100; on the two succeeding days it remained at 80, and for the following two weeks it varied from 70 to 52, the mean morning pulse being 59. At the present time it is normal. The respiration has been unaffected. On the night of the operation the man complained of pain in his right leg only, but this was probably a result of his fall. Subsequently he made no complaint of pain, either in his head or elsewhere. His appetite and spirits have always been excellent. On the ninth day he was allowed to sit up in bed, and on the tenth he was taken out of doors on a chair and remained up for an hour, when he complained of dizziness. This disappeared upon his return to bed. On the thirteenth day he was again allowed up, and was then able to walk with the assistance of his nurse. On the fifteenth day the dressings were removed permanently, and the wound was found to have healed by first intention.

At the present time the paralytic symptoms of the right leg and foot show no change from what they were one week after the accident. The motions of flexion, extension and outward and inward rotation of the foot are weak and limited. There is a loss of sensation over the entire leg and foot, with the exception of small areas of paresthesia located one on the mid-dorsal region of the foot, two on the middle of the plantar region, and one at the tip and ball of the great toe on the inner half. On the thigh the area of anesthesia is confined to the front and internal surfaces. The flexors of the thigh are weak, as well as the internal rotators, allowing the limb to rotate out when flexed.

If when standing erect, with the ankles together, the man closes his eyes, he falls over to the right side. Should he bear his weight upon the right limb the knee flexes either forward or backward, causing a loss of support on that side. Without the aid of vision he is unable to appreciate the sensation of contact of his foot with the floor in standing, excepting a slight pressure at the hip.

The senses of pressure, touch and temperature are wanting in the entire limb, except at the points already mentioned. There is exaggerated patellar reflex on both sides, and ankle-clonus on the right side. There is some vasomotor disturbance, causing a lowering of the cutaneous temperature of the right leg and foot. There is no atrophy as yet. The mind is clear, but there are occasional attacks of vertigo and headache. The man was in a splendid physical condition at the time of the accident.

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A CASE OF TYPHOIDAL CHOLECYSTITIS ASSOCIATED WITH GALL-STONES; OPERATION; RECOVERY.[1]

BY S. J. MIXTER, M.D., BOSTON.

It has long been known that infection of the gall-bladder was apt to occur in a considerable proportion of cases of typhoid fever, but it is only since the discovery of the typhoid bacillus that the subject has been thoroughly investigated.

Flexner found that in 50 per cent. of the fatal cases the gall-bladder was infected.

Cushing[2] has so thoroughly discussed the relation between such infection and the presence of gall-stones that it is only necessary to refer to some of his most important conclusions and to add another carefully observed case. At the time his paper was written he was able to collect but six cases.

A very interesting and important point in the matter is the possibility that the typhoid infection may perhaps lead to the formation of gall-stones in a gall-bladder previously free from them, the clusters of micro-organisms acting as nuclei. It is also probable that in certain cases the stones present might give no trouble were it not for the irritation produced by the infection.

In the same number of the *Bulletin* Miller reports a case where the bacillus was found in an active state seven years after the attack of typhoid.

The case which I have to report is as follows:

Mrs. H. H., age sixty years, was admitted to the medical wards of the Massachusetts General Hospital March 30, 1898. Thinks she has had "heart trouble" for twenty years. For the past seven years has had

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[1] Read before the Boston Society for Medical Improvement, February 20, 1899.

[2] Bulletin of the Johns Hopkins Hospital, vol. ix, No. 86.

"dyspepsia" and occasionally vomiting of food. Has never been jaundiced; has lately been nursing her husband, who has typhoid; has had pain in head, back and legs for nine days. The entrance temperature was 105°, pulse 120; Widal reaction positive and marked.

From this date the disease ran the usual course, the temperature reaching normal on April 18th. On May 1st had an abscess of the thigh which was opened and had healed in a few days.

On May 27th had severe pain in epigastrium and vomiting, and on the next day was deeply jaundiced. The temperature rose to 101°–102°, and on June 6th, as the symptoms continued severe, she was transferred to the surgical service and the abdomen was opened.

The gall-bladder was of moderate size, and on being opened was found filled with turbid bile and about thirty gall-stones. After the gall-bladder had been emptied two stones were found in the common duct which were removed by incision. The duct was not sutured. A glass tube was tied into the gall-bladder, which was packed about with gauze, which was also packed down to the incision in the duct.

During the operation considerable bile escaped into the abdominal cavity in spite of walling-off gauze. The abdomen was carefully washed and wiped out and the external incision partly closed.

The recovery was uneventful, the wound wholly closed and the patient discharged well July 19th.

Cultures from the gall-bladder at the time of operation gave a pure culture of typhoid bacillus.

Medical Progress.

RECENT PROGRESS IN THORACIC DISEASE.

BY GEORGE G. SEARS, M.D., AND JOHN W. BARTOL, M.D., BOSTON.

DIAPHRAGMATIC PLEURISY.

Zuelzer[1] calls attention to the slight notice that has been given in text-books and systems to the diagnosis of this affection occurring as an encapsulated empyema. Having seen two cases himself and studied the reported cases, he concludes that the one pathognomonic symptom is the presence of the "bouton diaphragmatique," or de Massy's point. This is a spot of extreme sensitiveness to pressure, situated at the intersection of lines drawn in prolongation of the tenth rib, and the left parasternal line. Other symptoms of less specific significance are: the presence of pleuritic pain, which is sharper and more widely distributed than in ordinary pleurisy, sensitiveness to palpation in the entire circumference of thorax at level of insertion of diaphragm, and also in the neck at the point where the phrenic nerve crosses the scalenus anticus, and at times pain radiating in the course of the intercostal nerves. Percussion over the base of the lung gives for perhaps a finger's breadth tympanitic resonance — auscultation is practically negative; in addition, ordinary signs of suppurative inflammation may or may not be prominent. Exploratory aspiration when negative is not conclusive, on account of the difficulty of reaching the location of the pus.

The cause of the sensitive points he is inclined to ascribe to pressure on the phrenic nerve, but does not commit himself thereto.

TYPHOID PLEURISY.

Achard[2] says that many cases of pleurisy which occur in typhoid patients are undoubtedly due to an accidental secondary infection, but others, which are perhaps the more numerous and are certainly the more interesting, are the result of a local action of Eberth's bacillus. The pleura, as has been shown by a case of Fernet, may even appear to have been the initial seat of the infection, the typical typhoidal symptoms not appearing till later. Such cases are comparable to those of typhoid-pneumonia in which the first clinical manifestation is shown in the lungs. In two such cases, one reported by Bruhl and the other by himself, the bacillus of Eberth was demonstrated during life in the hepatized area. More frequently pleurisy appears as a later complication, and two such cases are reported by the author which show that the typhoid germ is capable of producing a sero-fibrinous, a hemorrhagic or a purulent effusion. The first was a man twenty-six years old, with undoubted typhoid symptoms, who at the end of about a week developed a slight effusion at the left base. An exploratory aspiration showed the presence of a slightly turbid fluid, which, microscopically, contained red globules and a considerable number of leucocytes. During the following eight days he was aspirated twice more, the fluid showing the same characteristics except that it had become somewhat sanguinolent. About four weeks later a fourth puncture was made and the effusion found to be clearer, with but few formed elements. It was also sterile, while that withdrawn in the first three instances gave a pure culture of Eberth's bacillus. An injection of twenty cubic centimetres of the exudate into a guinea-pig failed to produce tuberculosis, thus ruling out all other causes for the pleural inflammation.

The second case was a girl of twenty, who had already been ill three weeks before she came under observation. She developed a pleural effusion in the left base which on the first aspiration was found to be very bloody. A second puncture withdrew a cloudy, chocolate-colored liquid containing many pus cells and a few bacilli, which in culture proved to be exclusively those of Eberth. On a third attempt greenish pus was obtained. Later the pleural cavity was drained and complete recovery followed. Observations like the latter are still quite rare, and it is impossible to say whether an empyema of typhoid origin has a distinctive character; but it is to be noted that the process was much less acute than in most cases due to the streptococcus or pneumococcus, a characteristic which is shown by other suppurative processes of similar origin, notably in the one which has been most studied, osteomyelitis.

Certain peculiarities of the pleural exudate in the first case deserve mention; since, contrary to what is generally expected, the blood serum in the early part of the disease had an agglutinative power of only one in ten, while in the pleural fluid it was one in a hundred. The latter also possessed marked bactericidal power, although containing the specific bacillus in a state capable of cultivation, yet the cultures were obtained with difficulty and grew only on special media.

A CASE OF CHRONIC FIBRINOUS BRONCHITIS.

Harbel[3] reports a case of this disease which is noteworthy in being secondary to mitral trouble, since only a few have been recorded, but so similar in its details to an essential fibrinous bronchitis that it is scarcely possible to make a distinction. He gives the results of a chemical examination of the bronchial casts, together with those of a similar examination in two other cases. In none of them was more than a trace of fibrin to be found, while the reactions for mucin were characteristic. An easy explanation of their formation is found in the fact that the casts had an acid reaction, as it is well known that mucin coagulates in acid solutions. One can therefore assume with great probability that any cause leading to the production of an acid secretion in the bronchi, of which the most probable is the action of bacteria, would lead to its coagulation. If this explanation is correct, a so-called fibrinous bronchitis would result from any catarrh of the respiratory passages in which the secretion becomes acid. But what the circumstances are has not yet been determined.

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[1] Münch. med. Woch., November, 1898.

[2] Sem. Méd., October 19, 1898.

[3] Centrblt. f. in. Med., 1898, No. 1.

CHRONIC HYPERTROPHIC PULMONARY OSTEOARTHROPATHY.

Massalongo[4] has published a typical case of this disease of which MacKenzie[5] gives a full abstract.

The patient was a man fifty-two years old, of robust constitution, who was not addicted to alcohol and had not had syphilis. The hands and feet were deformed and of enormous size, while in addition the bones of the forearms and of the legs appeared to be enlarged, and the knee and shoulder joints were painful on active and passive motion. The increase in the size of hands and feet had attracted the patient's attention before he had noticed any signs of mischief in the chest.

He died two and one-half months after his entrance to the hospital. In the left lung there was diffuse catarrhal bronchitis, fibrosis and bronchiectasis, and the pleura was much thickened. The other lung was highly emphysematous.

From a review of sixty-seven recorded cases Massalongo concluded that there is no reason for considering this disease as a distinct pathological entity. It may present itself independently of any affection of the respiratory organs. Marie's view that it results from the absorption of putrid and toxic substances produced in morbid foci in the lungs or pleura is not admissible, since the articular changes may occur without any pre-existing pulmonary trouble, and in the greater number of observed cases in which the two were associated they preceded the pulmonary lesions. Furthermore, analogous conditions with production of putrid and toxic substances in other organs are not associated with similar joint changes, nor does it result from disturbances of the peripheral circulation, because in most cases there is no such disturbance, and conversely in most cases of disturbance of the circulation there is no osteoarthropathy. The relation between pleuro-pulmonary lesions and the joint affection is purely accidental. The condition should be called secondary, and not pulmonary, hypertrophic osteoarthropathy.

The frequent history of antecedent rheumatic affections of the joints and the common alteration of the larger joints and character of the pains rationally lead one to admit the influence of the arthritic diathesis in these cases, but syphilis and other humoral dyscrasiæ must also be included among the predisposing causes.

CASES OF PHTHISIS WITH PECULIAR CARDIAC PHYSICAL SIGNS.

Under the above heading Ewart contributes a note to *Lancet*, February 11, 1899, commenting on cases of his own, and others previously reported by two observers where an evident considerable displacement of the heart to the right as a result of fibroid excavations of the right lung was not substantiated at autopsy. He suggests that these findings may have been only in appearance contradictory, and that a conclusion is unjustifiable that "we must not assume that when the heart's impulse is seen and felt far on to the right side of the chest the organ is necessarily dragged or pushed over or altered in size." He holds that with the left lung and heart unbound by adhesions the effect of contractions in right lung due to excavations may be not to cause a falling in of the thorax on that side but to produce an "encroachment of the heart and of the left lung into the right chest." If autopsy fails to bear out physical signs, he suggests that it is because, with the opening of the thorax, the heart drops backward and to the left by its own weight and on account of the subsidence of the overstretched left lung.

He concludes that, "Taking the view that these were instances of mobile hearts held in the right chest by atmospheric pressure owing to extensive destruction of the right lung without compensating collapse of the chest wall, it may perhaps, be suggested to clinicians that skiagraphy might place their diagnosis of displacements of the heart beyond any chance of scepticism, and to pathologists that they might in investigating cases of this kind modify their method of section in some suitable manner likely to afford a view of the heart before there had been any possibility of its relations having been disturbed."

POINTS ON PHTHISIS.

Bowditch[6] calls attention to the importance of being on one's guard against the impression that definite physical signs are necessary for diagnosis. He regards as most suggestive and often of grave import for prognosis the occurrrence of (*a*) weak rapid pulse, (*b*) more or less elevated temperature, (*c*) disordered or weak digestion. He reiterates his earnest protest against the brutal isolation of tubercular patients, which often comes at the hands of the laity as a result of the over-zeal of the profession in promulgating the possible dangers of association; and notes in particular the exaggerated importance that has been given to Flügge's statement regarding the possibility or probability of bacilli being carried in small droplets of mouth-fluid into the air during the act of coughing.

Meissen[7] puts great weight in the early diagnosis of phthisis on a very thorough investigation of the history, both family and personal, in great detail. As suggestive points before appearance of physical signs he notes: Easy fatigue and weakness, irritable or depressed temperament, failure of appetite and gastric catarrh, pain in the side (stitch), and shortness of breath. He calls attention to the danger of drawing prognostic conclusions from the number of bacilli on the basis of Gaffky's tables, or of assuming that there is no tuberculosis because repeated examinations of sputum are negative.

Tuberculin is a dangerous and not conclusive aid to diagnosis; it may stimulate latent foci: some conditions of tuberculosis do not react: other non-tubercular conditions may react. X-rays do not promise so much for the early diagnosis as was at first hoped.

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[4] Il Policlinico, vol. iv, 1897.

[5] Practitioner, October, 1898.

[6] Transactions Climatological Association, 1898.

[7] Therapeutische Monatsh., Nov., 1898.

Loomis[8] at the close of a short paper draws the following conclusions: (1) it is possible in many cases, especially in chloro-anemias, to diagnose phthisis previous to the appearance of physical signs or of bacilli in the sputum; (2) weight, respiratory capacity and test measurements have no value in establishing the possibilities of the development of phthisis in themselves, but must be considered in relation to the height of the person, when they furnish three important aids to diagnosis; (3) corpulence is obtained by dividing the weight in pounds by the height in feet, and in a normal man should equal 26, in a woman, 23; (4) thoracic perimeter is found by taking two measurements of the chest, one at the end of forced inspiration the other at the end of forced expiration — the average of these two measurements should never be less than one-half the height; (5) vital capacity is the amount of air in cubic inches that can be exhaled after a full inspiration. Normally it should bear the relation to the height of 3 to 1 for a man, and 2 to 1 for a woman — that is, for every inch of height there should be three inches of vital capacity; (6) chloro-anemia and persistent and unexplained disturbances of the digestive system are symptoms of the pretuberculous stage of phthisis; (7) there are two characteristics of the pulse found in the pretuberculous and early stages of phthisis: (*a*) change of position has practically no influence on its rhythm; (*b*) there is relative feebleness of arterial pressure.

SERO-THERAPY IN TUBERCULOSIS.

Stubbert[9] gives a brief but fairly satisfactory review of the history and present standing of this method of treatment, with a short account of his personal experience at the Loomis Sanitarium. He notes the fact that the trend of opinion is away from the sera, like tuberculin and antiphthisin, which are composed of the toxins and exert their forces when injected against the bacilli; and is turning to the so-called *antitubercle* sera like Maragliano's, which are antitoxic and lead to a greater or less power of resistance or immunity.

He is led to hope that antistreptococcic serum is going to prove of assistance in combating the cases of mixed infection which form so large a proportion of the total; and as a result of the observation of eighty-two cases he reaches the conservative conclusions: that there would seem to be established a certain immunity in subjects treated with serum and remaining cured at the expiration of periods varying from six months to a year and a half; that present investigations are along the right line; that serum treatment is more satisfactory than treatment by any one drug, but that there is as yet no specific.

Of the eighty-two cases, the physical signs improved in 78 per cent., bacilli disappeared in 16 per cent., apparent immunity was established in 21 per cent.

THE INHERITANCE OF TUBERCULOSIS.

Hauser[10] gives an elaborate study on the transmission of tuberculosis from one generation to another. The arguments in favor of its occurrence are: the anology of other diseases like syphilis and the pébrine disease of silkworms; the localization of lesions in parts not susceptible to external infection; the microscopical and experimental demonstration of tubercle bacilli in the sexual glands; the discovery of tuberculosis in the fetus of man and animals; direct experimental demonstration, and the development of tuberculosis in chickens after inoculation of the egg.

He subjects all these arguments to very sharp criticism, throwing out the last altogether, since the albumin only is infected, and it is not a true embryonal inoculation. He gives a series of elaborate and apparently exhaustive tables, the *first* showing all the cases of tuberculosis occurring in new-born children and in the human fetus; *second*, similar conditions in cattle; *third*, the discovery of tubercle bacilli in the testicles and semen of men; *fourth*, their discovery in the corresponding organs of animals; *fifth*, the discovery of tubercle bacilli in the ovary, and *sixth* and *seventh*, the results of experimental investigation.

The observations of tubercle bacilli in new-born children are not all indubitable; indeed he is only able to discover 18 certain cases, 9 of developed tuberculosis in the new-born, 5 in which bacilli were found in the fetal organs and 4 in which they were found in the placenta. In all these cases the mother only was diseased, in 6 she suffered from general miliary tuberculosis and in only 2 did she survive the birth of the child. He therefore concludes that tuberculosis is capable of transmission in both men and animals, but no satisfactory evidence is presented of its transmission from the father. In nearly all cases the mother has been very severely infected, but even in cases of general miliary tuberculosis only about 10 per cent. of the children are tuberculous.

The transmission of bacilli exclusively from the mother is opposed to the general tendency of hereditary diseases. It occurs infrequently, and when found the lesions in 80 per cent. of the cases affect the liver and the portal system, so that it is impossible to draw positive conclusions regarding the nature of tuberculous transmission. Clinically it is generally admitted that when the children of tuberculous parents subsequently become tuberculous the disease usually manifests itself in its severest forms, although often these children are born at a time when the disease of the parents is latent. In order to solve the question, Hauser has carried on a series of experiments with rabbits and guinea-pigs. Some of the animals were infected before and some after conception. Altogether he obtained 30 young which could reasonably be suspected of hereditary infection — 12 rabbits and 18 guinea-pigs. All the rabbits had infected parents on both sides, while 14 guinea pigs had an infected father. Four mothers were infected during pregnancy. Eight of these young died during the first seven weeks and none were tuberculous. All of the remaining 22 were kept alive for periods varying from four to twenty-two months. One was killed accidentally and found to have general tuberculosis. The rest remained unaffected. They developed normally, and of 25 descendants obtained from them none showed the presence of the disease. These results are very different from those observed clinically in connection with syphilis in the human race and are not analogous to the pébrine disease of silkworms. Hauser therefore concludes that "the bacillary inheritance of tuberculosis not only lacks a sufficient foundation but appears to be irreconcilable with many important observations, and contains, moreover, internal contradictions that cannot be satisfactorily explained by the theory of actual heredity." He is compelled to assume that there is a peculiar hereditary predisposition in certain animals to the virus, which is not, like syphilis, maintained in the human race by a congenital transmission of the specific poison, but is the result of perpetual reinfection by tubercle bacilli from the outside.

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[8] Medical Record, vol. 54, No. 24.

[9] Medical News, March 11.

[10] Deut. Arch. f. klin. Med., October 27, 1898; Philadelphia Medical Journal, February 4, 1899.

TRACHEAL TUGGING AS A SIGN OF AORTIC ANEURISM.

A. Frænkel[11] gives a brief review of the first description of this sign by Oliver in 1878, and the further notice it has received at the hands of various observers. He calls attention to the importance of care in eliciting it, and recommends that the first and middle fingers of the observer's right hand should press gently up against the under border of the thyroid or cricoid cartilage, the patient lying with head thrown back, and cautions that a too powerful stretching of the trachea either by this upward push or by the other method of displacing the larynx to the left may result in rupturing the aneurismal sac. As requisite for the production of a downward tug of the trachea with cardiac systole, he insists that either the aneurism must be situated in the portion of the arch which crosses the primary bronchus, or, if the dilatation occurs in the first portion of the arch as in the case reported by him, there must be firm adhesion between the sac and the wall of the trachea.

Aneurism of the arch occurring under other conditions may not produce the tugging. The value of the sign in establishing a diagnosis is emphasized by his case, where the only other suggestive features were a moderate dilatation of the right pupil, and symptoms of tracheal stenosis with a normal larynx. The patient died three days after admission, of suffocation from pressure.

The only condition likely to mislead would be existence of other tumors, which however, like the aneurism, must fulfil the conditions necessary for the production of the sign.

STRANGULATED HERNIA IN PERICARDIAL SAC.

McDowell[12] gives the post-mortem conditions in the case of a strongly-built Kaffir who died suddenly, thirty-six hours after his first symptom. He complained one afternoon of pain near the ensiform and about the umbilicus, with breathlessness and cardiac oppression. The pain steadily increased and was soon accompanied by frequent vomiting. There was swelling of the abdomen from the first and complete stoppage of the bowels. On the next day but one after the event he got up to micturate, walked a few steps and dropped dead.

At autopsy the abdomen was much distended, and on opening the thorax a marked distention of the pericardium was found, caused by the presence within the sac, below the heart, of eighteen inches of acutely strangulated ileum and a large quantity of blood-like fluid. The hernia was a portion of the ileum, four feet from the cecum, and came through a smooth-edged opening, the size of a sixpence, in the tendinous portion of the diaphragm.

He emphasizes the following points: The sudden death, due to rupture of intestine, with consequent pressure on the heart, and shock; the absence of any history of injury on straining: and the difficulty of an operation even if a diagnosis could have been made.

PARACENTESIS PERICARDII.

Burtenshaw[13] puts on record the one hundred and eighth reported instance of this procedure, but gives no analysis of the other cases. The attack developed suddenly in a woman of sixty years who had been subject for some time to periodic attacks of bronchial asthma. Her lungs and kidneys showed no evidence of organic disease. There had been for ten years a mitral regurgitant murmur of slight degree. There was no history of tuberculosis, and she had not been the subject of rheumatism or gout. Having suffered for a couple of days with an exceptionally severe asthmatic attack during which the heart was demonstrated to be in its usual condition, there was noted during a remission of the dyspnea a marked intermission of the radial pulse synchronous with inspiration. Deep inspiration brought on another dyspneic seizure which differed from previous ones in the absence of râles and asthmatic wheeze. Pressure of the stethoscope in cardiac region caused intense pain, which was the first she had felt in that area, and thereafter with one exception she did not complain of cardiac distress except on pressure. Percussion showed enlarged area of cardiac dulness with crescentic lower margin, labored and irregular action, muffled sounds and disappearance of the impulse. About four hours later a needle was introduced one inch from sternum in the fourth left interspace, and half an ounce of bloody serum withdrawn, followed by plugging of the needle. A second larger needle was then inserted for two and one-half inches in fifth space, one inch from sternum, and another ounce withdrawn; during manipulation the heart was scratched with resulting spasm and pain. Marked relief from the withdrawal of fluid did not ensue for an hour, when under influence of whiskey and strychnia the breathing became normal and the heart's action more regular and strong. The further course of the case was marked by frequent attacks of uncontrollable vomiting, and a persisting uncertain action of the heart, with serious sinking spells, finally eventuating, six and a half weeks after tapping, in sudden death. Autopsy refused.

The points emphasized are: The age of the patient, the suddenness of the onset of the pericardial inflammation, the absence of an etiologic factor, the absence of pain in the region of the heart except on pressure, and the freedom from asthma after the development of the pericarditis. The long continued nausea is assumed to have been caused reflexly through the pneumogastric or sympathetic, and an attack of aphonia lasting two days to irritation of the recurrent laryngeal. The relief following withdrawal of so small an amount of fluid is in accord with a number of cases of like result.

TOXEMIC DELIRIUM IN HEART DISEASE.

As a contribution to the study of auto-intoxication, Eichhorst[14] describes phenomena observed by him in certain cases of heart disease where the anasarca had rapidly disappeared, in consequence either of simple rest in bed or of the administration of tonics, of which the most frequently used was a prescription consisting of 2 grains of digitalis leaves and 15 grains of diuretin. A surprisingly rapid increase in the daily amount of urine, which may rise as high as 7,000 cubic centimetres, and coincidently a corresponding decrease in the amount of edema often followed. Serious symptoms, more frequently in old than in young individuals, may accompany the increased diuresis, resulting at times in a condition of somnolence so great that the patients are with difficulty aroused, or in disturbances of consciousness in which the patient neither knows where he is nor recognizes his acquaintances. Then delirium comes on, either low and muttering or so wild that the patients tear the bedclothes and destroy the furniture in their neighborhood, and this may be followed by complete loss of consciousness. The pupils are usually small. Disturbances of respiration similar to what is observed in diabetic coma also occur, the patients breathing deeply and rapidly, with participation of the auxiliary respiratory muscles, but without recognizable obstruction in the respiratory tract. The face is not cyanotic but rather flushed and congested. This condition lasts for a number of days, until the edema is gone and the polyuria resulting from the use of digitalis and diuretin has stopped. In some cases recovery takes place in twenty-four hours, in others it is very gradual. So far as his experience goes, the prognosis is always good.

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[11] Deut. med. Woch. xxv, 1.

[12] British Medical Journal, January 7th.

[13] Medical News, March 11th.

[14] Deut. med. Woch., June 23, 1898.

The question naturally arises whether such disturbances are occasioned by the drugs administered, but he is convinced that they can be attributed neither to them nor to uremia, since in none of his cases was albuminuria present. Nevertheless they recalled symptoms described by older physicians, although never seen by himself, as resulting from a too rapid reduction of edema in kidney disease through too energetic sweat cures. The true cause seems to lie in a more rapid absorption into the blood of toxic bodies in the edematous fluid than the kidneys are able to take care of, thus causing an auto-intoxication of the central nervous system. The nature of such bodies must be left to the future to determine.

GALL-STONES IN MITRAL STENOSIS.

Brockbank[15] has studied the results of 1,347 autopsies with reference to the occurrence of gall-stones, and found that of 504 cases in which a decided cardiac lesion existed biliary calculi were present in 10.9 per cent., while of the 843 other non-cardiac cases only 5.4 per cent. were similarly affected. A gross cardiac lesion therefore seems to double the risk of the development of gall-stones. The most striking figures were those connected with mitral stenosis, including under that head all cases in which the mitral valve was stenosed, irrespective of other morbid cardiac conditions. Out of 87 instances they were found 19 times, 5 of 31 males, and 19 of 56 females being affected, a total percentage of 21.8.

Beside finding biliary concretions in the gall-bladders of subjects of heart disease, he has, on several occasions, examined bile obtained post mortem from adult subjects who have died of chronic cardiac affections, and in whom there was no macroscopic evidence of any tendency to the production of an excess of cholesterin by the mucous membrane. In such cases the bile, when taken from the gall-bladder, was found to be full of epithelial cells, singly and in clumps. Mixed with these cells may be found a few cholesterin crystals. If such specimens of bile be kept and examined from day to day, it will be found in many instances that the epithelial cells disappear gradually and that crystals of cholesterin form in great numbers, until finally no traces of the complete cells remain, and the bile is full of crystals in innumerable profusion. This does not always happen, but it is so frequent as to strengthen his view that there is a strong tendency for the cells of the biliary mucous membrane in chronic heart cases to produce an abnormal amount of cholesterin. He explains this occurrence by supposing that the lowered vitality of the general system and the passive congestion of the mucous membrane of the gall-bladder, which accompany severe chronic lesions of the heart, predispose to the formation of an increased amount of cholesterin by the epithelial cells of the biliary passages, and by the enforced inactivity of the patient, this excess of a crystalline substance tends to remain behind in the dependent fundus of a frequently enlarged, depressed and sluggish gall-bladder.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

REGULAR meeting, Monday, February 20, 1899, DR. R. H. FITZ in the chair.

DR. S. J. MIXTER presented a paper on

OBSERVATIONS UPON TYPHOID CHOLECYSTITIS WITH GALL-STONES.[1]

DR. RICHARDSON: This subject excites a great deal of interest at present among surgeons as well as among physicians. The possibility of a typhoid origin in inflammations of the gall-bladder, except during or soon after the typhoid itself, had never occurred to me. My first case was that of a woman who had not had typhoid fever — or, at least, in whom typhoid had not been suspected, and who lived in a community in which there had been no typhoid. But for the demonstration of the typhoid bacillus, which was made afterwards in the laboratory by my brother, no one would have suspected the origin of the trouble in this case. The patient, a woman of some fifty or sixty years, was supposed to have tumor of the kidney. I explored the gall-bladder, and found a long cylindrical gall-stone impacted in the cystic duct. I removed the stone, and the woman made a good recovery. I thought nothing more about it till it was reported that there was no question whatever about the presence of the typhoid bacillus.

Recently I operated for an acute cholecystitis in a woman of about the same age in a farming district, where, so far as we knew, there had been no typhoid. I was surprised in that case also to learn that the gall-bladder infection was from the typhoid bacillus. These cases have suggested an inquiry as to the formation of gall-stones, upon which Dr. Mark W. Richardson is now at work.

I recall cases of acute infection of the gall-bladder taking place in the course of acute infectious diseases. There were one or two which were fatal. The interest connected with them was in the source of the infection. Several other curious infections I have observed in inflammation of the gall-bladder. One, for instance, was due to the pneumococcus; others to simple pyogenic organisms. In still other forms of cholecystitis there has been no infection whatever found, and in one or two cases there have been no gall-stones. When the question of the infectious origin of gall-stones came up it seemed to me very improbable that such could be their origin; but I understand that it is being shown from examinations of the gall-stones themselves that their germ origin may possibly be proved.

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[15] Edinburgh Medical Journal, 1898, vol. 46, p. 51.

[1] See page 493 of the Journal.

From the standpoint of diagnosis the acute cholecystitis is interesting because it is frequently mistaken for appendicitis, and that by the most experienced observers. Dr. Mixter has, I think, reported one or two cases in which he operated for appendicitis and found inflammation in or about the gall-bladder. In three or four instances I have made the diagnosis of appendicitis with localized peritonitis high up, and I think in four cases out of some twelve or fifteen it proved to be acute inflammation of the gall-bladder. In all cases of infection with constitutional disturbance, in which there are pain and tenderness high up in the right side, — whether in women or in men, — we must bear in mind that we may have the gall-bladder as the source of the trouble. If we bear this in mind sometimes we avoid the extensive exploration which in obscure cases we sometimes make in the median line. In one instance I operated in the median line for what seemed to be acute intestinal obstruction. After exploring the whole abdomen, I came last to the gall-bladder — where I ought to have gone, perhaps, first, for there was a history of gall-stones — and found that to be the source of the trouble.

The subject is extremely interesting, especially the line of inquiry opened up by the discovery of a remote typhoidal origin.

Dr. J. E. Goldthwait spoke upon the

THERAPEUTIC VALUE AND METHODS OF USE OF HOT-AIR TREATMENT OF BONE AND JOINT AFFECTIONS.

He illustrated the subject with photographs and various forms of apparatus.

Dr. R. W. Lovett showed a hot-air apparatus which could be heated by electricity.[2]

Dr. Charles M. Green read a paper entitled

THE VALUE OF POSTURE IN THE TREATMENT OF OCCIPITO-POSTERIOR POSITIONS.[3]

ASSOCIATION OF AMERICAN PHYSICIANS.

(Concluded from No. 20, p. 481.)

The Fourteenth Annual Meeting was held in the Arlington Hotel, Washington, D. C., May 2, 3 and 4, 1899.

Dr. William H. Welch, of Baltimore, reported a case of

GENERAL HEMOCHROMATOSIS.

It is the second case of the kind reported in the literature. The patient was a man, age twenty-five years, who died of typhoid fever. He had had a deep bronzing of the skin that was thought to indicate Addison's disease, and such was the diagnosis. At the necropsy there were found the ordinary lesions of typhoid fever and a diffuse intense pigmentation of all the organs, more marked in some than in others. There was extreme cirrhosis of the liver, which was dark reddish-brown in color. The pancreas was extremely cirrhotic and pigmented, the spleen large and soft from the typhoid fever, and the pulp somewhat obscured from the pigmentation, the heart brownish and flabby, and evident pigmentation of the stomach and intestine. There was cloudy swelling of the kidneys, pigmentation of the lymph-glands, especially the retroperitoneal lymph-glands, and moderate pigmentation of the adrenals, especially in the outer zone of the cortex. The adrenals were otherwise normal. On microscopic examination there was seen a deposit of brownish-yellow pigment in the cells of the liver, almost all cells of various kinds being affected, except, possibly, those of the hepatic artery. The pigment was of two kinds, hemosiderin and hemophosin, the latter being less abundant than the former. In addition there was marked cirrhosis of the liver. The lesions both of pigmentation and cirrhosis were more marked in the pancreas than in the liver. Here and there in the liver there was unquestionable degeneration of the parenchyma cells, and this seemed related to the pigmentary deposits. The pigmentation of the spleen was more marked in the pulp than in the Malpighian bodies. In the stomach and intestines the pigment was especially hemophosin, especially that in the muscular coats. The lymph-glands were excessively pigmented, the sinuses being at times very much affected. There was but little pigment in the kidney. The heart was deeply pigmented, the pigment being the same as that in the brown atrophy but more excessive. It did not react to iron. There was little pigment in the lungs. In the skin in the epidermis the pigment was confined to the rete layer; in the corium it was especially about the blood-vessels and sweat-glands; that in the coils of the sweat-glands was iron-free, the other contained iron. The characteristic feature of the case was the widespread pigmentation of the various organs. The presence of diabetes in such a case was considered accidental, and when it develops it is likely to prove fatal within a short time. The pigment, of course, originates from the hemoglobin; but as there was no notable anemia there must have been considerable regeneration. The destruction of the erythrocytes, however, does not entirely account for the condition, and something else must be taken into account. But what this is is unknown. It was thought that the affection is a morbid entity, and that there is likely something in the body that acts upon the parenchyma cells leading to the deposition of the pigment. It is not likely that all the pigment is formed in the liver and then transported to the other organs. The cirrhosis of the liver and pancreas is secondary to the blood condition. to the alteration of the parenchyma cells, and the diabetes is merely a manifestation of the cirrhosis of the pancreas. The diagnosis of the condition may be assisted by the excision and microscopic examination of a portion of the skin.

In the discussion Dr. William Osler spoke of Hanot's cirrhosis of the liver and of his (Hanot's) recognition of a bronzed type. He presented a patient. a man, age forty-eight years, who four years ago began to get a little dark. Since then he has continued to get still darker and to have recurring attacks of purpura. There has also been some loss of flesh. Lately enlargement of the liver and spleen have been recognized, and the condition is considered likely to be similar to that described by Dr. Welch.

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[2] Boston Medical and Surgical Journal, April 20, 1899.

[3] See page 489 of the Journal.

Dr. J. **George Adami**, of Montreal, referred to a similar case occurring in a woman whom he had observed, and stated that the first place to be affected is likely the muscular coats of the intestine.

Dr. J. H. **Musser**, of Philadelphia, read a paper entitled

FURTHER NOTES OF A CASE OF MALTA FEVER.

The case was first reported in the *Philadelphia Medical Journal* December 31, 1898. Following the previous report that patient had fever reaching 104° and 105° for a period of eight days. Afterward there were diarrhea and some blood in the stools that was thought to come from the colon. Later the temperature fell somewhat, but continued undulating for one hundred and twenty-three days. There was never any response to the Widal reaction for typhoid fever, but the serum test with the micrococcus melitensis was positive.

Dr. S. J. **Meltzer**, of New York, read a paper entitled

OTITIS MEDIA IN LOBAR PNEUMONIA OF CHILDREN.

He reported a number of cases, the patients varying from eight months to eight years, in which earache was the predominant initial symptom of an attack of lobar pneumonia. During the course of the pneumonia the earache diminishes, and never outlasts the crisis. Otoscopic examination is unsatisfactory; suppuration rarely supervenes. Reference was made to the fact that whereas frequent mention is made that otitis media may occur in catarrhal pneumonia, nothing is stated with reference to its association with lobar pneumonia. He has observed this so frequently, however, that he feels justified in making a diagnosis of pneumonia on the first day in a case commencing with high fever, frequent breathing and earache. This earache was formerly considered an instance of sympathetic pain, but latterly he has thought it due to a simultaneous infection of the lung and ear with bacteria.

In the discussion Dr. **Abram Jacobi** stated that inasmuch as Dr. Meltzer seems to make the diagnosis of otitis media upon the presence of pain alone, and cases in which suppuration does not supervene cannot be proved to be instances of otitis media, he would suggest that the earache is a symptom of an angina that is followed by pneumonia.

Dr. **Francis P. Kinnicutt**, of New York, asked if the frequency of otitis in children dying of other causes did not militate against the probability of there being a causal relationship between otitis and pneumonia.

Dr. **Jacobi** further stated that the mere presence of bacteria in the middle ear does not constitute of itself disease, as the middle ear, especially in children, is so readily accessible to all sorts of bacteria that may gain access to the pharynx.

Dr. T. M. **Rotch**, of Boston, stated that suppurating otitis is frequent in young infants dying of other causes, and that otoscopic examination does not seem so difficult to one experienced.

Dr. **Meltzer** stated that he had been induced to undertake this study because of the absence of statements relative to the occurrence of otitis media in lobar pneumonia, whereas it is frequently mentioned that such a complication may attend catarrhal pneumonia. He also thought that of recent years it had been determined that conditions of the middle ear characterized by secretion and bacteria were really inflammatory.

Dr. F. A. **Packard**, of Philadelphia, read a paper entitled

ENDOCARDITIS OF TONSILLAR ORIGIN,

with a report of five cases. He stated that the paper was the result of an attempt to adduce some collateral evidence of the infectious nature of acute rheumatism. He reported five cases of endocarditis all of which had been preceded by an attack of tonsillitis. The minutiæ of the physical signs were detailed to ensure the correctness of the diagnosis of the endocarditis. In two of the cases it was certain that prior to the attack of tonsillitis the hearts had been sound, and it was presumable that such was also the case in the other instances. Mention was made of the frequency of such cases, and also of the occurrence of other members of the so-called "rheumatic series" after tonsillitis. It was stated that such tonsillitis and endocarditis are not rheumatic, but that the endocarditis is rather due to an infection by bacteria gaining access to the body through the tonsils or to the toxins of such bacteria.

In the discussion Dr. **James Tyson** spoke of the frequency of nephritis originating in an attack of tonsillitis.

Dr. W. S. **Thayer**, of Baltimore, stated that the fact that the tonsils may serve as the portal of entry for severe general infections is well illustrated by a case of acute fatal streptococcus infection that he had observed.

Dr. W. S. **Thomson** cited a case of suppurative tonsillitis followed the day after rupture of the abscess by pleuritis, pericarditis, ulcerative endocarditis, ecchymotic spots, and death on the seventh day.

Dr. **George Dock** spoke of the manner in which various kinds of infection become operative, and cited a case of so-called rheumatic iritis and pleuritis developing after an attack of tonsillitis. He also read a paper entitled

A CASE OF FATAL EPISTAXIS, WITH A STUDY OF THE BLOOD.

The patient, a man, age thirty-seven years, was admitted to the hospital on account of severe nose-bleed, which had been almost persistent for five weeks prior to admission. While in the hospital there occurred severe nose-bleed, the patient was weak and nervous, but there was not much loss in weight. Examination of the heart, lungs and abdomen was negative. Local examination failed to reveal the cause of the bleeding. Despite constantly renewed plugging, and other treatment, the hemorrhages continued. Examination of his blood on the first occasion revealed hemoglobin 25 per cent., erythrocytes 1,200,000 per cubic millimetre, leucocytes 13,000 per cubic millimetre. Later the number of erythrocytes fell to 360,000 per cubic millimetre; ecchymosis, edema, icterus, diarrhea developed, and the patient died of pulmonary edema. At the necropsy there were found a small endothelioma of the turbinated bones, fatty degeneration of most of the organs, etc. Especial interest attached to the great number of nucleated red blood corpuscles in the blood and the moderate leucocytosis (48,000). The nucleated red corpuscles included all varieties, and varied in proportion from time to time. At times they numbered 2,800 per cubic millimetre, and they presented variations in structural and tinctorial peculiarities. Poikilocytes were rather uncommon, but degenerated forms and shadows were observed. There were great alterations in the proportions of the various forms of leucocytes. Mononuclear eosinophiles were always present, as were also basophiles in small number. At one time there were 9 per cent. of Ehrlich's myelocytes.

In the discussion **Dr. W. S. Thayer** stated his observations relative to normoblasts in great number in certain cases, and said that though good prognostic significance was commonly attached to them, other accompanying signs are necessary to justify a favorable prognosis.

Dr. Alfred Stengel stated that no especial prognostic significance can be attached to the presence of normoblasts; their presence does not exclude pernicious anemia; they merely indicate regeneration of the blood.

Dr. William Osler cited a case of epistaxis occurring in a young adult, proving nearly fatal and associated with most remarkable superficial varices and angiomas, which also often gave rise to hemorrhages.

Dr. J. George Adami, of Montreal, read a paper prepared by himself and **Drs. Maude E. Abbott** and **F. J. Nicholson**, entitled

ON THE DIPLOCOCCUS FORM OF THE COLON BACILLUS.

He stated that in the course of a study of a long series of livers, both cirrhotic and otherwise, he had in the specimens examined with scarce an exception encountered larger or smaller numbers of minute bodies, and the more these had been studied the more convinced had he become that these are bacteria. At first they were regarded as causative of cirrhosis, but since they have been detected in apparently normal livers they cannot be regarded as specific of any disease. From several cases of cirrhosis of the liver there had been obtained either a vigorous or what is now regarded as an attenuated growth of the colon bacillus, while after intravenous inoculation of adult rabbits with forty-eight-hour broth growths of the stock culture of colon bacillus the livers showed minute diplococcus forms in enormous numbers. The work of the present communication was divisible into two portions: (1) On the production of a diplococcus form of the colon bacillus outside of the organism; (2) on the diplococcus form of the colon bacillus within the tissues. The various methods whereby the colon bacillus was caused to revert to the diplococcus form were detailed. The greatest change was obtained by culture for 24 hours in broth rendered 1.5 per cent. acid according to the method recommended by the Committee of Bacteriologists of the American Public Health Association, to which 2.5 per cent. lactose had been added. As a result of experiments upon rabbits it was concluded: (1) That the colon bacillus injected into the circulation is rapidly taken up by the liver and kidneys; (2) that within fifteen minutes after inoculation some bacilli have already been ingested by the endothelial cells in the liver, and that the process of ingestion may continue until these cells are full of bacilli; (3) that in the process of ingestion the bacilli are broken up into shorter lengths, and that these short bacillary forms may within the endothelial cells present themselves as two deeply staining dots and may thus resemble diplococci, though it would appear from future events that these two deeply staining dots are firmly attached by a firm, non-staining material; (4) that already, within two hours, the modified bacilli may be discharged outwardly from the endothelial cells and be taken up by the underlying liver cells; (5) the exact stages of this discharge have as yet not been capable of being followed. In the liver cells the modified bacilli are to be recognized as small diplococci of a size varying from that equal to the diplococci seen in the endothelial cells down to points of extreme tenuity. Evidently these forms are undergoing destruction. They lose their power of staining, and if the destruction be not too rapid they assume a brownish tinge. The cause of this latter is not determinable, but it is observed in unstained sections, and studies of human livers indicate that not a little of the fine pigmentation common in the liver cells is brought about by the existence in these cells of these minute elements of bacterial destruction. Similar alterations were observed in the kidneys. Assuming the correctness of his conclusions, he thinks that the liver possesses the most important function of taking up and destroying bacteria, more especially the colon bacillus, which have gained admission through the portal blood, while the kidney possesses a like power of destroying bacteria circulating in the general systemic blood.

A paper entitled

THE ORGANISM OF A CASE OF BLASTOMYCETIC DERMATITIS,

by **Dr. Ludwig Hektoen**, of Chicago, was read by title.

Dr. James Stewart, of Montreal, read a paper entitled

TUMORS INVOLVING THE HYPOPHYSIS.

He reported two cases illustrating the characteristic local manifestations of tumor formation in the region of the hypophysis. The first case was in the person of a woman, age thirty-five years. The symptoms were headache, vomiting, and temporal hemianopsia. Later, with infiltration of the ethmoid and sphenoid cells, there ensued hemorrhage from the nares. There were no symptoms of acromegaly or other forms of nutritional disturbance. Twenty months after the onset of symptoms the patient died. Examination of the growth after death revealed it to be a perithelial angiosarcoma of the pituitary body. The second case was that of a man, age forty-two years. The symptoms, which extended over a period of nine years, consisted of right temporal hemianopsia, profound anemia (2,100,000 erythrocytes per cubic millimetre), and a general condition not unlike that seen in myxedema. There were no alterations in the osseous tissues. Examination after death revealed the growth to be an endothelioma of the base of the brain, causing pressure on the chiasm and obliterating the pituitary body.

In the discussion **Dr. M. Allen Starr** narrated a personal observation similar to Dr. Stewart's.

Dr. W. S. Thayer, of Baltimore, demonstrated an

ACROMEGALIC SKELETON.

The patient was a woman, age forty-one years. The acromegaly was associated with goitre, and a tumor (probably adenomatous in character) of the pituitary body.

In the discussion **DR. WILLIAM OSLER** commented upon the intensity of the headache with which the patient suffered; as revealed by the necropsy, this was unattended by marked pressure.

DR. J. J. PUTNAM suggested that in some cases the persistent and intense headache is associated with interstitial alterations in the bones of the skull.

A paper entitled

THE APPLICATION OF THYROID EXTRACT IN THE TREATMENT OF A CEREBRAL NEOPLASM,

by Dr. **STARLING LOVING**, of Columbus, Ohio, was read by title.

THIRD DAY.

DRS. F. PFAFF and **J. J. PUTNAM**, of Boston, read a paper entitled

EXPERIMENTAL RESEARCH DISPROVING THE THEORY THAT PARAXANTHIN-POISONING IS A CAUSE OF MIGRAINE.

They had made careful analyses of the urine of five patients with typical migraine and seven with migrainous epilepsy, in addition to examining the urine of a large number of patients in the county jail and various hospitals. It was stated that Dr. B. K. Ratchford, of Cincinnati, had based his opinion as to the presence of paraxanthin in his "final fluids" upon the results of physiologic experimentation, and this was considered faulty. As a consequence of their experiments and research they concluded that there is no difference in the amount of paraxanthin in the urine of healthy and ill patients, and that Dr. Ratchford's conclusions could not be substantiated. It was thought that the ill effects found by Dr. Ratchford by injecting his "final fluids" into lower animals were dependent upon the presence of some impurities, particularly the ammonia salts and other inorganic compounds.

In the discussion **DR. B. K. RATCHFORD** stated that he had depended for the identification of the paraxanthin in his "final fluids" upon inoculation experiments and various approved chemical tests. He considered the condition a leucomain poisoning, and his later experience confirms him in the correctness of this view — that the xanthin bodies are related etiologically to migrainous conditions. Precisely similar experiments with the urine of normal individuals and that of patients with migraine revealed the latter toxic and the former not so. The toxin was considered paraxanthin. If his tests were unreliable, then the query, What is the toxin? As the "final fluids" were in reality found to lose some of their toxic properties when deprived of their ammonia impurities, it was thought that ammonia compounds of the xanthin bodies were the etiologic factors in migraine. This conclusion was stated to point to the inactivity of the liver in this condition, and this view was confirmed by the beneficial effects of therapeutic measures directed to that organ.

DR. C. A. HERTER, of New York, stated that he considered that the burden of proof rested with Dr. Ratchford. Experiments that he himself had undertaken with the urine from migrainous patients yielded negative results.

DR. PFAFF doubted that ammonia compounds of the xanthin bodies could rightly be held answerable for the migraine.

DR. C. A. HERTER, of New York, read a paper entitled

THE ACTION OF HEPATIC, RENAL AND OTHER CELLS ON PHENOL AND INDOL UNDER NORMAL AND PATHOLOGIC CONDITIONS.

He had conducted experiments with twenty-six animals, the object of the research being the determination of the action of living cells, especially the hepatic, renal, muscle and nervous elements, upon phenol and indol. These aromatic bodies being formed in the intestine in conditions of health and disease, a special interest attaches to their study. Two methods were employed in the research. In one given weights of the normal liver, kidney, muscle, brain and blood were minutely divided and then brought into contact with a known quantity of phenol or indol in watery solution. After permitting the cells to remain in contact with the aromatic bodies for a period of time, varying from one to several hours in different experiments, the entire mixture was subject to distillation. The distillate containing phenol or indol was then treated by means of suitable reagents, and the quantity of the substance recovered by means of distillation was then compared with the quantity recovered from a control distillate of phenol or indol. It was found that the distillate recovered from the liver contained less phenol than that from any other organ and much less than that obtained from a control distillate. Thus it was made clear that a certain amount of phenol is in some way transformed by contact with the living cells. The blood and brain were found to possess only a slight transforming action. The kidney was found to act energetically, but less so than the liver. The muscle occupied a position intermediate between the liver and kidney on the one hand and the blood and brain on the other. Similar results were obtained in the case of indol, but they showed less regularity than those obtained with phenol. It is not clear how such activity on the part of the cells should be interpreted. Similar activities have been attributed to the action of an oxydizing ferment. It is evident, however, that the action of a ferment is incompatible with the observation that the action of strong acid, absolute alcohol and boiling water only slightly diminishes the activity of the cells. Potatoes were found to have an action similar to the cells; egg albumin gave no action, nor did gelatin. A second method of study was pursued in another series of observations. In these phenol and indol were introduced intravenously in varying amounts. The animals were quickly killed, the organs triturated, and promptly subjected to distillation. These experiments justified the conclusion that the cells of the liver are more active than those of the kidney, muscle, or brain in removing the aromatic substances from the blood, in effecting their rapid transformation. Another series of observations was made with organs of animals placed under different pathologic conditions, such as prolonged anesthesia, poisoning by alcohol, poisoning by ricin, poisoning by morphine, and staphylococcus septicemia. These experiments indicate that some pathologic conditions are capable of directly reducing the ability of the liver cells to transform phenol and indol. Similarly it was found that the liver cells in cases of fatty and cirrhotic livers were incapable of exerting their normal activity. In no case, however, was this capacity to act upon phenol and indol entirely abolished. Considerable activity remained when the liver was the seat of the most advanced structural alterations in its cell elements. It was thought that when phenol passes into the body it is loosely held by the protoplasm of the cells, and that during this time it does not give its reactions and does not exert its toxic action. It was also thought that this activity of the liver cells is but one expression of a property that may be exerted with regard to other aromatic bodies, and possibly also with regard to non-aromatic bodies.

Dr. F. Forcheimer, of Cincinnati, read a paper prepared by himself and Dr. R. W. Stewart, of Cincinnati, entitled

ON THE TOXICITY OF THE URINE.

The observations detailed were based upon the study of the urine of 10 patients suffering with various forms of gastro-intestinal auto-intoxication, 14 other patients, and 154 animal inoculations. It was found that urine is less toxic to mice than to rabbits and that different animals react differently to different doses. It was also found that fresh urine, filtered fresh urine and boiled urine are non-toxic; that boiled urine becomes more toxic the longer it is kept; that boiled urine to which boracic acid has been added also becomes somewhat toxic; and that fresh urine becomes more toxic the longer it is kept. The toxicity of the urine was thought dependent upon the formation of toxins by bacteria.

Dr. T. M. Rotch, of Boston, reported a case of

PERFORATION OF THE STOMACH BY A FOREIGN BODY IN AN INFANT SEVEN WEEKS OLD.

The child was suddenly attacked with abdominal pain and vomiting. Peritonitis developed, and on the fourth day celiotomy was performed and the peritoneal cavity irrigated, no cause for the peritonitis being detected. The child died three days later. At the necropsy there was detected a minute perforation of the stomach in which a small thread was found.

A paper entitled

A SMALL ANEURISM OF THE DESCENDING ARCH OF THE AORTA; X-RAY EXAMINATION CONFIRMED BY AUTOPSY,[1]

by Dr. F. H. Williams, of Boston, was read by the secretary, Dr. Henry Hun, of Albany, N. Y. The patient was a man, age thirty-seven years, in whom there existed an aneurism of the innominate artery, and as revealed by x-ray examination an aneurism of the descending arch of the aorta. The latter was not determinable by the ordinary methods, nor did the outline of the heart correspond with the area of cardiac dulness as determined by percussion. Attention was directed to the discrepancy, as often determined by Dr. Williams, between the outline of the heart as indicated by percussion and that seen by the fluoroscopic screen.

The following papers were read by title: "An Experimental Study of Pancreatitis," by Dr. Simon Flexner, of Baltimore; "Peculiarities of the Eruption in Typhoid Fever," by Dr. J. M. DaCosta, of Philadelphia; "Types of the Lithic Diathesis," by Dr. I. N. Danforth, of Chicago; "Individualization in the Bath Treatment of Patients Ill with Typhoid Fever," by Dr. S. Solis Cohen, of Philadelphia.

The following were elected members of the Association: honorary member, Dr. Israel T. Dana, of Portland; active members, Dr. J. B. Thacher, Dr. Walter B. James and Dr. William H. Park, of New York; Dr. R. C. Cabot, Dr. Morton Prince, and Dr. J. H. Wright, of Boston; Dr. John S. Ely, of New Haven; Dr. L. F. Barker, of Baltimore, and Dr. W. G. Johnston, of Montreal.

The following were elected officers for the ensuing year: President, Dr. E. G. Janeway, of New York; Vice-President, Dr. William H. Welch, of Baltimore; Recorder, Dr. I. Minis Hays, of Philadelphia; Secretary, Dr. Henry Hun, of Albany; Treasurer, Dr. J. P. Crozer Griffith, of Philadelphia; Councillor, Dr. William T. Councilman.

Recent Literature.

Essays for Students. By Stephen Paget, F.R.C.S., Surgeon to the West London Hospital; Surgeon to the Ear and Throat Department of the Middlesex Hospital. New York: William Wood & Company. 1899.

"These essays were written for students only, to illustrate cases that are common in hospital work and afterward in practice." There are essays on Strangulated Hernia, Cancer of the Breast, Some Run-over Cases and the Elements of Aural Surgery. They are really very interesting, especially as they present the deductions of a man of experience.

A Clinical Text-Book of Surgical Diagnosis and Treatment for Practitioners and Students of Surgery and Medicine. By J. W. Macdonald, M.D., Graduate in Medicine of the University of Edinburgh; Licentiate of the Royal College of Surgeons, Edinburgh; Professor of the Practice of Surgery and of Clinical Surgery in Hamline University, Minneapolis, etc. With 328 illustrations. Philadelphia: W. B. Saunders. 1898.

This book of 781 pages is really of value, and largely from the fact that it calls attention to the importance of surgical diagnosis, which, as the author justly says, is frequently made secondary to the operation. The work is divided into The General Examination of Patients; Examination of the Vascular System; Injuries and Diseases of the Osseous System; Injuries and Diseases of the Muscles, Tendons and Bursæ; Injuries and Diseases of Joints; Injuries and Diseases of the Digestive System; The Genito-Urinary System; Injuries and Diseases of the Head; Injuries, Diseases and Deformities of the Spine; Diseases and Injuries of the Nerves; Injuries and Diseases of the Respiratory System; The Diagnosis and Treatment of Syphilis; The Diagnosis and Treatment of Tumors; Diseases and Injuries of the Neck; Injuries and Diseases of the Breast; Diseases and Injuries of the Female Generative Organs; The X- (or Röntgen) Rays in Surgical Diagnosis.

We question whether it would not have been wise to have devoted the whole work to surgical diagnosis. However, the treatment, as it appears, is judiciously selected, although by no means exhaustive. The work is singularly complete, although at times the information given is very fragmentary. This is natural from the size of the book, but it is one which we believe will be of use especially to students and possibly to surgeons.

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[1] See Journal, vol. cxl, No. 20, p. 469.

The Surgical Complications and Sequels of Typhoid Fever. By William W. Keen, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; Vice-President of the College of Physicians of Philadelphia; Membre Correspondant Étranger de la Société de Chirurgie de Paris; Membre Honoraire de la Société Belge de Chirurgie. Based upon tables of 1,700 cases, compiled by the author and by Thompson S. Westcott, M.D., Instructor in Diseases of Children, University of Pennsylvania; Visiting Physician to the Methodist Episcopal Hospital, Philadelphia. With a chapter on the Ocular Complications of Typhoid Fever, by George E. de Schweinitz, A.M., M.D., Professor of Ophthalmology, Jefferson Medical College; Professor of Diseases of the Eye, Philadelphia Polyclinic; Ophthalmic Surgeon to the Philadelphia and Orthopedic Hospitals; and as an appendix, The Toner Lecture, No. V. Philadelphia: W. B. Saunders. 1898.

This monograph is of actual value and is the most complete work that we have on the subject. It is interesting to note that Dr. Keen returned to the subject of typhoid fever after having contributed the Toner Lecture twenty years ago. We can always expect a work of value from a writer who has considered a subject more or less constantly for twenty years and in this book we are by no means disappointed. It is a work which one will turn to as a standard source of reference on the complications and sequels of typhoid fever and is written in the author's interesting and forcible style.

The Practice of Surgery. A treatise on Surgery for the use of Practitioners and Students. By Henry R. Wharton, M.D., Demonstrator of Surgery in the University of Pennsylvania; Surgeon to the Presbyterian and the Children's Hospitals; Assistant Surgeon to the Hospital of the University of Pennsylvania; Consulting Surgeon to the Bryn Mawr Hospital; Fellow of the American Surgical Association, and B. Farquhar Curtis, M.D., Professor of Clinical Surgery in the New York Post-Graduate Medical School and the Woman's Medical School of the New York Infirmary; Surgeon to St. Luke's Hospital and the New York Cancer Hospital; Fellow of the American Surgical Association. Profusely illustrated. Philadelphia: J. B. Lippincott Company; London. 1898.

And still they come! The restlessness that exists in the surgical world on the subject of text-books is extraordinary, and we believe it shows that the right text-book has not yet been written. It is interesting to note that in the successive text-books which have appeared they are becoming more and more practical, and the authors have endeavored to "condense the information necessary to enable the general practitioner or the student to carry on or begin the successful practice of the art of surgery." In this we believe the authors have succeeded. The work is an excellent one. It is well arranged, carefully written, the cuts are not entirely satisfactory, but the book as a whole is valuable and will undoubtedly serve as a text-book in many schools. We do not believe that text-books on surgery should include chapters on the eye, but the chapter on Injuries and Diseases of the Eye, written by de Schweinitz, is as satisfactory as the rest of the book.

Ovariotomy and Abdominal Surgery. By Harrison Cripps, F.R.C.S., Operator for Abdominal Sections to the Ward for Diseases of Women in St. Bartholomew's Hospital; Jacksonian Prize Essayist, Royal College of Surgeons, on the Treatment of Rectal Cancer; late Surgeon Great Northern and Royal Free Hospitals. London: J. & A. Churchill. Philadelphia: P. Blakiston, Son & Co. 1898.

We like this book, and have used it for reference for some time. The opening sentence in the work is one which we could commend to writers of monographs: "The chief object of this work is to record only such operative details as I have found valuable in my own experience." The collation of operative methods and placing them together is of value, yet the real value of their work is in the personal experience of the author. This we find on every page of the book. The work takes up the greater part of the modern abdominal operations. The majority of books upon ovariotomy and abdominal surgery have been written by gynecologists, and it is of interest to see these subjects written about by a general surgeon. The chapter on the Radical Cure of Hernia, by Mr. Lockwood, is of value, although the chapter is not as valuable as those contributed by Mr. Cripps.

A Text-Book of Mechano-Therapy (massage and medical gymnastics) especially prepared for the use of medical students and trained nurses. By Axel V. Grafstrom, B.Sc., M.D., late Lieutenant in the Royal Swedish Army; late House Physician City Hospital, Blackwell's Island, New York. With eleven pen-and-ink sketches by the author. Pp. 139. Philadelphia: W. B. Saunders. 1899.

This is a brief and extremely practical discussion of what may be done through the treatment of disease by movements. That such methods of treatment in certain cases are beneficial no one can now deny; in this small volume an attempt is made to bring graphically before the student's mind and eye the details of manipulation. There is no doubt a tendency to exaggerate the applicability of massage and mechanical treatments generally by their special advocates. This error the writer has done much to avoid by his almost complete omission of theoretical considerations. The book is small and attractively bound and printed. We can cordially recommend it as a guide in the treatment of the varied affections in which massage and medical gymnastics are indicated.

Diagnosis by the Urine. By Allard Memminger, M.D., Professor of Chemistry, Urinology, and Hygiene in the Medical College of the State of South Carolina; Visiting Physician to the City Hospital of Charleston. Second edition. Philadelphia: P. Blakiston, Son & Co. 1899.

This small volume is a description of Professor Memminger's method of urinary analysis and of his views in regard to the application of the results of this analysis to diagnosis.

The most important feature of the book is the subject matter upon the relation of the absolute and relative solids of urine to diagnosis of disease. The author places marked emphasis upon the importance of taking records of the solids in clinical work and claims that the record of these solids in many cases, especially in chronic nephritis, has a much more important bearing upon diagnosis and prognosis. He has even developed a classification of conditions in which the urine is pathological based upon the record of the absolute and relative solids. We cannot agree with the details of the author's classification. Our experience does not justify such extreme generalizations from these records of solids.

Thus the statement on page 79, that a record of absolute solids, 60 grammes or more of which urea is 30 grammes or more, but in which the relative solids are less than 50 grammes, of which urea is less than 20 grammes, with the slightest show of albumin, with or without casts, is an unfailing sign of a chronic Bright's disease, is much too absolute.

Also, we might suggest that the rough method of estimating the solids recommended by the author, the multiplication of the decimal of the specific gravity by 2.33 to obtain the weight of solids per 1,000 cubic centimetres of urine, is not accurate, and, in our experience, should not be depended upon in clinical work.

But though the author is frequently in error in the application of his x-records, nevertheless we believe that his advocacy of extreme regard to the question of the excretion of solids, as urea, chlorine phosphates, etc., is a step in the right connection. The importance of these records is not generally appreciated and not sufficiently emphasized in many text-books. It is quite true, as the author states, that these determinations may be of much more value in the study of a case than the determinations in regard to albumin and casts.

The Treatment of Skin Cancers. By W. S. Gottheil, M.D. New York: Published by the International Journal of Surgery Company.

The object of this little book is to emphasize the benefits that may be derived from treating cancers of the skin by the caustic methods. Arsenic in the form of Marsden's paste is preferred, and its advantages in most instances over the treatment by excision are strongly insisted on. Beyond this the subject-matter is simply a repetition of what is found in most text-books on the subject of cutaneous epitheliomata.

The Medical Association of the Greater City of New York. — A meeting of the recently organized Medical Association of the Greater City of New York was held at the Fifth Avenue Hotel on Wednesday evening, April 10th, when the following officers were elected: Vice-President, Dr. John D. Rushmore, of the Borough of Brooklyn; Recording Secretary, Dr. P. Brynberg Porter, of the Borough of Manhattan; Corresponding and Statistical Secretary, Dr. Frank C. Rayner, of Brooklyn; Treasurer, Dr. Augustus D. Ruggles, of Manhattan. It had been hoped to elect Dr. Austin Flint president of the Association, but on account of Dr. Flint's being seriously ill with pneumonia the filling of this office was postponed. Dr. J. Blake White was chosen chairman for the Borough of Manhattan, and the selection of the chairmen for the other boroughs will be announced at the June meeting.

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THE FORMATION OF URIC ACID AND ALLIED SUBSTANCES IN THE ANIMAL BODY.

The subject of the formation of uric acid in the human body and of its relation to conditions of health and disease is one which has held considerable importance in both physiological and medical literature. Modern research upon this subject has led to the total abandonment of the hypothesis, so long held, that uric acid formed in the body represented an intermediate product in the decomposition of proteid substances to urea. It is now known that this uric acid represents a specific end product of the particular proteid compound nuclein, which forms a constituent of the cell nuclei. This nuclein constituent of all nuclei admits of being split up to a proteid substance and nucleinic acid. And it is from this nucleinic acid of the nuclein, not the proteid, that the uric acid is derived. This much is proven.

Animals or men fed with substances rich in nuclein, as calf's thymus, invariably show an increase in the formation and elimination of uric acid out of all proportion to that following the ingestion of equal amounts of proteid not rich in nuclein.

It does not follow from this that the nucleinic acid of the food is the only source of uric acid in the body. Some is of course produced in the breaking down of the cell nuclei of the body tissues. And these nuclei may have depended for their supply not only upon food nuclein but upon other nitrogenous materials. Some uric acid may be synthesized in the mammalian body, as is most of the uric acid which is formed in birds. The recent investigations of Minkowski upon dogs, however, tend to disprove this latter assumption and to point to oxidation as the sole process of uric acid formation, in the dog at least.

To what extent the formation of the uric acid from this food nuclein is a direct one cannot be determined. Some writers claim that the formation in the body occurs only as the result of the breaking down of the nuclein which has been organized into the cell nuclei, as the leucocytes (Horbaczewski) or the body tissue cells (Kuhnau). According to these authors, the influence of the nuclein content of the food is an indirect one only, the nuclein rich food simply stimulating a more active production and destruction of the cells in the body, producing especially an increased digestion leucocytosis. This hypothesis is not, however, in the present state of our knowledge susceptible of direct proof. Certain it is, however, that the formation of the uric acid is dependent in part upon certain unknown conditions of the organisms as well as the nuclein supply in the food, since this formation varies greatly in the same animal with the same amount of food taken under different conditions.

The uric acid is thought to be formed in the body from the nucleinic acid through the oxidation of certain preformed atomic groups contained in the nucleinic-acid molecule, known as the xanthin or alloxur (Kossel) or purin (Fischer) groups. By decomposition of the nucleinic acid these alloxur compounds can be obtained as separate bases known as the alloxur or xanthin or purin bases. These are xanthin, hypoxanthin, adenin, guanin, etc.

These alloxur bases contain, as does uric acid, an alloxur and a urea group united in a definite manner, and, owing to this similarity and the additional fact that they contain less oxygen than uric acid, the hypothesis that the uric acid in the body is formed through the oxidation of these preformed atomic groups which are represented in their separate state by these alloxur bases has been advanced. The failure so far to obtain uric acid by oxidation of these alloxur bases, or these bases by the reduction of uric acid, in the laboratory, and the failure of several observers to obtain in mammals an increase in the uric-acid formation in the body under the exhibition of separate alloxur bases, has led several of these observers, as Fischer and Horbacyewski, to conclude that the uric acid is not derived from the bases themselves but from a common antecedent atomic group in the nucleinic acid molecule to both the alloxur bases and uric acid. Minkowski has, however, in some very recent investigations obtained marked increase in the formation of uric acid in man under the administration of hypoxanthin.

We can therefore to-day consider the hypothesis proven that uric acid is formed in the human body by the oxidation of some of the preformed alloxur bases contained in the nucleinic-acid molecule, introduced in the food. Although some may be formed from a common antecedent of the alloxur bases and uric acid, we know now that such a hypothesis is not necessary to account for the facts.

So far hypoxanthin is the only one of the alloxur bases which has been proven to possess this capacity of being oxidized in the mammalian body to uric acid. Minkowski obtained no increase of uric acid or allantoin in dogs under the administration of adenin.

Nicholas Senn, M.D., LL.D. — The degree of LL.D. was conferred upon Dr. Nicholas Senn by the Jefferson Medical College on May 15th.

WHIPPING AS PUNISHMENT AND PREVENTIVE OF CRIME.

The Psychological Section of the New York Medico-Legal Society had a dinner on May 17th at the Hotel St. Andrew, at which the topic for consideration was "Corporal Punishment for Crime," and nearly all of those who took part in the discussion advocated the affirmative side of the question. Judge Simeon E. Baldwin, of New Haven, expressed the opinion that flogging would often furnish a mode of punishment far more appropriate than fine or imprisonment for minor offences and a useful addition to imprisonment for graver ones, and that, accepting the humanitarian position that the right to punish rests on the duty to educate the ignorant and reform the vicious, the whipping-post was, for many cases, the best incentive to education and reform. Chief Justice Charles B. Lore, of the Supreme Court of Delaware, wrote that the efficacy of the whipping-post lay in the sting attending the public disgrace and ignominy, and that his State had always found this form of punishment the best preventive of crime. Mr. Frank Moss said that he had no doubt that whipping was the proper method of punishment for those offences in which manhood was degraded, and that the perpetrators of wife-beating and cruelty to children could be flogged with benefit to themselves and with the approval of society. Similar sentiments were expressed by Clark Bell, the Secretary of the Society, Judge C. W. Meade, of the Court of City Magistrates, John C. Shortall, President of the Humanitarian Society of Chicago, and others. Magistrate Wentworth, on the other hand, contended that from an ethical standpoint we had outgrown the idea of corporal punishment. The whipping-post, he said, would not be a beneficent institution, and the best of civilized people would not tolerate it.

While we are disposed to admit the claims of the advocates of whipping as a punishment for such offences as wife beating, as calculated to act as a more efficient deterrent from repeating the offence than incarceration, we cannot but enter a protest against the advantages afforded by this new method of punishment being reserved exclusively for the gentler sex. Not infrequently husbands are brought to the casualty wards of our hospitals for treatment of injuries inflicted upon them by their wives in the settlement of some of the little disputes which arise in the conduct of the household, and it seems unfair that in case the husband gains the upper hand he should be punished by flogging, while the wife may disfigure the countenance of her husband, if physically stronger than he, without fear of the law. The Woman's Rights associations should use their influence to see to it that when women are given votes and other masculine perogatives they are at least made amenable to the same punishment for over-violence in managing their families which is meted out to the sex formerly called the sterner.

SANTIAGO SINCE THE SURRENDER.

The last number of *Scribner's Magazine* contains an article by Gen. Leonard Wood, Military Governor of Santiago, with the above title, which gives a most impressive, instructive and at the same time temperate and modest account of the condition of Santiago at the time of its surrender, of the administrative and sanitary work in that province since General Wood's appointment, and of the present civil and hygienic condition of affairs — a condition which represents not merely an amelioration but a revolution, and a revolution which has abolished civil and sanitary crimes not of a few months' or a few years' but of several centuries' duration.

The results which have been accomplished are admirable and astonishing, the account is conspicuous among magazine articles by the very limited pictorial presentation of the writer and chief actor and the scarcity of the pronoun of the first person. Those who wish to know more of the doer, as well as of the deeds, are referred to an article in *McClure* for March and one in the *Buffalo Medical Journal* for April.

General Wood represents at its best the type of man of which our country is going to need many in the administration of the islands for which she has recently made herself responsible, the type of man represented by the Lawrences in India, the type of man which this country does well to honor and will do well to hold up to its youth for imitation. It has been his mission to save life not to destroy it, to prevent disease not to encourage it, to administer even handed justice not to enrich, to aggrandize or avenge himself. And what he has done he has done at the peril of his own life and his own health — not in the heat of battle or during the excitement of a brief period, but during the heat of prostrating fevers and over long weeks and months of self-sustainment.

MEDICAL NOTES.

The Philippine Climate and Certain Diseases. — In the experience of medical officers in the Philippines, diarrhea, dysentery and rheumatic affections can rarely be cured in that climate, and the patients must be returned to the United States for treatment.

The Chicago Society of Internal Medicine. — The annual meeting of the Chicago Society of Internal Medicine will be held Thursday evening, May 25, 1899, at 8 o'clock, in the Hall of the Chicago Medical Society. The programme includes a general discussion on "Prophylaxis and Management of Apoplexy," and the annual election of officers.

Small-Pox Among Our Troops in the Philippines. — The total number of small-pox cases among our troops in the Philippines amounts to 151, with 77 deaths. Of varioloid the cases numbered 85, deaths none. These cases have occurred in spite of thorough and repeated vaccinations, begun in San Francisco and continued on the ocean, and in the face of repeated revaccinations, even now going on.

Heroism of a Naval Surgeon. — In his report of the recent action in Samoa, when both British and American naval officers were killed, Captain White, of the *Philadelphia*, speaks as follows, concerning the conduct of Passed Assistant Surgeon G. A. Lung, United States Navy: "At times when the fire from the concealed natives was thickest, and at all times by his example, he encouraged the young and inexperienced men to the proper performance of their duty. On the completion of the work of his profession he assumed command of our blue-jackets and marched them to the United States Consulate."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, May 24, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 53, scarlet fever 25, measles 105, typhoid fever 5.

The Free Hospital for Women — The Free Hospital for Women has received a gift of $7,000 for the endowment of a bed in memory of Eliza B. Skinner.

Certificates in Medicine. — The Board of Registration in Medicine has issued the certificates of registration to the candidates for registration at the March examination. The certificates have been held back for some time, owing to the suspicion that some of the marks were obtained through having seen advance copies of the examination papers. As our readers have doubtless learned from the daily press, some one secured copies of a decoy examination from the office of a printer who printed them, and sold them to many candidates for registration at the May examination, under the supposition that they were the papers which were to be used at that examination. As they were not so used, those who bought them were so much out of pocket and gained no benefit from them. The May certificates have not been issued yet, as the examination papers have not been marked.

Boston Society of Medical Sciences. — Meetings of the Boston Society of Medical Sciences were held May 9th and May 16th. The meeting of May 9th was devoted to a consideration of Photo-micrography. Mr. W. R. Brinckerhoff demonstrated an anti-vibratory bench, in certain respects original with him. Mr. J. G. Hubbard spoke on the general theory of color-screening and demonstrated the principle involved by means of lantern-slides. Drs. Councilman, Wright, Mallory and Ernst each showed lantern-slides illustrative of various pathological and bacteriological subjects. At the meeting of May 16th Drs. Pfaff and Joslin gave the results of their investigations on the "Influence of Bile on Metabolism." Dr. B. Joy Jeffries read a paper on the "Effect of Light through the Eyelids on After Images in Respect to Brightness and Color." Dr. E. A. Darling spoke on the sterilization of catgut. The other papers were by Dr. W. H. Smith and Dr. C. H. Williams, on "The Influenza Bacillus and Pneumonia," with lantern-slides, and "A New Perimeter," respectively. Dr. F. J. Cotton read by title a paper, "A Study of the Jerking or Trigger Knee."

FIELD DAY OF THE BOSTON CITY HOSPITAL. — The Second Annual Field Day of the Staff of the Boston City Hospital will take place at the Riverside Recreation Grounds, on the afternoon of June 15, 1899. The field day of last year received such general support, and was so successful that it has been decided to repeat it. The trustees and every person who is or has been connected with the hospital, as a member of the staff or as a house officer, is invited and expected to attend. The committee hopes to make this field day an annual event, and to give it a recognized place among hospital affairs. By your support and attendance you will indicate your sympathy with this plan. The sports will be as follows: (1) Base-ball Game (5 innings) between teams representing the Medical and Surgical Departments. Prize: Banner offered by Mr. A. Shuman. (2) Departmental Relay Race (1-2 mile). Prize: Banner offered by Dr. D. W. Cheever. (3) 100 Yards Dash. Prize: Silver Cup offered by Dr. G. H. M. Rowe. (4) Putting the Shot. Prize: Pewter Mug offered by Dr. H. L. Burrell. (5) Swimming Race. Prize: Pewter Mug offered by Dr. J. G. Blake. (6) Three-legged Race. Prize: Pewter Mugs offered by Dr. Paul Thorndike. A lunch will be served in the Club House after the games. Tickets, including fare from Boston to Riverside and return, entrance to grounds, lunch, and all privileges (except canoes), $1.50. For persons not using trains, $1.00. It is hoped that all persons will buy their tickets in advance in order that the committee may make adequate arrangements. Tickets may be procured of R. M. Pearce (to whom all checks should be made out), Boston City Hospital, or from other members of the committee. Trains leave Kneeland St. Station (B. & A.) at 1.32, 1.50, 2.30, 2.40, 3.05 and 3.25 P. M.; from Columbus Ave. Station three minutes later. There will be no postponement on account of light showers. In case of heavy rain the event will be postponed to the following afternoon, June 16th. As the committee are not sure of the correctness of the addresses which they have, some graduates may not receive circulars; but all physicians who are or have been connected with the hospital, either as house officers or members of the visiting staff are expected to attend.

SUFFOLK DISTRICT MEDICAL SOCIETY — The annual meeting of the Suffolk Section of the Massachusetts Medical Society was held on April 29, 1899, and the following papers were read: "Remarks on the Physical Measurements in the Public Schools," by Dr. W. T. Porter; "Variola," illustrated with lantern-slides, by Dr. J. H. McCollom. The usual business was transacted and the following officers elected for the ensuing year: President, H. L. Burrell; Vice-President, T. M. Rotch; Secretary, H. A. Lothrop; Treasurer, Augustus S. Knight; Librarian, B. Joy Jeffries.

SMALL-POX IN SWAMPSCOTT, MASS. — A case of small pox has appeared in Swampscott, Mass., in the person of a shoemaker employed in one of the Lynn factories. All necessary precautions have been taken by the local board of health.

NEW YORK.

THE HEBREW CHARITIES BUILDING. — The extensive new Hebrew Charities Building, at Second Avenue and 21st Street, was dedicated with appropriate ceremonies on May 18th. It is fireproof throughout, and special attention has been given to sanitary conditions in its construction. It is designed to provide (1) accommodation for the relief work of the United Hebrew Charities; (2) convenient offices and meeting rooms for the various societies and committees, and (3) a hall suitable for larger gatherings in support of the interests of these Jewish institutions. The entire building is the gift of Mr. Solomon Loeb.

A LARGE GIFT TO THE WOMAN'S HOSPITAL. — Russell Sage has given $50,000 towards a new building for the Woman's Hospital, of which Mrs. Sage is vice-president. The estimate cost of the building is $400,000, and it is to be erected on the present site of the institution.

DEATH OF DR. MCENROE. — Dr. William H. McEnroe died suddenly at his home in New York City on May 17th. He was born in Charlottesville, August 15, 1854, and was graduated from the medical department of the University of the City of New York in 1882. He was for thirteen years instructor in materia medica and therapeutics at the University, and during this time he published a volume of notes on the lectures of Dr. Wm. H. Thompson, the professor of this branch. It is stated that only a few days before his death Dr. McEnroe had received the appointment to the professorship of materia medica and therapeutics in Cornell University.

OFFICERS OF THE STATE BOARD OF HEALTH. — At the annual meeting of the State Board of Health, held in Albany, May 11th, Dr. Daniel Lewis, of New York, was re-elected president, and Drs. S. Case Jones, of Rochester, and F. W. Smith, of Syracuse, tuberculosis commissioners.

THE BAY RIDGE HOSPITAL. — The Bay Ridge Hospital, Dispensary and Training School for Nurses has been organized for the purpose of meeting the urgent needs of a hospital service for the 30th and 31st Wards of Brooklyn, and Mr. John Reed has offered the free use of a suitable building for five years provided $5.000 is raised by the residents of the district by June 1st.

The Regulation of Dispensaries. — At a meeting of the State Board of Charities held in New York on May 11th the proposed incorporation of the Bethesda Sanitarium and Dispensary was approved. A special committee was appointed to arrange that the managers of all the dispensaries in the State (which have now been placed under the direct control of the Board) should give hearings for the purpose of obtaining opinions in regard to a system of regulations for the government of these institutions.

Dr. Bean Appointed Director of Forestry and Fisheries. — Dr. Tarleton N. Bean, formerly Chief of the Division of Fish Culture of the United States Fish Commission at Washington, and more recently superintendent of the public aquarium of New York City, has been appointed Director of Forestry and Fisheries of the United States Commission to the Paris Exposition of 1900.

The Board of Aldermen and Unlicensed Practitioners.—The Board of Aldermen has passed and sent to the President of the Board of Health a resolution expressing its hearty approval of the efforts of his department to suppress quackery and to discover and bring to book "the persons guilty of the nefarious system of practising medicine without license," and encouraging the board to persevere in the good until the evil shall have been abolished.

Uniforming Empoyees of Bellevue Hospital. — It has been decided by the Commissioner of Charities to put all the employees of Bellevue Hospital, which number about two hundred, in uniform on June 1st. The attendants about the building will have a blue uniform with brass buttons, and the outside laborers will wear light brown canvas suits.

Priority in Instruction in First Aid to the Injured. — A statement having been promulgated that the Chicago, Milwaukee & St. Paul Railway had inaugurated a system of instruction in first aid to the injured among its employees, and that the idea of such instruction for train crews was original with Dr. John A. Thornton, a St. Paul surgeon, Mr. B. F. Bache has sent a communication to one of the daily papers in which he claims this honor for the late Dr. John Van Vorst, of Jersey City, who, he says, at least fifteen years ago (about the year 1883) delivered a series of lectures on this subject to a class of Pennsylvania Railway employees.

The Psychic Study Club. — The new Psychic Study Club held its second meeting on May 18th. In opening it, the president, Henry Frank, laid stress on the absolute impartiality and freedom from prejudice with which it was proposed by the founders of the club that the examination of psychic phenomena should be approached. Prof. John D. Quackenbos, of Columbia University, spoke of recent developments in the study of hypnotism and detailed a number of experiments made by himself. W. E. Robinson, who was formerly an associate of Herrmann, the magician, made an *exposé* of "spirit" slate writing, and showed by actual demonstration how easily the results attained by professional mediums could be produced by ordinary sleight of hand.

Commencement Exercises of University and Bellevue. — The first annual commencement exercises of the consolidated University and Bellevue Hospital Medical College were held in the Metropolitan Opera House on May 16th. Chancellor Mac Cracken presided, presenting the diplomas and awarding the prizes for proficiency, and the Rev. Dr. David J. Burrell delivered the address to the graduating class, which numbered one hundred and sixty. In the course of it he alluded in strong terms of condemnation to the Christian Scientists. "Pain," he remarked, "is a very real thing, and the penitentiary is not too much for those who say it is not."

The Long Island College Hospital. — The fortieth annual commencement of the Long Island College Hospital was held in the Academy of Music, Brooklyn, on May 16th. Out of a class of one hundred and eight only sixty were allowed to receive diplomas, twenty-five having been conditioned on the final examination, and the remaining twenty-three rejected unconditionally. Among those who were fortunate enough to be graduated was Prince Franz von Auersperg, a young Austrian of high rank, who, it is stated, is shortly to be married to a daughter of Mr. E. C. Hazard, of Shrewsbury, N. J.

A Gift to the Hoagland Laboratory. — It is announced that the trustees of the Hoagland Laboratory, connected with the Long Island College Hospital, have received from an unknown donor a gift of $25,000 for the endowment of a fellowship in the department of pathology, to be known as the Van Cott Fellowship, in honor of Dr. Joshua Van Cott, the director of the laboratory. The net annual income of the securities presented, which amounts to $1,250, is to be used for paying the expenses of the beneficiary of the fellowship, each year, and if there should be any surplus it is to be expended in purchasing new apparatus for the laboratory. By the terms of the gift it devolves on the director of the laboratory to appoint the beneficiary, and Dr. Van Cott has selected his assistant, Dr. Archibald Murray, for the fellowship.

The Pharmaceutical Clerks' Association. — The drug clerks of the city, at a meeting held May 15th, in the College of Pharmacy building, formed a new society, which is to be known as the Pharmaceutical Clerks' Association. By an almost unanimous vote it was resolved to urge Governor Roosevelt to veto the bill recently passed by the Legislature fixing shorter hours for drug clerks, it being the desire of the members, not for shorter daily hours but for such a division of the hours of labor as will give them more days and evenings off duty. In the meanwhile the older druggists' league for shorter hours has been indefatigable in urging the Governor to sign the bill, and Mr. Roosevelt, being much perplexed by this diversity of opinion among the clerks themselves, has commissioned Jacob A. Riis to make such an investigation of the whole matter as will enable him to decide intelligently in regard to it.

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Miscellany.

HOSPITAL FACILITIES NEAR MANILA.

A report on the hot springs at Los Banos, five hours' ride north of Manila, calls attention to the excellence of the buildings, at that place, abandoned by the Spaniards. The baths are in good repair, lacking only the few pipes and faucets removed by the insurgents. The surrounding country rises rapidly from the shores of Lake Laguna de Bay to a height of 400 to 700 feet. The drainage is good and the place has the reputation of being always cool. A hot-water spring is conducted by a natural conduit to near the former Spanish hospital, whence it is conducted to the hospital itself. The temperature of the water is so high that it furnishes steam vapor for the bath-house and where it empties into the lake the natives use it to scald their chickens. The volume is about 10,000 gallons per diem. There are here four classes of water from different springs, all medicated — one being sulphurous. An excellent water supply of clear cold water is available for use in the hospital, which is solidly constructed, having a galvanized iron roof, and affording ample accommodations for four hundred beds.

A communication from the commanding officer of the Convalescent Hospital, Corrigedor Island, at the mouth of Manila Bay, recommends that the large tent hospital, now on that island, be converted into a frame hospital before the beginning of the rainy season. Corrigedor is much cooler and more salubrious than Manila and the Spaniards had lately recommended that a "camp of acclimatization," for troops arriving from Spain, be established there. For the four months since the opening of the hospital the average temperature has been 80° F., a. m. and p. m. observations being taken. The maximum temperature was 82° F and the minimum 78° F., the constant breeze so tempering the heat as to render it always comfortable. Excellent building sites of almost unlimited extent are available, having an altitude of several hundred feet, a broad prospect, and plenty of large trees to furnish shade and protection from the winds. An excellent macadamized road leads to this hospital site. The surface drainage is excellent. All refuse and excreta are collected twice daily, and thrown into the sea. A large stream furnishes an adequate supply of excellent water, which suffices also for the laundry, baths and irrigation of the street and grounds. Corrigedor Island possesses the great advantage of being entirely Government property.

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THE NEW YORK CANCER HOSPITAL.

Apropos of a recent newspaper discussion the following declaration of policy has been issued by the New York Skin and Cancer Hospital:

Whereas public appeals are being made for funds to establish and support a "Home for Cancer Incurables," and some of these appeals are in substance and form such as possibly to create a wrong impression regarding the purposes and work of our own institution; and

Whereas it is expedient that we should leave no uncertainty in the public mind regarding our work and the tests by which alone it may fairly be judged; now, therefore, it is

Resolved: That we, the Board of Governors of the New York Skin and Cancer Hospital, in regular meeting, adopt the following propositions as a minute declaratory of the institution's policy in regard to so-called incurable cases of cancer.

We are a free hospital for cancer as well as for skin diseases.

Admittance to clinics or general wards is in no case conditioned solely on ability to pay; nor is a patient ever discharged for mere inability to pay. The only payment that is ever requested is a small sum for board. A ward patient who pays a dollar a day is officially reported as "full pay." Only a small proportion of our patients has at any time belonged to this class. The management has in mind its obvious duty to its patrons, its beneficiaries, the medical profession and to society at large in pursuing this course. By far the greater part of our patients pay little or nothing, and the Board recognizes that this must continue to be true.

We are a hospital, and as such exist primarily to afford facilities for the scientific treatment of specific diseases, and only secondarily (if at all) to receive sufferers who require tender care but are presumably or demonstrably not susceptible of cure or betterment.

Throughout our history we have recognized that it is a part of our privilege and duty to pursue the scientific study of cancer with a view to removing the present dead-line of incurability. It is therefore neither our policy nor our practice to reject all inoperable cases; in fact, we have nearly always had some such among our absolutely free patients.

We maintain a staff of recognized specialists in medicine and surgery, who are wholly unpaid. If we permitted the hospital to become a mere home for incurables we could not retain the services of these physicians. Their presence would not be needed and their observations would not benefit science or society. So long, therefore, as our endowment and contributions are inadequate to maintain the much-needed and acknowledgedly more valuable hospital service we must continue to limit our ward service primarily to curable and improvable cases.

We recognize the need of some proper charitable accommodation for indigent sufferers who are beyond hospital treatment. We would welcome the wise establishment of such an institution on a thoroughly liberal basis. For years we have been appealing generally for money in behalf of cancer sufferers. Friends have, to some extent, come forward to perfect and enlarge our hospital plant; and we are still laboring at this, which we regard our first duty. We have not yet been placed in a financial position justifying our undertaking the supplemental work of exclusively incurable wards. If charitable people wish to entrust this particular work to others we do not complain, we only remind them that no amount or kind of provision for incurables can remove or even diminish the pressing necessity for strictly hospital facilities. Indeed, the very fact of the demand for a home is the best proof of the need for larger and better hospital service to check, if possible, the increasing ravages of the disease.

Fulton McMahon,
J. E. Janvrin, M.D., } *Committee.*

New York, April 21, 1899.

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THE BRITISH WAR OFFICE AND THE RED CROSS.

An important step in the organization of Red Cross Aid, in order that in time of war it may be become a more efficient auxiliary to the Army Medical Service has been taken by the British War Office, the following account of which is taken from the London *Daily Telegraph* of April 27th. In view of the importance of the work of the Red Cross associations in our recent war with Spain, and of the well-known fact that this co-operation might have been made more effective, at least in the early part of the war, by more intimate relations and co-operation with the War Department, the steps taken by the British War Office are of great interest, and appear to be founded on good judgment. As the *Telegraph* states:

"In great international wars the duties of the regular medical service of the army are naturally considerably increased, and it is now not only generally recognized that voluntary aid as a means of meeting this extra strain is indispensable, but it is also most desirable that every facility should be afforded by the military and naval authorities for giving practical effect to the undoubted national sympathy with the sufferings, resulting from wounds and disease, of our soldiers and sailors engaged in war.

"The voluntary aid, however, which popular sentiment elicits, and which would be forthcoming in abundance from every corner of the Empire in the event of our country being involved in a great war, would come upon our military authorities in the form of a mass of more or less unorganized and untrained elements, probably so unsuited to the actual requirements of the Army Medical Service as, for a time at any rate, to considerably hamper and embarrass its administration. In the great armies of the continent much of this has been foreseen, and voluntary aid organization, under national central committees of the Red Cross, has attained a high state of perfection, and is permanently kept in touch with the organization of the regular Army Medical Service in such a way as to enable the latter to know exactly the amount, nature, and condition of the supplementary aid that will be available from voluntary sources in time of war.

"With the view of obtaining similar results in this country, Lord Lansdowne some time ago invited representatives of the National Society for Aid to the Sick and Wounded in War, the St. John Ambulance Association, and the Army Nursing Reserve to meet the heads of the Army Medical Service, and discuss with them the lines upon which a central organization for bringing voluntary aid throughout the British Empire into touch with army medical requirements might be created. As an outcome of this conference, a Central British Red Cross Committee has been formed, and has now been recognized by the Secretary of State for War as the official channel through which offers of voluntary aid in time of war will be accepted by the War Office.

". . . It is hoped that ultimately the formation of this Central British Red Cross Committee will have the effect of bringing local committees of the societies which are or may be represented on the Central Committee and established throughout the Empire into touch with the conditions which the military authorities must of necessity impose upon the popular desire to aid the sick and wounded. It is felt that throughout her Majesty's dominions the resources of voluntary aid are very large, but that some organzied effort is necessary in this country to enable full effect to be given to the humane impulses upon which they are based, and to make them conform to the principles that have been formulated in the Geneva Convention under the emblem of the Red Cross."

Obituary.

FRANCIS MINOT, M.D.

The recent death of Dr. Francis Minot at the home of his daughter in Readville has taken from Boston one who for many years was among its best physicians. For the last few years of his life he did not practise his profession, and therefore some of its youngest members only knew him by reputation, but a great body of medical men living not only in Massachusetts but in other States have gained under his teaching something more than instruction in medicine.

Born in Boston, in 1821, taught in Boston schools and Harvard College, from which he was graduated A.B. in 1841 and M.D. in 1844, broadened by years of study in Europe he represented what is best in our community, inheritance, education, cultivated tastes, a wise judgment, and, under all, character.

From 1859 to 1886 he was in active service as physician at the Massachusetts General Hospital, and from 1886 until his death he was one of the consulting physicians. He was instructor in the theory and practice of medicine at the Harvard Medical School from 1869 to 1871, assistant professor in that department from 1871 to 1874, and Hersey professor from 1874 to 1891. In 1871 he was also clinical lecturer on the Diseases of Women and Children. In 1860 he received the degree of A.M. from Trinity College, Hartford.

His large experience at the hospital and in private practice in conjunction with his wide attainments made him an excellent teacher. His many valuable medical papers covered not only the subjects which claimed his special interest, but also wider topics, such as "The Importance of Estimating the Average Duration of Disease," "Cases of Pulmonary Consumption followed by Recovery or Arrest of the Disease," "The Treatment of Acute Pneumonia."

In 1878 he gave the annual discourse before the Massachusetts Medical Society, choosing for his subject: "Hints on Ethics and Hygiene." In 1889 he was president of the Association of American Physicians and delivered the annual discourse. In 1891 he gave, by invitation, an address before the Rhode Island Medical Society.

Dr. Minot was a devoted and concientious physician, and his training fitted him to become an excellent practitioner, tactful, wise and resourceful. The following incident illustrates this last characteristic: Before the days of apomorphine he was called to see a young lady who had taken poison with suicidal intent and who refused to swallow an emetic. He then had brought to her room two coal heavers from a neighboring wharf on Charles Street and gave her the choice of taking the emetic or being held by the coal heavers while it was poured down her throat. The patient consented to follow the directions of her physician.

He was treasurer of the Massachusetts Medical Society from 1863 to 1875; he was one of the founders of the Medical Benevolent Society and its treasurer for many years. He took an active interest in work allied to his profession, and was from 1885 to 1895 president of the Massachusetts Emergency and Hygiene Association.

Dr. Minot was fortunate in having a sense of humor, a love of nature and of music, and a manner most courteous and kind. He was a man of high ideals, and to a remarkable degree considerate and charitable in his opinions of others.

There must always be something unusual in one who could do what he did in the way he did it. We have abundant examples of men who have achieved success but whose methods and motives do not command our respect; his were of the best and highest, and the more those of us who had the privilege of knowing him and who were guided by his counsel consider his life, the more do we appreciate the fine character and ability which gave him the affection, respect and esteem of all both in and out of the profession.

METEOROLOGICAL RECORD

For the week ending May 13th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....7	29.98	66	82	51	58	49	54	W.	S.	12	6	C.	C.	
M...8	29.90	55	62	48	60	87	74	N.E.	N.E.	24	10	O.	O.	
T....9	29.79	55	62	48	90	51	70	N.	N.W.	12	10	O.	C.	.04
W..10	30.08	60	70	50	35	44	40	N.	S.	10	10	C.	C.	
T...11	29.87	62	72	51	33	85	59	W.	W.	13	9	F.	O.	.06
F...12	29.87	62	73	52	49	33	41	W.	N.	18	8	C.	C.	.03
S...13	30.00	62	70	54	41	67	56	E.	S.	6	10	F.	R.	
☞														.13

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, May 13, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup
New York . .	3,438,899	1164	377	8.40	17.04	1.04	.48	2.56
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	427	92	13.11	11.04	1.15	6.16	3.45
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	193	50	7.80	23.92	—	2.08	2.60
Baltimore . .	506,389	200	61	4.00	11.50	1.50	—	2.00
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	97	33	14.42	11.33	4.12	6.18	—
Washington .	277,000	93	19	6.42	8.56	—	—	1.07
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	76	14	6.60	10.56	—	1.32	1.32
Nashville . .	87,754	28	8	10.71	17.85	7.14	—	—
Charleston . .	65,165	44	19	31.78	—	15.89	2.27	—
Worcester . .	108,240	38	11	2.63	7.89	—	—	—
Fall River . .	95,919	29	14	7.32	6.88	7.32	—	—
Cambridge . .	89,724	24	12	8.32	24.96	—	—	—
Lowell . . .	88,641	35	17	17.16	14.30	—	2.86	—
Lynn	66,703	18	3	5.55	—	—	—	—
New Bedford .	66,340	17	5	—	5.88	—	—	—
Somerville . .	61,101	12	2	—	41.16	—	—	—
Lawrence . .	57,263	22	16	12.45	16.60	—	4.15	4.15
Springfield . .	56,501	12	5	8.33	8.33	—	—	—
Holyoke . . .	43,424	13	5	—	—	—	—	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem. . . .	36,883	7	1	14.28	—	—	—	—
Malden . . .	34,613	6	2	—	33.33	—	—	—
Chelsea . . .	33,468	16	5	12.50	6.25	—	6.25	—
Haverhill . .	32,022	7	1	—	28.56	—	—	—
Gloucester . .	30,589	4	1	—	—	—	—	—
Newton . . .	29,716	4	—	—	25.00	—	—	—
Fitchburg . .	29,438	8	6	12.50	—	—	—	—
Taunton . . .	28,167	11	3	—	27.27	—	—	—
Everett . . .	25,338	5	2	20.00	—	20.00	—	—
Quincy . . .	23,549	1	1	—	—	—	—	—
Pittsfield . .	22,643	6	—	—	33.33	—	—	—
Waltham . .	21,812	3	—	33.33	—	—	33.33	—
North Adams .	20,971	7	2	—	14.28	—	—	—
Chicopee . .	17,842	6	3	—	33.33	—	—	—
Medford . . .	16,511	5	1	—	20.00	—	—	—
Newburyport .	14,915	2	—	—	—	—	—	—
Melrose . . .	14,032	4	2	—	—	—	—	—

Deaths reported 2,654; under five years of age 795; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 252, acute lung diseases 405, consumption 335, diphtheria and croup 59, typhoid fever 45, diarrheal diseases 38, measles 32, cerebro-spinal meningitis 31, whooping-cough 19, scarlet fever 18, erysipelas 10.

From measles New York 18, Charleston and Lowell 4 each, Boston 2, Providence, Cambridge, Lynn and Salem 1 each. From cerebro-spinal meningitis New York 9, Philadelphia 7, Washington 5, Boston and Charleston 2 each, Baltimore, Nashville, Worcester, Lowell, Chelsea and Quincy 1 each. From whooping-cough New York 10, Philadelphia and Pittsburg 2 each, Cambridge, Lawrence and Fitchburg 1 each. From scarlet fever New York 13, Philadelphia 3, Pittsburg and Providence 1 each. From erysipelas New York and Philadelphia 3 each, Boston 2, Providence and Springfield 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending May 6th, the death-rate was 16.5. Deaths reported 3,616; acute diseases of the respiratory organs (London) 251, whooping-cough 114, measles 91, diphtheria 57, diarrhea 28, scarlet fever 25, fever 22, small-pox (Hull) 2.

The death-rates ranged from 9.8 in Derby to 22.3 in Plymouth; Birmingham 16.6, Bradford 18.8, Cardiff 10.9, Gateshead 13.2, Hull 17.6, Leeds 18.5, Liverpool 20.6, London 16.0, Manchester 20.3, Newcastle-on-Tyne 17.3, Nottingham 15.2, Salford 19.8, Sheffield 14.6, Swansea 14.1, West Ham 10.6.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 20, 1899.

S. B. Palmer, assistant surgeon, resignation accepted from May 15th.

APPOINTMENT.

Edward A. Pease, M.D., has been appointed surgeon to outpatients to the Free Hospital for Women.

SOCIETY NOTICE.

American Medical Editors' Association. — The annual meeting of the Association will be held in Columbus, O., on Monday, June 5, 1899, the day immediately preceding the opening of the annual meeting of the American Medical Association.

The session will be called to order at 2 o'clock p. m., in the Hall of the Y. M. C. A. building Dr. Thomas H. Hawkins, Denver, Col., is president, and Dr. Dillon Brown, New York City, secretary.

RECENT DEATH.

William Edward Sparrow, M.D., M.M.S.S., died in Mattapoisett, May 15, 1899, aged seventy-five years.

BOOKS AND PAMPHLETS RECEIVED.

The Phonographic Record of Clinical Teaching and Medical Science. London, E. C.: Sir I. Pitman & Sons. 1899.

The Shape and Position of the Stomach. By Henry Wald Bettman, B.L., M.D., Cincinnati, O. Reprint. 1899.

Notes on the Absorption *Versus* the Digestion of Milk. By L. Duncan Bulkley, A.M., M.D., New York. Reprint. 1899.

Traumatism of the Eyeball Involving the Crystalline Lens. By Cassius D. Wescott, M.D., Chicago, Ill. Reprint. 1899.

Sixteenth Annual Report of the Superintendent of Health of the City of Providence, for the year ending December 31, 1898.

The Massachusetts Medical Society: By-Laws, Officers and Members of the Middlesex South District Medical Society. 1899.

Annual Reports of the Bureau of Health of the City of Denver for the years 1897–1898. William P. Munn, M.D., Health Commissioner.

Dermatitis Venenata: A *Résumé* of its Etiology, Symptoms, Diagnosis and Treatment. By Jacob Sobel, M.D., New York. Reprint. 1898.

Corpulence and the Fatty Heart. Pericardial Diseases, Illustrated Clinically. By Thomas E. Satterthwaite, M.D., New York City. 1899.

Twenty-third Annual Report of the Managers and Officers of the New Jersey State Hospital at Morris Plains for the year ending October 31, 1898.

A Series of Nine Abdominal Pan-hysterectomies Performed in One Year for Uterine Fibromyoma. By F. A. L. Lockhart, M.B., Edin. Reprint. 1898.

Infection from the Hands in Phthisis. Infection from the Hands in Pulmonary Phthisis. By E. R. Baldwin, M.D., Saranac Lake, N. Y. Reprints. 1898.

Perichondritis and Necrosis of the Arytenoid Cartilage. The Progress of Rhino-laryngology. By W. Scheppegrell, A.M., M.D., New Orleans, La. Reprints. 1898-99.

Forty-seventh Annual Report of the New York Juvenile Asylum to the Legislature of the State and to the Municipal Assembly of the City of New York for the year 1898.

Superintendent's Annual Report of the Wyoming General Hospital, Rock Springs, Wyoming. Annual Report of the Medical and Surgical Cases Treated during the Fiscal Year commencing October 1, 1897, and ending September 30, 1898. Reprint. 1899.

Original Articles.

X-RAY EXAMINATIONS AN AID IN THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.[1]

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

It is well understood that the most important step in the cure of many diseases is their early recognition. A striking example of this is the cure of more than nine-tenths of the patients who have diphtheria, when they are properly treated in its very earliest stages. While we have no drug like antitoxin with which to treat pulmonary tuberculosis, it is universally recognized by those who have had a large experience that in a considerable proportion of patients, provided this disease is recognized in its earliest stages, success even in our climate follows suitable hygienic and dietetic treatment if intelligently and persistently carried out; therefore any method which helps us to an early diagnosis is valuable.

Hitherto we have depended for early indications of this disease upon, for example, loss in weight, a slight daily rise in temperature, anemia, a disordered digestion, a rapid pulse, etc.. Only one or two of these symptoms may be present in any one case, and they may be due to other causes than tubercle bacilli; but if to some of these be added a morning cough or hemoptysis, we have more reason to suspect the lungs as being the seat of disease, and still more if we find râles or signs of consolidation at the apex of one lung; expectoration if found to contain bacilli establishes the diagnosis; but these latter signs and symptoms occur often in a somewhat later and more marked stage of the disease than the one I am about to consider.

The signs to which I wish to again direct the attention of the profession are those seen by means of an x-ray examination, for in some cases an abnormal condition of the lungs may be observed with the fluorescent screen before many of the above signs have appeared. We may thus detect indications of a departure from the normal in the lungs of patients in whom this disease was previously unsuspected, or in whose lungs the signs had been overlooked by auscultation and percussion. The attention having been directed to a certain portion of the lungs by means of the fluoroscope, an increase in the fremitus or prolonged expiration may be observed which had not been noticed previously.

I shall present briefly, as examples of the use of x-ray examination in early pulmonary tuberculosis, two groups of three cases each, taken from a larger number:

(1) Those in which there were râles or cough or expectoration.

(2) Those in which there were *no* râles or cough or expectoration.

The signs obtained by me through auscultation and percussion in a number of my patients were essentially the same as those obtained by other physicians from our own or other States, who had come to see my methods of x-ray examination. The diagnosis was confirmed in all these cases later by finding tubercle bacilli or by the tuberculin test. I will now outline briefly three cases in which there were cough or râles in addition to other signs of pulmonary disease.

First Group. — In this first patient the difference between the signs by auscultation and percussion and the x-ray examination is not as marked as in some others; from the latter, however, it would be fair to suspect the right apex also, though there were no physical signs on that side.

J. H., twenty-three years old; at Boston City Hospital November 1896; cough for about one year; yellow expectoration with some blood occasionally; no loss in weight, no night sweats.

Physical Examination of Lungs. — Slight dulness at *left* apex front and back, occasional moist râles, voice sounds slightly increased, prolonged expiration.

X-Ray Examination. — The apices of *both* lungs as far as the second rib darker than normal. Excursion of the diaphragm on the right side 2¼ inches, on the left side 1½ inches. (The average excursion in health in 45 adults was 2½ inches on the left side and ⅕ inch more on the right; in younger adults the excursions were greater than in the older.) Eight days later a second x-ray examination was made, which corresponded with the first. Tubercle bacilli were found.

In the following case I should have made the diagnosis of chronic bronchitis but for the x-ray examination; the appearances thus observed were confirmed later by finding the tubercle bacilli.

T. E., chronic bronchitis, fifty-six years old. Entered the City Hospital February, 1897. Good family history. Husband died of consumption. Present illness: cough for some months, considerable expectoration, especially in the morning; no pain; dyspnea on exertion, weakness.

Physical Examination of the Lungs. — Chest walls thin. Both chests hyper-resonant in front and back; breathing rather harsh; expiration prolonged, a few coarse, moist râles in backs.

An *x-ray examination* made at this time showed that the diaphragm moved on the right side 2 inches and on the left side only 1¼ inches. No bacilli were found in the expectoration.

In January, 1898, she returned to the hospital. She had had several small hemoptyses; there were indefinite physical signs in both apices behind.

An *x-ray examination* showed a very limited movement (less than half an inch) of the diaphragm on the left (before, it had been 1¼ inches), and the whole of the left lung less clear than the right, and the movement of the *right* side was only 1¼ inches, where it had been 2 inches eleven months before. The apex of the right lung also was darker than normal. Tubercle bacilli were found.

J. G., twenty-eight years old, a patient who was referred to me for an x-ray examination by Dr. H. D. Arnold. The history indicated tuberculosis, but though the patient had caught cold six weeks before, and had had a cough and severe attacks of hemoptysis afterwards, the physical signs were indefinite.

By Dr. Arnold's physical examination the signs pointed to the *left* apex as the seat of the disease. There was slight dulness, diminished and harsh respiration, and slight increase in tactile fremitus in front. Two other excellent physicians also chose the left rather than the right side as the one on which the disease was chiefly located.

An *x-ray examination* indicated that the *right*, not the left, side was the chief seat of the disease. The lung from the apex nearly to the nipple line was, even to untrained eyes, obviously darker than the left side, and the excursion of the diaphragm was less on the right side than on the left side (1¾ inches on the right, 2½ on the left side). Ten days later the second *x-ray examination* showed the same appearances at the right apex. The excursion of the diaphragm was 2 inches on the right and 3¼ inches on the left.

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[1] Read before the Boston Society for Medical Improvement, February 27, 1899.

This patient entered the hospital and was in my service for a week. Several physical examinations were made, always showing slight signs only; no râles were heard except once, when my house physician, Dr. Cronin, found a few in the right back below the scapula. The diagnosis was confirmed by finding tubercle bacilli.

These first three cases show that more marked and definite signs may be found in the lungs by an x-ray examination than by auscultation and percussion, and one of them, that the physical signs and history may lead the physician to think that he has to do with a chronic bronchitis, for instance, when an x-ray examination suggests pulmonary tuberculosis.

Second Group. — I will now outline three cases in which there were not marked signs in the lungs by physical examination. X-ray examinations showed an abnormal condition of one lung and reaction to the tuberculin test showed the presence of tuberculosis.

The following patient had no signs in the lungs by auscultation and percussion.

M. T., twenty years old. Entered the Boston City Hospital April 21, 1897.

Diagnosis. — Phlebitis of the leg, anemia.

Family history: Two sisters died of phthisis. Personal history: Five weeks ago had pain in right calf; two weeks ago pain in left side, worse on breathing. Heart area, action, and sounds normal. Lungs, good resonance and respiration over all.

May 12th. *X-ray examination* showed right apex darker to third rib; excursion of diaphragm, right side 1¾, left side 2 inches.

May 22d. Tuberculin given. Temperature 104°. A well-marked reaction followed.

May 27th. Nothing found in lungs. Murmur over base of heart. No cough. Well developed and well nourished.

June 12th. Several physical examinations of lungs give no evidence of tuberculous process. Resonance and respiration good. Patient has a pale, pasty look, is short of breath, and still rather weak.

F. A., nine years old, school boy.

Diagnosis. — Typhoid fever.

Family history good. Personal history: Had diphtheria three years ago, otherwise has always been well. For the past month has felt poorly; went to bed a week ago; complains of pain in the epigastrium and in front of chest. Has headache and feeling of weakness. Appetite poor and sleeps poorly. No chills, no nosebleed, no cough. Well-developed and well-nourished boy in excellent general condition. Color good. Sent to the hospital with the diagnosis of typhoid fever; had at entrance a temperature of 100°; pulse 108, regular and rather weak. Enlargement of the spleen, questionable; no rose spots. Serum reaction negative. Liver dulness from sixth rib to one finger's breadth below costal border.

Lungs: In right apex in front and behind there is an increase in vocal resonance and fremitus and whispered bronchophony. Lungs otherwise normal. No change in percussion note and no râles heard.

November 18th. By percussion over the heart the dull area was found to be increased to the right, but in a few days this enlargement disappeared. The temperature had run a slightly elevated course, 99° morning, 100° evening, for some days; this is, I think, suggestive of tuberculosis.

November 22d. *X-ray Examination.* — The right lung above the fourth rib not so bright as left. Excursion of diaphragm shorter and higher up on right side than on left side, 1¼ inches on the former, 2 inches on the latter. Heart enlarged to right.

November 27th. One milligramme of tuberculin given. No reaction.

December 1st. Three milligrammes of tuberculin given at 6 P. M. The following day at 11 A. M., temperature 102.5°; marked malaise.

December 3d. Second *x-ray examination* ten days after first; signs of the two corresponded.

December 5th. Was discharged, having been up and about the ward for some time. General condition good. No cough, and appears perfectly well. Sleeps well; appetite good; color excellent. This patient was in the hospital eighteen days under careful observation.

On February 27, 1899, he came to me for another *x-ray examination.* I found the upper portion of the right lung darker than the left, and the excursion of the diaphragm on the right side 1¼ inches, on the left side 1⅞ inches. There was some dulness by percussion over the upper portion of the right lung in front. His condition was, I think, not quite as good as when I saw him in December; he looked a little pale.

In the next patient, my only reason for making an x-ray examination was to determine the size of the heart, and while doing this I saw that one lung presented the appearances found in early tuberculosis.

F. J. M., twenty-four years old.

Diagnosis. — Acute articular rheumatism, cardiac. Admitted to the Boston City Hospital December 2, 1898.

Family history negative. Personal history: Was in the hospital with acute articular rheumatism in June, 1898, for two weeks, and again in July and August, 1898, for four weeks. Lungs were then normal; temperature such as might be expected with rheumatism, not suggestive of tuberculosis. After discharge from the hospital in August his ankle continued to trouble him, but he kept at work until the middle of November. Then both ankles were painful, and the right wrist was also affected.

December 2, 1898. Says he has felt feverish and slept poorly on account of pain; no headache, no cough, appetite good.

Physical Examination. — Well-developed and well-nourished man, general condition good. Pulse 76. Lungs: Resonance and respiratory sounds normal.

December 17th. *X-ray examination,* in order to determine the size of the heart. Heart shows some enlargement both to right and left. Noticed while examining this organ that the right lung, from the apex as far as the third rib, was darker than normal, and the excursion of the diaphragm was diminished on this side, being 2¼ inches on the right side, and 3 inches on the left side.

On the same day the physical examination *after* x-ray examination showed that expiration was somewhat more marked in right apex in front. Tactile fremitus was slightly increased in right back between scapula and vertebral column. Patient, when asked if he had not lost in weight during past few months, thought that he had. Three attacks of rheumatism would account for this.

December 22d. One milligramme of tuberculin given. No reaction.

December 27th. Three milligrammes of tuberculin given. No reaction.

December 30th. Five milligrammes of tuberculin given; reaction well marked. Temperature 102.5°, with malaise.

December 30th. Morning and evening temperature for three weeks 98–99°. No cough at any time.

January 2, 1899. Prolonged expiration, slight increase in tactile fremitus in right back between scapula and spine, opposite spine of scapula.

January 2d. Discharged. His appearance at this time was that of a well man.

Physical examination of lungs as on December 17th.

In March, 1899, since this paper was read, the patient had another attack, and returned to the City Hospital. He was under Dr. V. Y. Bowditch's care.

Diagnosis. — Rheumatism. With Dr. Bowditch's permission I insert here the note he made of his physical examination of the lungs:

"Percussion note is slightly high in pitch, and slight dulness at right apex to third rib in front, and spine of scapula behind. No change in respiratory murmur and no râles. Resonance and respiration good over balance of chest."

In March, 1899, I made another *x-ray examination* and found the same darkened area of the lung and shortened excursion of the diaphragm as on December 17, 1898.

It is a serious matter for the patient to be told that he has trouble in his lungs, as well as for the family and friends, but it is much more serious if the physician fails to make an early diagnosis in pulmonary tuberculosis. The x-ray examinations assist us to do this in some cases and enable us to recognize the disease where, but for this method, it would be overlooked. I will say again, as I have said before, that a diagnosis of pulmonary tuberculosis is not made by the x-ray examinations alone, but with good apparatus and experience we can recognize early by its means certain departures from the normal in the lung. In many patients a correct estimate of the cause of the conditions present is difficult, as abnormality of the lungs may be due to other causes than tuberculosis, — convalescence from pneumonia, or sometimes from typhoid fever, for example, — and may disappear after a time. Two x-ray examinations should always be made, with an interval of some days at least between them. As in auscultation and percussion, experience is necessary to interpret the signs seen in the fluroroscope.

In an earlier paper I suggested that the increase in density of the lung, which makes a darker area on the screen, is not necessarily wholly an area of tuberculous lung, but may at first be largely due to the presence of congestion or serous exudation, as suggested by tests made in 1896.

A definite diagnosis is made by finding the bacilli, but this we cannot always succeed in doing. I recall, among others, a patient in whom pulmonary disease was found while he was under my care for another serious disease, and from the earliest opportunity bacilli were sought for with the microscope. He died of tuberculosis; though more than twenty examinations were made, tubercle bacilli were never found. Again, in some of my patients, who proved later to have tuberculosis, an x-ray examination showed signs in the lungs before there was cough, that is, before expectoration could be obtained for microscopical examination.

I would point out that the x-ray examinations, besides aiding us to an early diagnosis, assist us to determine whether the disease is localized or disseminated, and how extensively the lung or lungs are involved, and help the physician to decide whether the patient should go away or remain at home. Also in acute tuberculosis we may be warned of the rapid progress of the disease by making two or three x-ray examinations at intervals of a week or two and thus recognize the serious character of the attack. We should expect to find an increase of temperature in such patients.

There are also cases in which, though the symptoms and physical signs indicated pulmonary tuberculosis, an x-ray examination showed normal lungs. This led me to state that these patients were probably not suffering from this disease, and the subsequent history or the tuberculin test indicated that the interpretation of the appearances on the fluorescent screen was correct. Many persons dread pulmonary tuberculosis, or fear they have it on account of the family history, or because they suffer from debility, or have had a persistent cough, or other symptoms which have aroused suspicion in their minds or in the minds of their physicians. To such individuals the assurance which careful x-ray examinations can give, in connection with other signs and symptoms, that the lungs are normal as seen by the fluoroscope is a great relief.

In another paper I called attention to the value of these examinations for life insurance; they can be made with little inconvenience, as it is not necessary to remove the clothing.

Dr. Abbott has pointed out that the Board of Health reports for the State of Massachusetts show that, out of 1,000 persons dying in this State between twenty and thirty years old, 597 die of tuberculosis of the lungs, that is, nearly 6 out of 10. The importance of careful x-ray examinations, especially among those between these ages and younger, will, I believe, be appreciated before long, particularly by people who may have any predisposition to the disease. As a precaution, we have our teeth examined once in a few months; the lungs are certainly as well worthy of careful oversight as the teeth.

To conclude: I do not advocate giving up any other methods for making an early diagnosis,— we need all the aids we can have, — but I do strongly urge the addition to them of careful x-ray examinations, and I desire to emphasize the value of this method as a means of indicating early certain abnormal conditions of the lungs. We have two methods of examining the heart and lungs — auscultation and percussion. Each of these in suitable cases gives valuable information; they require a trained ear and experience with many patients to make them serviceable. In some cases auscultation is of the greater value, in others percussion; more frequently they are best when used together. To these we may now add a third method, which also requires special training, that of x-ray examinations. There are diseases in which each of the three methods may render the chief service, and each may in other cases be of little value. Usually, they should be used together: each supplements the other.

It seems well to repeat again, that even *fear* of burns in the use of x-ray examinations is unnecessary. I have made more than 2,000 of these examinations and no patient has received any burn or even inconvenience from them. Simple precautions, which may easily and should always be taken, prevent any *risk* even of injury.

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FOREIGN BODIES IN THE LARYNX IN CHILDREN.[1]

BY J. PAYSON CLARK, M.D., BOSTON.

Foreign bodies, as one would naturally expect, enter the air-passages in children much more frequently than in adults, the proportion being nearly two to one. Anything which causes a sudden strong inspiration, such as laughter, cough, fright or a blow on the back, while an object is in the mouth, favors its passage into the glottis. A foreign body entering the glottis may be arrested there or may pass on into the trachea or a bronchus. Objects are arrested in the larynx either because they are too large in one or more diameters to pass through it or because they have some peculiarity of shape or some prominent point or edge which causes them to be caught in one of the ventricles or to stick in the mucous membrane somewhere. Articles which most commonly enter the air-passages are bones, beans, fruit-stones, coins, needles, pins, seeds and grain. Smooth objects, like beans and fruit-stones, generally pass the larynx, while irregular objects, like pieces of bone, are more often arrested there. Coins are apt to remain in the larynx.

In a thorough and exhaustive article on foreign bodies in the air-passages Preobraschensky gives some valuable statistics, which I shall quote freely. He has collected 193 cases (adults and children) in which the foreign body was in the larynx, 105 in the trachea and 166 in the bronchi. His figures show that the mortality from foreign bodies in the air-passages up to 1866 (prelaryngoscopic period) was 41.2 per cent., while from 1866 to 1893 (when his paper was written) it was scarcely 30 per cent. Intralaryngeal removal was practised only once before 1866 and 54 times between that date and 1893; so that it seems fair to assume that the introduction of the laryngoscope is largely responsible for the improvement in the death-rate. The mortality of such accidents in children is less than in adults. Of 218 children operated on only 60 (27 per cent.) died, while of 63 adults operated on 30 (about 50 per cent.) died. Of 140 children treated without operation 64 (45 per cent. about) died, and of 136 adults without operation 69 (50 per cent.) died. Preobraschensky found the percentage of deaths in laryngeal cases somewhat larger (39.8 per cent.) than in tracheal cases (33 per cent.), but much smaller than in bronchial cases (55 per cent.). In some cases death comes so immediately on the entrance of the foreign body into the larynx that it must be due to shock (reflex paralysis of the respiratory centre following irritation of the laryngeal nerves). In other cases large objects may cause death quickly but not instantly, by mechanical obstruction of the object itself, or of sudden edema of the larynx or trachea caused by its presence. Omitting these cases, which obviously would rarely be seen soon enough to admit of treatment, the mortality in laryngeal cases would be reduced to about 25 per cent. It should be borne in mind, moreover, in studying these figures, that a foreign body in the trachea is in constant danger of becoming impacted in a bronchus, thus falling at once into the most dangerous class of cases. If, therefore, we can prevent laryngeal cases from becoming either tracheal or bronchial by removing the foreign body *per vias naturales*, with the aid of the laryngoscope and suitable forceps, we shall obviously save more patients.

As intralaryngeal manipulation offers special difficulties in children, and as among them by far the largest number of cases occurs, it may not be unprofitable to study this class of cases more closely. Preobraschensky's tables show that in 39 cases of foreign body in the larynx in children in which laryngotomy or tracheotomy was done 13 died. On the other hand, in 13 cases the foreign body was removed from the larynx by instrumental means through the mouth, with 13 recoveries. He reports, further, 2 cases in which the foreign body was successfully removed by reversing the child, in one of which it was in the larynx; 6 cases of expulsion by means of emetics, with 1 death by suffocation, the object being arrested in the larynx; 65 cases cured by spontaneous discharge of the foreign body without medical aid, 7 of which were laryngeal, and 77 cases which died without medical treatment, 20 of which were laryngeal.

Since 1893 I have been able to collect from medical literature reports of 34 cases of foreign body in the air-passages of children, of which only 3 died (less than 10 per cent.) — a very low mortality. In 12 of these cases the foreign body was in the larynx, with 2 deaths. In 1 case death was immediate, from complete obstruction to respiration. In the other a shoe-nail had been in the larynx of a child ten months old for thirteen weeks, during which time the child had great difficulty in getting nourishment. After removal of the nail by tracheotomy the child died from inanition and probably broncho-pneumonia.

From the Massachusetts General Hospital records since 1872 I have collected 18 cases of foreign body in the air-passages in children, with 3 deaths. Four of these cases were classed as laryngeal, with no deaths. In none of these latter was it possible to remove the foreign body *per vias naturales*. Following are brief reports of these four cases:

Case I. Service of Dr. Bigelow, November 24, 1884. An infant girl, age seven months, was thought to have a piece of apple stuck in her throat. The breathing became labored and stridulous. The mother, failing to get the piece of apple out, which she said she felt with her finger, pushed it down. Tracheotomy was done but nothing found. Laryngeal examination had been unsuccessful. Two weeks after discharge from the hospital the patient coughed up a thin but tough piece of apple-pip.

Case II. Service of Dr. Cabot, August 12, 1885. A girl of nine years had a fragment of plum-stone in the larynx for two months, causing dyspnea and dysphonia. After tracheotomy the fragment was found just below the vocal cords, rather firmly embedded. It was about half the stone and had jagged edges. It would probably have been impossible to remove this object intralaryngeally, even had it been possible to see it by means of the laryngoscope, on account of its firm position below the vocal cords.

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[1] Read before the Boston Society for Medical Improvement, February 27, 1899.

CASE III. Dr. Mixter, August 30, 1889. A boy (age not given) got a piece of apple in the larynx; there was extreme dyspnea, laryngeal wheezing, and supraclavicular spaces retracted on inspiration. There is no record of a laryngeal examination. Tracheotomy was performed and no foreign body found. The patient was discharged well.

CASE IV. Service of Dr. Homans, March 28, 1891. A boy, age three years, got a safety-pin in his throat, which was probably pushed into the larynx by the mother's attempt to reach it. It remained a week. Laryngeal examination revealed it, situated clasp down and the other end just above the vocal cords. Attempts at removal were unsuccessful. The thyroid and cricoid cartilages and upper ring of the trachea were then divided, but the pin had disappeared. It was removed from the right primary bronchus by means of a pair of long forceps; recovery.

These cases illustrate some of the difficulties which one is likely to encounter. In Case I the very small size of the larynx offered, probably, the greatest obstacle to a satisfactory laryngeal examination.

The case which I have to report is as follows:

Alice C., age five, was thought to have gotten a a small tin tobacco tag into the throat three days before coming to the hospital (Massachusetts General). where she was brought on June 26, 1895. Breathing had been gradually getting more difficult and the child had been able to take little or no food. There had been no cyanosis at any time and the color was good. Breathing was harsh and evidently obstructed. Ether was administered carefully, then the patient was held by an assistant, as I shall describe later. The illumination was obtained from sunlight reflected into the throat from the head-mirror. The tag was located in the larynx on the left side, about one-half being below the glottis, and held in place, as was discovered on removal, by the lower point sticking in the mucous membrane. After one or two attempts it was seized by forceps and removed, the lower point tearing off a minute piece of mucous membrane. The patient took the ether well and there was no cyanosis. Considerable mucus had to be wiped from the throat before a successful view could be obtained. Atropine sulphate $\frac{1}{150}$ grain was given soon after the operation. In the evening the breathing was still a little harsh, but the child swallowed easily, taking milk from a cup. The subsequent history is uneventful. Breathing became quiet on the following day and the hoarseness was almost gone. The patient was discharged on the third day well and with practically no hoarseness.

For diagnosis in these cases the history of the accident is important. It is also of importance to know the nature of the object suspected to have entered the larynx. A hoarse or otherwise impaired voice does not point necessarily to the presence of the foreign body in the larynx. The voice may be much affected when the body is in the trachea or in a bronchus, probably as a result of the violent paroxysms of cough in the effort to expel it, but also, at times, to the local injury caused by the passage of some rough or irregular object through the glottis. If, on the other hand, the voice is clear one may feel reasonably sure that the foreign body is not in the larynx. Persistent pain and discomfort in swallowing are positive symptoms of a foreign body in the region of the larynx, but points to its presence in the entrance to the esophagus, or above the arytenoids, rather than in the glottis. Partial obstruction to breathing is a symptom of no diagnostic value, since it is as likely to be caused by an object below the larynx as in it. Sudden and complete obstruction would, of course, suggest the glottis as the part affected. Cough is rather more constant in laryngeal cases. A laryngeal examination should always be made with ether if not possible without. Exploration with the finger, if attempted at all, should be done with the greatest care, for fear of dislodging the foreign body, if one be there, and pushing it farther into the air-passages.

Treatment. — Much harm is often done, before the doctor arrives, by violent coughing, putting finger in the throat, vomiting, and swallowing hard crusts of bread. The use of emetics in these cases is mentioned only to be rejected. Such remedies have rarely been successful, and death has followed the sudden forcing of a foreign body from the trachea into the larynx. Inversion is of value only when the body has weight enough to be affected by gravitation, as, for instance, a coin, and is not too firmly held by muscular contraction. In an adult a foreign body in the larynx can generally be removed under cocaine anesthesia with comparatively little difficulty. In small children such a procedure is another matter. Even an examination of the larynx is impossible in the large majority of these cases without a general anesthetic. While under ether the filling up of the larynx with mucus and saliva, the constant respiratory movements of the larynx and epiglottis, and the small size of the glottis make the introduction of an instrument and the seizure of the foreign body often very difficult; in fact a procedure calling for all the patience and skill of the operator. Under chloroform there would be less irritation of the mucous membrane and consequently less filling of the throat with mucus and saliva, but the fact that the patient must be held in a sitting posture during the operation contraindicates its use. I have found sulphate of atropia ($\frac{1}{200}$ grains or less) by the mouth before etherization useful in preventing increased activity of the mucous and salivary glands. Tracheotomy instruments should be ready in case of emergency. A bright light is indispensable for the operation. Where it can be obtained, direct sunlight is most desirable. One assistant holds the patient, another gives the ether, steadies the head and holds the mouth-gag, while a third, kneeling on the floor, grasps and holds out the tongue with a napkin. It is possible to get along with two assistants, but three are preferable. The forceps which, as a rule, I use and find most convenient are the Schrötter tube forceps. In cases which call for immediate tracheotomy, on account of the severity of the dyspnea, the laryngeal examination can be made afterwards. It is better, however, where the dyspnea is not too urgent, to attempt the laryngeal examination first, as it is more easy to see the glottis when the air is passing through it. Besides which, if it is possible to remove the foreign body by the way in which it entered, a cutting operation is avoided, which is always desirable. Bonan says that tracheotomy puts into complete repose the larynx and neighboring muscles, relieving the spasmodic contraction, which may hold the foreign body firmly fixed. It also, as has already been said, makes the larynx more difficult to see. This relaxation of the muscles is obtained as well by general anesthesia.

Thyrotomy is especially to be avoided, owing to the possibility of permanent injury of the voice by the operation.

Summary. — Foreign bodies in the air-passages are more frequent in children than in adults, but the mortality is lower in the former. Leaving out cases in which death is immediate or almost so from shock or mechanical obstruction, cases of foreign bodies in the larynx are less fatal than tracheal or bronchial cases.

In all cases of supposed foreign body in the larynx in children a laryngoscopic examination should be made, unless the child is unusually tractable, under ether anesthesia. If dyspnea is urgent tracheotomy may be done first. If a foreign body is visible in the larynx, an attempt should be made to remove it through the mouth before resorting to any cutting operation for its removal.

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MASSAGE AND GALVANISM IN GOUT.

BY DOUGLAS GRAHAM, M.D., BOSTON.

The position which massage should hold in the treatment of gout has not yet been clearly defined. This will doubtless prove an interesting and fertile field to cultivate for those who have the opportunity, the time and the inclination to do so. At present, as in many other affections, patients suffering with gout are often consigned to the hands of the *masseur* to follow their own discretion or indiscretion.

On the 26th of March, 1895, the Hon. H. D. H. sent for me. He was then fifty-one years of age, and his usual weight had been 325 pounds, but at that time it was only about 200 pounds, showing how much the poor man had been pulled down. For three weeks before I saw him he had been confined to his room with gout. The outer aspect of the left ankle was swollen, hot. tender and indurated, so that he could only hobble around on crutches. On the back of the left wrist there was also a good deal of indurated deposit, hot, and sensitive to pressure, and both ankles and wrists were painful all the time, worse at night, so that he was wakeful and restless, seldom getting any sleep before two o'clock in the morning. Foot and hand were both edematous and there was much pain in the great-toe joint, though there were no other symptoms here during this attack. His previous attacks, extending over a period of twenty-eight years, with the exception of the first, have all been characterized by heat, pain and swelling of the metatarsophalangeal joint of the great toe of the left foot, and these have all disappeared, leaving no trace in the intervals when he was perfectly well. On the back of the right hand there was a deposit half the size of a hen's egg, and seemingly as hard as bone. These swellings were so much worse than usual that his physician called a surgeon to see if they had better be operated upon. It was decided not to do so.

I gave this patient general massage in the morning, and special massage of the affected joints late in the afternoon, every day for five days, when it was evident that he was improving. I also bandaged the left ankle and wrist, which afforded much comfort and support in the day. On the afternoon of the fifth day, immediately after massage to the swollen places, I gave each of them galvanism, five to ten milliampéres, with the negative pole over the affected region for a few minutes. The effect of this was evident at once in lessening the induration and dispelling the surrounding edema and congestion. Followed by a few minutes of massage to push along the circulation and to hasten absorption, the result was much better than from either alone. This was continued every day for a while, with rapid improvement, so that on the seventh day, two days after the galvanism was begun, he was taking some steps without crutches, and two days later was walking well and attending to his profession — that of law — for half a day at a time. Under galvanism preceded and followed by massage the indurations and swellings disappeared like snow before the sun, so that in six days of this combined treatment there was scarcely anything left of them. In four weeks he got completely over one of his worst attacks and required no more treatment of any kind. Milder attacks usually lasted about the same length of time.

There were several other interesting features in this case. When I began with him he had exhausted the orthodox anti-gouty and anti-rheumatic remedies, and was *quacking it on his own hook.* At my suggestion, he stopped this and took an alkaline chalybeate water from Blue Hill Spring, Me., of gentle aperient and diuretic properties, much like that of Schwalbach, and this alone took good care of the internal organs.

He could always tell when an attack of the gout was coming, by his increased mental activity and facility of pursuing difficult legal cases successfully. His attacks were more frequent in strawberry and peach time, of which fruits he was very fond. When I first learned of the use of the negative pole of the galvanic current for aiding in the removal of deposits and indurations about joints I confess I was somewhat sceptical; inasmuch as it was also recommended that the electricity should be preceded and followed by a good massage. It seemed to me that the electro-therapeutists wanted to borrow some honor and glory from massage. But having used galvanism in a variety of these cases from different causes I no longer doubt its value when employed in this way. Whether it acts by attracting alkaline fluids to the negative pole and thus dissolving new formations, which would be very plausible in gout, or whether it works in some other way, its efficacy is undeniable. My distinguished patient was so pleased with the efficacy and novelty of this treatment that, lawyer-like, he advised me to keep it to myself. There might be equally as good reasons for considering this a case of rheumatism as of gout. But it is not the object of this article to go into a differential diagnosis.

That distinguished authority on gout, Sir Dyce Duckworth, says: "The adage of Sir William Temple that 'no man need have the gout who could afford a slave to rub him' I believe true. As this diplomatist was our minister at the Hague when Boerhaave was a youth, it is not unlikely that the latter may have heard of the recommendation, and so been led to advise friction in the treatment of gout."

Our learned friends in France tell us that in chronic gout the good effects of massage are generally recognized — but opinions differ as to the best time to use it. M. Lécorché, M. Bouchard and M. Gendre recommend massage after the acute stage, in order to combat muscular atrophy, to favor the resorption of infiltrations, to break up the tophaceous concretions and to oppose fibrous anchylosis. During an acute attack it is well to abstain from using massage. M. Rosenblith, however, claims to have obtained good results from massage in seven cases of acute gout, but his opinion is not shared by his *confrères.*[1]

The London *Lancet* of October 2, 1897, sounds a note of warning on this subject. It points out that the gouty kidney is seldom or never quite equal to its functions. Here it thinks that an unqualified and over-enthusiastic *masseur* might do much harm as he goes ploughing away at muscles infiltrated with uric acid, creating as much waste as a brisk six-mile walk, and more than the kidneys can throw off. Kept up from day to day for weeks, this practice may be destructive to an already damaged kidney, and the patient may find that though he has got rid of a certain amount of pain and acquired a comparative ease of movement, yet this may be at the expense of renal incompetence and eventual uremia. On the Continent this is said to be of frequent occurrence where massage is practised with more zeal than knowledge.

"We have allowed the quacks to get ahead of us in the application of electricity to therapeutics," said Dr. Anstie a long time ago. "The same must with equal truth be said of massage," says the editor of the *Lancet.*

In gout and many other affections where massage and electricity are to be used it would seem better that they should be applied by a physician rather than by the gymnastic *masseur.*

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Clinical Department.

THREE CASES OF LEUKEMIA.[1]

BY J. N. HALL, M.D., DENVER, COL.

I REPORT to-night three cases of leukemia, seen in the past fourteen months. For the hematological portion of the report I am indebted to Dr. George H. Stover, of this city.

CASE I. *Spleno-myelogenous Leukemia.* — H. J., male, German, forty-seven years of age, has lived in Colorado fifteen years. His mother died of dropsy, father still living. No history of syphilis obtained, nor of other serious illness. Three years ago his abdomen began to increase in size. For several months past he has noticed exhaustion, breathlessness and debility upon attempting to work. Aside from these symptoms and occasional indigestion, he is in fairly comfortable health. When seen, April 1, 1898, he appeared moderately anemic, and the abdomen was protuberant. No enlargement of accessible lymphatic glands. The spleen reached to within two inches of the pubes, and slightly to the right of the umbilicus, the notches being distinctly palpable. Liver not materially enlarged; chest negative; no edema; tongue clean. The temperature has varied between 98° and 100°, reaching the latter figure but once. Pulse 90 to 100, rather low in tension. The urine was normal. The blood count showed 2,890,000 erythrocytes and 331,000 leucocytes, a ratio of one white to 8.7 red cells. The differential count of the white cells was as follows:

Small mononuclear cells	4 %
Large mononuclear cells	11 %
Myelocytes	55 %
Polymorphonuclear cells	30 %
Eosinophiles	0.75 %

Many normoblasts were present. The enormous percentage of myelocytes, not normally found in the blood, is diagnostic of the spleno-myelogenous variety of leukemia.

The patient was given arsenic for several months, but gradually failed, and died in the following September, some four months after I last saw him. Dr. J. A. Farnsworth, of Fort Morgan, who had previously seen the patient, conducted the autopsy. The item of chief interest was that the spleen weighed six and one-fourth pounds. The liver was practically normal in gross appearance. The right kidney was virtually a pus sac, little but its capsule remaining. A large fresh blood clot entirely filled it. The man had loaded a car of wheat in sacks forty-eight hours before death, and I presume the bleeding was connected with that exertion. I pass the spleen around for your examination.

This patient was seen during life by Drs. Elsner, Hopkins, Farnsworth and others.

CASE II. *Spleno-myelogenous Leukemia.* — Mrs. J. B., forty-four years of age; farmer's wife; seen November 21, 1897, with Dr. Franklin Burr, of Greely. There is no family history of interest. She had malaria when a child, but not severely. Has had three children, no miscarriages. For eighteen months past she has complained of dyspnea, a slight dry cough, progressive increase in the size of the abdomen, slight edema of the feet, and loss of weight—from 170 to 120 pounds. She had a few small, bloody stools some months ago, but aside from this trouble has had little digestive disturbance. She was moderately anemic in appearance; temperature 99.3°, pulse 104, of fair quality; lungs negative; heart normal in size and position. Faint systolic murmurs, undoubtedly hemic in nature, were found over the apex and the pulmonic region. Liver normal or very slightly enlarged. Spleen so large as to give the abdomen the appearance of that of a woman in the seventh month of pregnancy. It reached to the navel, and to within two inches of the pubes. The notch was especially distinct. Moderate tenderness existed over the shin bones. Slight enlargement of glands in axillæ and groins was noted, which she states has been greater at times. The blood count was as follows: Red cells moderately decreased, exact count not made. Ratio of white cells to red ones approximately one to five, exact count not made.

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[1] Read before the Denver and Arapahoe Medical Society, March 14, 1899.

[1] Revue d' Hygiène Therapeutique, 1896, p. 188.

Differential leucocyte count:

Small mononuclear cells	9 %
Large mononuclear cells	10 %
Myelocytes	50 %
Polymorphonuclear cells	30 %
Eosinophiles	1 %

Many normoblasts were present. Like the last case, it is a typical one of spleno-myelogenous leukemia. When last heard from the patient was still attending to her household work, and in comfortable condition. She has taken, for a long time, large doses of Fowler's solution, with apparently some benefit. Drs. Hopkins and Freeman examined this case with me.

Case III. The third case, one of mixed lymphatic leukemia, sent me in November, 1898, by Dr. Leonard Freeman, is of unusual interest, from its rarity and from the fact that the diagnosis of such cases is often more difficult than that of those cases of leukemia of the much more common spleno-myelogenous variety. The pure lymphatic leukemia is even rarer than the mixed forms, while but one of the latter even occurred in Osler's seventeen cases of leukemia.

H., male, eight years of age, born in Ohio; parents and four brothers and sisters all living and well. No specific history. He had measles and chicken-pox as a baby, diphtheria at three years, pneumonia at five. In October, 1897, the glands in the neck and both groins became swollen, and from January 1, 1898, he was confined to bed for eight weeks. There was slight cough all of this time. After being up three weeks he complained of pain in the right side, and stooped slightly in that direction, thus having a slight dorsal spinal curvature concave to the right. He lost about twelve pounds during this time. Since the beginning of the glandular trouble he has had a constant daily rise of temperature to about 101°, and at my first examination it reached 102.1°. The pulse has varied from 120 to 144. He was quite sallow during the winter, more so than at present. A moderate cough without expectoration has ceased since his arrival in Colorado, in August. He has complained frequently of pains in the knees and occasionally of pain over the splenic region and in the right flank. He has had from six to eight loose movements of the bowels during all of the time, excepting when they have been prevented by the use of drugs. Two aspirations in the hepatic region have given negative results, there being no fluid obtained excepting that in the needle itself. The appetite and digestion have been fairly good. There has been some dyspnea on exertion, which is still present.

On November 18, 1898, his condition was as follows: He was fairly developed for his years, sallow and earthy in color, rather thin, weight forty-nine pounds, no distinct jaundice. Temperature 102.1°, pulse 128, of good quality. The tongue had a thick, whitish coat. Urine not measured, but apparently about normal in quantity. Specific gravity 1.016, no albumin, sugar nor casts. The veins of the lower abdomen were much distended, and the wall protruded so as to simulate the appearance of ascites, which, however, was not present. The spinal curvature mentioned was barely perceptible; no spinal tenderness. The hepatic dulness extended from the fourth rib to two inches below the costal margin, and the organ was readily palpable, with markedly rounded edge. In the back the dulness extended upward to the eighth rib. The splenic area of flatness was three by four inches in extent, rather higher than normal, the edge of the spleen palpable. It is to be noted that the spleen is less enlarged in cases of leukemia having diarrhea than in others. Heart negative, no anemic murmurs. Lungs negative, excepting over the space between the aortic cartilage and the liver, where resonance was somewhat defective, and a few fine dry râles were heard on deep inspiration, but not constantly.[2] In my opinion, this was merely a collapse of lung from the enlarged liver beneath.

The blood count was as follows: Red cells, 4,500,000, very many of them microcytes; a few nucleated red cells, a few megalocytes; hemoglobin about 60 per cent.; color index, 73; white cells, 35,000. Of these 18 per cent. were large lymphocytes, 32.8 per cent. were small lymphocytes, one per cent. eosinophiles, 1.2 per cent. myelocytes, and 47 per cent. polymorphonuclear cells. Thus a little over one-half of the 35,000 leucocytes were of the lymphatic variety. Normal blood has some 2,000 lymphocytes per cubic millimetre, while this specimen has nearly 18,000.

The patient was placed upon ascending doses of Fowler's solution, and is now taking ten minims after each meal. At the end of six weeks he had gained four pounds in weight, improved much in color, and no longer showed the enlarged abdominal veins. The râles had practically disappeared. The blood showed an increase of a quarter of a million red cells, and an improvement in the hemoglobin to about 65 per cent. But one nucleated red cell was seen in counting 1,000 leucocytes. The total leucocyte count was 15,800 per cubic millimetre, a decrease of over one-half, the proportion remaining about the same, excepting that the polymorphonuclear cells increased about 3½ per cent. at the expense of the lymphocytes. But one myelocyte was seen in counting 1,000 white cells.

At the examination on January 15th his condition was still improving, but he had passed two stools slightly stained with blood, the latter not accounted for by any anal lesion, so far as I could learn. He presented audible and palpable friction over the upper edge of the liver in front, and within five days the tenderness over the lower part of the liver was so great that the boy cried when I attempted to determine whether friction was still present. Undoubtedly a perihepatitis existed, analogous to the perisplenitis so often seen in leukemia.

In attempting to establish the diagnosis of the mixed lymphatic leukemia, it is perhaps requisite that it should be differentiated from the conditions with which it might be confounded. The number of leucocytes is not greater than may be found in any ordinary leucocytosis. The decreased proportion of polymorphonuclear cells, which alone are increased in ordinary leucocytosis, serves to throw it out of the question without further consideration, for only in the leucocytosis of children associated with hemorrhage, syphilis or rickets, or with lymphosarcoma, are the mononuclear elements increased, and then rarely in the proportion here presented. In chlorosis there is no such leucocytosis, and it utterly fails to account for the enlarged glands and liver, and the diarrhea, although the decreased number of red cells, the poikilocytosis and diminished hemoglobin suggest its consideration.

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[2] On account of these physical signs the patient was sent to Colorado for tuberculosis, but no further evidence of the disease, microscopic or otherwise, has ever been obtained.

The comparatively great number of red cells, the diminished *valeur globulaire*, and the clinical history serve to exclude progressive pernicious anemia. Hodgkin's disease is excluded by the very fact of the increase in the white cells, and the departure from the normal proportions existing between them. The anemia infantum pseudo-leukemica of von Jaksch is not found in children over four years of age, presents ordinarily a greater diminution in the number of erythrocytes, a greater enlargement of the spleen, and less of the liver, and no involvement of the lymphatic glands. The polymorphonuclear leucocytes are more markedly increased in most cases. We shall exclude it. Rickets, syphilis and malaria we mention only to exclude them, there being no good grounds for more than their mere mention. The blood count serves to exclude the ordinary spleno-myelogenous leukemia absolutely, particularly the small number of myelocytes. In my opinion, this is one of the cases in which an absolute diagnosis is impossible without a study of both the clinical history of the case and the blood. Given, however, the clinical history related and the leucocytic changes, the diagnosis of a mixed lymphatic leukemia is reasonably clear. It is, however, emphatically not an acute lymphatic leukemia of the variety commonly fatal in a few weeks, for such cases present, often, 90 to 95 per cent. of lymphocytes, and, moreover, our case has already lasted more than sixteen months. I hope to report the eventual outcome of the case at some future meeting.

P. S. — On February 20th the case remains about as above mentioned.

Medical Progress.

REPORT ON PROGRESS IN PHYSIOLOGICAL CHEMISTRY.

BY H. F. HEWES, M.D., BOSTON.

THE CHEMISTRY OF THE SUPRARENAL CAPSULES.

The importance of the suprarenal capsules in the body metabolism was first emphasized by Addison,[1] who in 1855 demonstrated that the symptoms of the disease which has since been known by his name, the most prominent of which are asthenia and bronze patches upon the skin and membranes, was associated with pathological alterations of these capsules. The subject was tested experimentally by Brown-Séquard,[2] who found that the removal of these organs in animals was followed by fatal results — the symptoms of the fatal condition resembling Addison's, except that the progress was more acute. The bronze patches were not found in these acute cases, but Nothnagel,[3] Marino Zucco and others have since produced this as well as the other symptoms, by causing a gradual dissolution of the capsules. Twenty-five or more years after Brown-Séquard's work, Tizzoni,[4] Abelous and Langlois,[5] and others again took up the subject, arriving at the same results in their experiments. Arguing from the facts that the chief symptom following extirpation was muscular weakness (some affection of muscular metabolism), and the further fact that the blood of animals suffering from extirpation was very toxic to other animals the subjects of recent extirpation, but not to sound animals, these investigators concluded that the function of the suprarenal capsules is the removal or destruction of a substance which accumulates in the blood as the result of muscular metabolism. This is the so-called auto-intoxication theory of the function of the suprarenals.[6]

More recently still this question of the function of the suprarenals has been investigated by Oliver and Schafer,[7] Vincent,[8] Cyhelsky, Velich, Gottlieb and others, through injection into animals of extracts of these glands. The results of these investigations prove that, whether the auto-intoxication theory of this function is true or not, a fact admittedly lacking scientific proof,[9] the suprarenal glands possess a distinct secretory function in the animal economy. There is present in the extracts of the gland a substance which, when the extracts are injected into a vein or beneath the skin, causes a marked increase in blood pressure. Under the influence of this secretion the muscular tone of the system generally is affected, the tonicity of the heart muscle, the muscles of the blood-vessels, also the skeletal muscles, is increased. The contraction of the arterioles is so great that the circumference of a limb as measured by the arteriometer, or the size of separate organs, as the spleen or kidneys, measured by the oncometer, is distinctly lessened.[10]

Applied to the eye or mucous membranes of the nose and throat, the extracts cause constriction of the vessels, with pallor.[11] Large doses cause in the animals languor, and paralysis beginning in the hind quarters, and, if large enough, death.

The action of the substance is in great part peripheral, as it is present when the cord, or even nerves, are separated. It affects not, as curare, the nerve endings but the muscle itself. The substance is a very active one. From their experiments, Oliver and Schafer have found that a maximal effect upon a 10-kilogramme dog is obtained by 0.0055 gramme of dried suprarenal, or an amount equivalent to 0.00055 gramme per kilogramme of body weight. This the investigators estimate to represent about 0.000014 gramme of active material. The action of the substance is very transient. A return of initial blood pressure occurs in a few minutes. Even under large dosage the animals recover from an injection in a short time, provided a fatal dose is not given.

This short duration of activity of the substance cannot be explained by rapid elimination unchanged, as was supposed by earlier investigators, since it has been found that the duration is not affected by the ligation of the renal vessels. Ligation of the suprarenal vessels also causes no effect. In view of this fact, and also of the well-known susceptibility of the active substance in the extracts to destruction by oxidation,[12] the theory is now advanced that the limitation of the period of activity of the substance is due to its rapid oxidation in the body.[13] In support of this theory Langlois has recently carried on some investigations.[14] In these investigations he shows, first, that the suprarenal substance when injected disappears from the arterial blood in less than three minutes. This disappearance coincides with the return of initial blood pressure. In the tortoise in winter the action upon the heart endures nearly three hours. It disappears in twenty minutes in the animal in its active period. That the active principle remains for a long period intact in blood *in vitro*[15]; but if oxidizing agents, as ozone, oxidizing ferments of the organism, etc. (?) be introduced to this blood the activity of the suprarenal substance is destroyed rapidly.

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[1] Addison: Phamphlet, London, 1853.

[2] Brown-Séquard: Compte rend. Acad. de Sc., Paris, 1856, pp. 422, 542; Arch. gén. de méd. de Paris, 1856; Jour. de la physiol. de l'homme, 1858, vol. i, p. 160.

[3] Nothnagel: Zeit. f. klin. Med, 1879, Bd. 1, S. 77.

[4] Tizzoni: Arch. ital. de Biol., 1886, vol. x, p. 312.

[5] Abelous et Langlois: Compte rend. Soc. de Biol., Paris, 1891, p. 835; 1892, p. 388.

[6] Abelous et Langlois: Compte rend. Soc. de Biol., Paris, 1893. p. 444.

[7] Oliver and Schafer: Jour. Phys., Cambridge, vol. xviii, p. 230.

[8] Vincent: Jour. Phys., Cambridge, 1897, vol. xxii, p. 111.

[9] The finding of hemochromogen in the medulla of the gland by McMunn favors this theory of the removal of waste by the gland. McMunn: Proc. Royal Sc., London, vol. xxxix, p. 248.

[10] Oliver; Lancet, 1896. This effect was demonstrated after injections, or even after dosage by mouth in man.

[11] Bates: New York Medical Journal, vol. lxiii, p. 647. Bates has used the extract with great success for operations upon the nose. Under its influence anesthesia and almost complete absence of hemorrhage are sustained.

From these facts, the author concludes that the transitory effect of the active substance of the suprarenal extracts is consequent upon the rapid oxidation of this substance in the body.

No comprehensive results in regard to the effect of suprarenal extracts upon general metabolism have been reported.

It may then to-day be taken as proven that it is one function of the suprarenal capsules to secrete a substance which acts physiologically to maintain the tone of the muscular system. This substance is contained in the medulla of the gland exclusively.[16] The isolation of this muscle-toning or blood-pressure-raising principle of the gland has been the object of considerable investigation in recent years. It has finally been accomplished by Abel of Baltimore.[17]

THE ACTIVE BLOOD PRESSURE-RAISING PRINCIPLE OF THE SUPRARENAL CAPSULES — EPINEPHRIN.

Vulpian[18] in 1856 observed that the juice of the suprarenals gave an emerald-green color with ferric chloride and a rose-carmine color with iodine water, reactions which were obtained with no other tissue of the body as far as he investigated them. All attempts to isolate this chromogenic substance were unsuccessful.

In 1895, after the discovery of the blood-pressure-raising property of the suprarenal extracts, Moore, through a set of investigations, came to the conclusion that the active physiological substance was identical with the chromogen of Vulpian. This opinion he based upon the facts that the solubilities of the chromogen and the active principle of the extract were the same, and that both lost their essential character by oxidation.[19]

Fränkel[20] came to the same conclusions as Moore, and stated further that he considered this essential principle to be a nitrogenous derivative of the orthodihydroxy-benzene series. The efforts of both these investigators to isolate and determine the active principle were unsuccessful.

In a later investigation Moore determined that the chromogen and the active principle of the extract, though both parts of a stable compound, were not identical, since the substance giving the characteristic rose-red color with the halogens could be separated as inactive, leaving an active substance behind. He was again unable to isolate the active substance, but concluded that it belonged among the tannic acids of the orthodihydroxy-benzene series, probably among the pyridene derivatives, to which class most of the alkaloids belong. This latter conclusion he based upon very insufficient proofs, however.

In addition to the above observations, Brunner and Muhlman have made investigations from which they conclude that this active principle of the suprarenal capsules is a pyrocatechin derivative. This conclusion, as Abel and Fruth[21] have since demonstrated, is founded upon entirely insufficient evidence. Abel, in a series of investigations extending from 1896 up to the present time, has taken up the work where these previous investigators left it and has succeeded in finally isolating and determining the chemical nature of this active blood-pressure-raising principle of the suprarenals.

This substance, which Abel has named epinephrin, has a chemical formula of $C_{17} H_{15} NO_4$. From the action of this substance towards the alkaloidal reagents, the author considers it to belong among the alkaloids.

The method of the isolation of epinephrin employed by Abel is in brief as follows: A condensed physiologically active aqueous extract of the suprarenal capsule, from which the fat, proteids and a jecorin substance have been removed, is treated with benzoyl chloride and sodium hydrate according to the Baumann-Schotlen method of forming a benzoyl compound.[22] The crude tarry mixture thus obtained, which consists of the benzoate of the active principle contaminated with other benzol derivatives, is dissolved in warm glacial acetic acid, and taken up in ether. After removal of the acid, and some purefication, the benzoate as obtained from the washed ether solution is decomposed with water in the autoclave, under a pressure of eight to twelve atmospheres.

The resulting solution contains the epinephrin. This substance is precipitated from this solution, powdered, dried and analyzed. Of the typical reactions of the active substance — the rose-red color with ammonia and iodine, the emerald green with ferric chloride, the reduction of nitrate of silver, etc. — this solution from the autoclave gives all but the first. The solution of epinephrin and the salts obtained from the active substance prepared in this way have very little physiological activity, owing probably to some chemical change, as the loss of a molecule of water or the shifting of an atomic group in the process. If, however, a benzoate prepared as above from the aqueous extract be decomposed in the autoclave in the presence of a one- or two-per-cent. solution of sulphuric acid at pressures from three to five atmospheres' intensity active solutions of this epinephrin are obtained. These solutions also retain the property of giving the rose-red reaction with iodine and ammonia.

If epinephrin be precipitated from such solutions, dissolved in dilute acids and injected into animals it is found to possess considerable physiological activity.

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[12] Vulpian, Moore and Abel.

[13] Schafer opposes this theory and suggests that the substance is rapidly stored in the muscles.

[14] Langlois: Arch. de Physiologie, vol. xxx, p. 124.

[15] This fact formed the ground for Schafer's opposition to the oxidation theory.

[16] See especially Swale Vincent: Investigations with the injection of the two sets of suprarenals of elasmobranchs, Jour. Phys., March, 1897; also Oliver and Schafer: loc. cit.

[17] Abel: Johns Hopkins Bulletin, July, 1897, September — October, 1898; Report of Proceedings of Physiological Association, New York, December, 1898, in American Journal of Physiology, vol. ii, No. iii.

[18] Vulpian: Compte rend. Acad. d. Sc., Paris, tomes xliii et xlv.

[19] Moore: Jour. Phys., vol. xvii, pp. ix and 230, vol. xvi, p. 1.

[20] Fränkel: Wien. med. Bl., 1896, Nos. 14, 15, 16.

[21] Fruth: Zeitschr. f. phys. Chem., 1897, Bd. p. 21.

[22] The filtrate from the precipitate thus formed contains no active principle showing that the substance is all extracted by the benzoyl chloride. This filtrate, freed from benzoates and excess of alkali, does, however, according to Abel, apparently contain a physiologically active principle capable of producing a fall of blood pressure, since, when injected in amount it, causes this effect. (See remarks later.)

The chemical processes involved in the formation of salts from this free base, and in the extraction and drying of the powdered epinephrin substances for analysis greatly reduce this physiological activity. It is probable, however, that the composition of the active salts used in solutions is the same or nearly the same as that of the inactive salts examined.

The activity of this active blood-pressure-raising constituent is very great. Thus of the slightly impure active sulphate it required 0.00013 gramme to raise the arterial pressure about 14 millimetres in a small dog. This quantity of sulphite corresponds to 0.00009 gramme of the free base. By the calculations of the author, a distinct physiological effect is produced by 0.000013 gramme of the free base per kilogramme of body weight.

A BLOOD-PRESSURE-LOWERING PRINCIPLE IN SUPRARENAL EXTRACTS.

That this secretory function of the suprarenals is the sole function of these organs, or that this active muscle-toning substance is the only active physiological principle in the secretion, is, of course, not to be concluded from the investigations so far accomplished. As stated in our footnote No. 22, Abel found the filtrate from the precipitate containing the active blood-pressure-raising principle to contain an active blood-pressure-lowering principle.

This fact, which of course cannot be definitely accepted until further investigation has confirmed it, of the presence in suprarenal extracts of a blood-pressure-lowering as well as a pressure-raising principle is of special interest in connection with the recent work of Cleghorn upon the physiological action of injection of extracts of sympathetic nerve ganglia, which the recent histological observations of Stilling, Schafer and others of the identity of certain chromophilic cells contained in the suprarenal medulla and in these sympathetic nerve ganglia suggested.[23]

Reasoning from this identity of histological nature, the common chromophilic cells, Cleghorn looked for a common physiological action of extracts from the suprarenal medulla and sympathetic ganglia. Upon investigation, however, he found that extracts of the sympathetic have a marked blood-pressure-lowering effect, upon injection. In Abel's blood-pressure-lowering constituent of the suprarenal extracts then we may have the result of the secretion of this chromophilic cell substance of the suprarenal medulla, which, according to Minot, represents the remnants of sympathetic nerve substance about which suprarenal medulla is originally built up. That is, we have here the physiological expression of the histogenesis of the capsule, of which the chromophilic cells are the histological expression.

THERAPEUTIC USE OF SUPRARENAL SUBSTANCE.

That this muscle-toning constituent of the suprarenals is a very important secretion for the integrity of the organism cannot be doubted. This lack of muscular tone and low blood pressure is the prominent symptom after removal of these glands in animals or in Addison's disease in men. Extracts from suprarenals taken from individuals who have succumbed to Addison's disease possess none of this active physiological effect.

Brown-Séquard succeeded in prolonging the life of animals with extirpated suprarenals, by injections of suprarenal extracts.

Abelous and Gourfein[24] claim to have obtained good results from grafts of suprarenal tissue, in animals in whom the suprarenals had been extirpated. These results have not been confirmed by later experimenters.

One point of great importance in connection with this investigation of the administration of suprarenal — a point which has a direct bearing upon the utilization of the extracts or active principle of the gland for therapeutic purposes — is the question of its activity when administered by mouth. In this regard Oliver and Schafer have shown that the activity is not destroyed by the action of the gastric juice *in vitro*.[25]

Oliver claims that after exhibition of suprarenal by mouth the same phenomenon of the diminution of the arterioles of a limb as measured by the arteriometer which is present after injection of the gland extracts can be observed.

Abelous, Langlois and others also claim that cases of Addison's disease are benefited by the continued administration of suprarenals by the mouth.

Vincent, however, in a series of investigations recently reported, found no physiological effect to follow the administration of large quantities of suprarenal glands in dogs and cats.[26]

The utilization of the suprarenal extract or of epinephrin as a therapeutic agent for systemic effect does not, then, in the light of our present knowledge, appear to be practical, for the following reasons:

The effect of the administration must be a continuous one to be useful in relieving the conditions of asthenia and lack of tone for which the suprarenal substance is given.

Administration by mouth, by which method such a result might possibly be accomplished, appears to give negative results in regard to the systemic action of the substance. The method of administration by injection in which systemic action is obtained cannot be utilized for the maintenance of a continuous physiological effect, owing to the extremely transitory character of the action of the injected substance.

A continuous action similar to that exerted by the constant secretion of the normal gland may, perhaps, be secured by grafting of suprarenal tissue. But all attempts of this nature have been so far unsuccessful.

The usefulness of preparations of suprarenal substance in another therapeutic connection, however, namely, as a local vasoconstrictor and hemostatic when applied locally to the mucous membranes, has already been mentioned (Note No. 10). When used with cocaine upon the nasal mucous membranes, as in operations upon the nasal septum, almost absolute bloodlessness and total anesthesia of the parts can be maintained for even one to two hours. No bad effects, so far as I am aware, have been reported from its use in this way.[27]

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In Vol. IV of the "Travaux du Laboratoire de Ch. Richet," 1897, a full bibliography (234 papers) and historical account of the physiology of the suprarenal capsules up to date, 1897, may be found.

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[23] Cleghorn: Bulletin of Boston Society of Medical Sciences, 1899. A full account of this work will appear in the American Journal of Physiology, June, 1899.

[24] Gourfein: Rev. méd. de la Suisse, 1896, p. 113.

[25] Oliver and Schafer: Journal of Physiology, Cambridge, vol. xviii, p. 230.

[26] Vincent: Journal of Physiology, Cambridge, August, 1898.

[27] Swain: New York Medical Journal, December 24, 1898, Local Use of Suprarenal Extracts.

Rolleston. British Medical Journal, vol. i, 1895, also gives a full account of the physiology, histology and clinical study of the subject up to 1895.
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(*To be continued.*)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

Regular meeting Monday, February 27, 1899, Dr. R. H. Fitz in the chair.

Dr. Francis H. Williams presented the subject of

X-RAY EXAMINATIONS AS AN AID IN THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.[1]

I should like to begin with a patient who was in the hospital not a great while ago, who has come here this evening, and who has just been examined, but without the stethoscope, by Dr. Knight and by Dr. Otis. I think they agree in a general way about the signs that are found in his left apex, as do others. I want you to bear in mind, please, that these gentlemen found the difficulty chiefly on the left side of the chest. By the fluoroscope, on the contrary, he has an expansion on that side of three inches and the lungs are clear; on the right side he has an expansion of about two inches and the lung is dark through the nipples. I think there is not much question about the trouble being chiefly on the right side. I have examined him two or three times with the fluoroscope and found the signs always the same. There is no doubt that he had tuberculosis, because he has had hemoptysis, and we have found bacilli, so that the x-ray examinations are not so important in this case as in some others; but the comparison between the physical signs and those seen in the fluoroscope was interesting. When he entered the hospital, ten days ago, there was some increase of fremitus on the right side in the back, but within normal limits. Tactile fremitus slightly increased on the left side in front.

Dr. Knight: I don't see how any one can think for a moment that this method of examination is not going to be a very important one. You might just as well say the laryngoscope, which enables us to look into the larynx, is of no use, simply because you have not had experience with it and do not know what you see. Here is a method of looking into the chest, and there ought to be, I think, doubt in nobody's mind that when we learn to interpret what we see it is going to be a very valuable aid in diagnosis, and it has arrived at that point, I think, in Dr. Williams's hands already. Certainly his experience, if we read all his published cases, ought to convince us that we have here a method which should be employed, if possible, in doubtful cases. As I say, the only thing that remains to be developed is what interpretation to put on what we see, and that Dr. Williams is developing now.

In regard to the early physical examination and its comparison with the results of x-ray examinations, I think that almost all men turn their attention too much to differences in percussion, resonance and in the respiratory murmur. I think that those who deal most with early tuberculosis will say that they do not get changes in percussion and changes in respiration which they consider to be decisive among the earlier signs, that they get catarrhal signs perhaps weeks or months before they get any very significant changes in percussion and respiration, and those are the signs which are important to look for and which I should like to listen for more carefully with the stethoscope in this case of Dr. Williams's. In order to develop those signs properly the patient must cough in one way, and in no other way, and about half the patients you come across it takes about five minutes to teach to cough properly, so as to develop the bubbling râle in the chest, and in fact I have given up sometimes a patient in despair, feeling sure there would be râles if he would only cough properly. I think this method of examination is a good deal neglected in ordinary examinations.

Then we must bear in mind also the marked disparity in the normal percussion sounds and resonance sounds at the two apices. It is very difficult to say how much dulness and how much bronchial quality in respiration may be, or may not be, perfectly normal, with an exaggerated vocal resonance also at the right apex, and in some of these cases, — now in this very case the man had an abnormal amount of bronchial respiration, I think, at the right apex, and yet I have seen cases in apparently perfect health that have about the same respiration that he has; so that without confirmatory râles at the right apex we have to be very careful in the diagnosis by physical signs, whereas if we have a change in percussion on the left side or a morbid change in respiration at this apex we attach a good deal more importance to it. I think, in the case of this man, that he has trouble in both lungs, and Dr. Williams's examination perhaps shows a more serious impairment of the right, which I don't think appears on the physical comparison. Of course I would not be too positive about this without the stethoscope. It seemed to me there was a decided dulness at the top of the left lung in that case, and less respiratory murmur at the top of the shoulder than we ought to get in health, but it may be there is a more general infiltration on the other side, thereby impairing the relative expansion of the lung. In the matter of prognosis, in the amount of lung involved, as Dr. Williams says, it seems to me when we get to understand, to interpret, the signs, what to eliminate and what to accept, we must have a very valuable addition to our methods of diagnosis and prognosis.

Dr. Otis: I have been exceedingly interested in Dr. Williams's paper, and I think it is a most valuable contribution to the methods of early diagnosis. When he read his longer paper upon the same subject last summer before the American Climatological Association it was recognized by the gentlemen present, that he had made a very valuable addition to the methods for the early detection of phthisis. I would like to ask Dr. Williams if he has made a comparison between his x-ray examinations and the tuberculin test; for instance, if he has taken a certain number of cases which have given no evidence from the x-ray examination and tested them with tuberculin and compared those two sets of cases. I should think that this might be an interesting experiment to try. Any one who has examined a large number of healthy lungs would be surprised, I think, at the variation in supposedly normal conditions. When I was the medical director of the Young Men's Christian Union Gymnasium I examined about 3,000 cases, more or less superficially to be sure, but still I learned something, and one thing was the difference in what was supposedly normal lungs, a difference especially in percussion and in the character of the respiration; so that, if you selected a certain number of those cases, it seems to me not unlikely that one might have considered some real pathological condition present. Of course this might have been actually the case, but, from my experience, I considered them simply normal variations. In such cases the use of the x-ray would have been a very interesting experiment. Incidentally, it would seem to me that in teaching auscultation and percussion it would be an excellent idea for the students to examine a large number of supposedly normal cases, so far as auscultation and percussion were concerned, and then submit them to the x-ray test. Of course the difficulty is in getting hold of these early cases. They so often consult no physician, and fortunately a certain proportion of them recover without realizing that they have had any tubercular trouble.[2] Various tests and methods have been suggested by which one could be aided in making the diagnosis of early tuberculosis, but after all they are simply aids, and when you compare them with the greater certainty of the x-ray examinations you realize the great advantage of this over any of the other early tests or aids.

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[1] See page 513 of the Journal.

Dr. Blodgett: I would like to ask for further information in relation to the burning from x-rays; whether Dr. Williams was alluding to an immediate burn or the excoriations and inflammations of the skin and at times of the deeper structures, which have been so frequently reported as occurring somewhat later. That possible contingency has been a bugbear in my mind in relation to the x-rays, because in some of the reported cases the damage to the tissues has occurred days or weeks subsequently to the examination.

Dr. Jackson: It seems to me, in spite of a large number of autopsies to which we have access, we hardly realize the large number of cases which must have tuberculosis and recover. Pathologists tell us they find in all autopsies 20 per cent. to 25 per cent. of the cases show evidences of past tuberculosis. It seems to me possibly that the cicatrization of the lung, possibly the presence of minute calcareous or other nodules in the lung, may give rise to small areas of opacity. Dr. Williams very kindly examined two cases for me where he and I discussed the possibility of that condition existing, namely, two cases of supposed rheumatism. When Dr. Williams made the examination there were definite areas of limited opacity in the lungs and there was a limitation of the excursion of the diaphragm. Neither of the cases showed to my powers of examination evidence of pulmonary disease. In neither case was there any history that to me would suggest that they were the subjects of any recent tubercular disease. One patient I had known a good many years, the other merely as a hospital patient. It seems to me very possible that in such cases as that the opacity may be due to some past disturbance. In these two cases tuberculin was given and neither reacted. A second examination by Dr. Williams in one of these cases gave negative results.

Dr. Farlow: I should like to ask if there is not considerable difference in the excursion of the diaphragm depending on the time of the meal and the fulness of the stomach.

Dr. Coolidge: I should like to ask whether the injection of tuberculin for diagnostic reasons makes any difference in the signs as seen with the x-ray — whether the darkened apex becomes darker, for instance, after the injection.

Dr. Williams: As regards Dr. Otis's question as to the use of tuberculin in some cases not suspected to be tubercular, it would be a very interesting experiment, but I should hardly feel justified in giving tuberculin to a number of patients unless there were some other reason.

Dr. Otis: Suppose you had some suspicion from the general symptoms that a tubercular condition existed, and found nothing with the x-ray, in such a case have you used tuberculin?

Dr. Williams: I have done other than that. I think what I have stated in my paper does not sufficiently cover the ground. I have tested with tuberculin some patients in whose lungs I found a shortened excursion of the diaphragm, thinking they might be tubercular, and got no reaction; when I examined these patients again I found that the second examination did not agree with the first, but a second showed a much better excursion of the diaphragm. I think in the very early cases that one should not depend upon the diagnosis, or the appearances rather, unless they are marked, without making two x-ray examinations with an interval of a few days between them.

In regard to the cases Dr. Jackson spoke of, I think I wrote to him why the examination was not quite satisfactory and no second examination was made, so those do not come within the rule which I have suggested of having at least two examinations in early cases to see if they correspond. For example, here I happen to have two x-ray examinations of the same patient made after some interval, but they correspond quite well; the excursion of the diaphragm is about the same and I found a darker apex at the right lung. I make the second examination without refreshing my memory from the notes of the first one, so that most of the time I do not remember whether the patient had previously trouble in the right lung or left lung, and I try to make all examinations as independent of one another as possible. In some cases of rheumatism or anemia or debility, or convalescence from typhoid fever, or pneumonia you may get some appearances which are similar in many respects to those you may find in early tuberculosis, so that the signs by x-ray examination should be taken together with other signs and symptoms; one should not make a diagnosis by an x-ray examination alone. If you find the lungs in an abnormal condition by x-ray examination you suspect that patient of having tuberculosis and then look carefully to see if there are other things in the history, or signs which justify that suspicion. I have not found that the use of tuberculin made any difference in the appearances in the fluoroscope. I saw this morning something I do not think I ever saw before: a patient who had pneumonia in the lower portion of both lungs. He had developed an empyema on the left side and an x-ray examination this morning showed the right border of the heart in the right nipple line and high up in the chest, starting from a point an inch and a half above the nipple and extending upwards and inwards to the clavicle. I have never seen the heart so high up before. He evidently had a good deal of fluid in the left chest and the solid portion of the right lung kept the heart from going over to the right and gave it an upward direction. After some of the fluid was withdrawn the heart came down more nearly to the normal position. I did not draw out much, — seventeen ounces, — and then he was sent to the surgical side.

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[2] Transactions of the American Climatological Association, vol. xiv, 1898, p. 49.

As regards the movement of the diaphragm there are many things to be considered, the condition of the abdomen, for instance; if the abdomen is much distended the diaphragm naturally is higher up. There may be some new growth which would displace the diaphragm. When the patient breathes and the marks are made showing the excursion one should be careful that the patient has no clothing constricting the waist. Women sometimes cannot breathe as freely as they should until everything about the waist has been loosened.

As has been suggested, the x-ray burns make themselves evident some time after the exposure, perhaps a week or ten or twelve days, but I have never seen any trace even of any burn or any unpleasant effect in any patient on whom I have made an x-ray examination. If the simple precautions are taken there is no risk.

Dr. Knight: I should like to ask whether Dr. Williams has ever examined a case where there were fairly well marked physical signs of tuberculosis of the lung, and failed to get any evidence by the x-ray.

Dr. Williams: I have found two cases in a considerable number of cases I examined. I had that in my paper, but did not read it. One of these cases began with laryngeal tuberculosis, and I did not succeed in getting signs by the x-ray examination, although one could get râles perfectly well, though no dulness. That patient I examined in 1896. The other I do not remember so distinctly. About the first case, which is not now living, it is to be said that it was perhaps a case of disseminated tuberculosis which I did not recognize. Whether I should recognize it to-day I cannot say. I think I should be less likely to overlook it.

Dr. J. P. Clark read a paper upon

FOREIGN BODIES IN THE LARYNX OF THE CHILD.[2]

A child, five months old, was brought in with a history of having been seen playing with a small piece of mutton bone on the day previous. The child, of course, put it in her mouth. Before the mother could remove it it had gone down the throat. The mother thought the child swallowed it, until she gave her something to eat and found the food would not go down. The child had no difficulty in breathing when she came in, but the mother said she had been very restless during the night and had a good deal of discomfort. I had a gag put in the mouth and put my forefinger very carefully into the throat, as one would in introducing an intubation-tube, and felt this hard substance apparently just above the larynx resting on the right aryepiglottic fold, and with a pair of curved forceps I removed it. It is a rough triangular piece of bone. It was too large to get into so small a larynx. It rested in such a way as not to interfere with respiration, although it did interfere with swallowing.

Dr. Knight: I don't know that there is anything I have to say except to commend and urge the use of ether in children where there is foreign body or foreign growth. As Dr. Clark suggests in the beginning, it was supposed that the amount of mucus would prevent a good inspection or manipulation of the interior of the larynx, and for many years after the laryngoscope was pretty generally used for adults in case of foreign bodies and foreign growths it was not used in young children, but the larynx was split for the removal of papillomata and the removal of foreign bodies, because it was thought that one could not work when the patient was under a general anesthetic; but although it is at times somewhat difficult, it is yet a method which can usually be carried out with a certain amount of patience on the part of the operator. I remember one reported case operated on by Jurasz in Heidleberg, I think, under chloroform, where the laryngoscope was used and a foreign body removed in a child under two years of age; so that a thing to be commended and urged, it seems to me, is general etherization in many of the cases that require operation in the larynx of young children.

Dr. Coolidge: If a foreign body is in the larynx, and is not large enough to cause obstruction, the principal danger to life lies in the possibility of its becoming dislodged downwards and getting into a bronchus. Consequently the first and most important thing to do is to have tracheotomy instruments ready, so that if the foreign body gets into the trachea it may be removed as soon as possible. It is safer to do a tracheotomy first than to run any great risk of pushing the foreign body from the larynx into the trachea. The giving of ether must be done with great care to avoid sudden inspirations. It is often difficult, either with or without ether, to work accurately with a laryngeal mirror and laryngeal instruments. The autoscope of Kirstein offers certain advantages for the extraction of foreign bodies from the larynx. If a straight speculum can be introduced and the larynx brought into view, and straight instruments used through that straight speculum, I am inclined to think it will be very much easier to remove it. These cases are not common, and I have not yet had an opportunity to try it. Killian has passed a straight tubular speculum through the larynx into the trachea. I have found and removed a broken piece of a rubber tracheotomy-tube from a bronchus by passing a female cystoscope downwards through the tracheal wound.

Dr. Farlow: The case which Dr. Coolidge has just reported reminds me of one spoken of by Dr. Moritz Schmidt. A colleague of his was called to a family in which there were several children, one of whom was said to have swallowed a chain. The child was treated with bread and potato, followed by copious doses of castor-oil on the next day. Three days later the chain was passed without difficulty, but by the brother of the boy to whom the bread and castor-oil had been given.

The examination of the larynx under ether in young children is often very difficult, in my experience, especially on account of the flow of mucus, and plenty of assistance and strong light are essential. It is very different from operating on the fauces or postnasal space. In wiping out the mucus it is possible to push the foreign body into the trachea. Dr. Escat, of Toulouse, has devised a tongue-depressor with two branches at the end to go into the fossa at the base of the tongue and pull the epiglottis and larynx forward and upward, thus allowing a view of the larynx without having to use the throat mirror. Dr. Mount-Bleyer, of New York, had already made use of a long tongue-depressor, roughened at the end, to be used for a similar purpose.

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[2] See page 516 of the Journal.

Dr. **Williams**: In regard to foreign bodies, I should like to ask whether it would be worth while to have the inner one of the tracheotomy-tubes made of silver, as they used to be. I have known of two cases within the last year or two where the tube had slipped down and got into the trachea or below, but it was impossible to get any trace by the x-ray examination, because it was made of hard rubber or aluminum, neither of which substances can be clearly seen by the x-rays. I recall, on the other hand, one case where a child had swallowed a cent, was coughing a good deal, and had a great deal of trouble, but the cent could not be found by the ordinary means of examination. The patient was then brought to me and it was very easy to see the cent in the stomach with the x-rays.

Dr. **Richardson**: I have had four cases of foreign body in the air passages, two in the larynx, and two in the trachea, and two of the cases bear on this paper very closely. The first case was that of a child,— now grown up,— a boy with dyspnea, which required almost immediate tracheotomy. I had time to have the patient moved into the hospital, and I extracted from the larynx an orange seed. The next case was that of a child about three years old with a bone in the trachea. A third case was that of a child in Chelsea who was supposed to have some trouble in the throat, it was not known what. An attempt had been made to examine the larynx and to remove a safety-pin which the child was supposed to have swallowed. I opened the trachea, and could see the rounded end — the spring end — of the safety-pin sticking from the larynx into the trachea, and I removed it without difficulty. The fourth case was that of a child who had great dyspnea, and I found in this case a small piece of French chalk.

What I always fear in operating upon these cases is that my efforts at dislodgment of the foreign body from the larynx may change its position from one that is accessible to one that is inaccessible. From below it is very easy to remove from the larynx a foreign body, and it is, of course, almost impossible to remove a body that is firmly impacted in the bronchus. I have demonstrated on the cadaver the possibility of reaching the primary bronchus by dissection through the thorax. I believe, however, that the only time that this operation was attempted on the living it was fatal.

These cases come to the general surgeon because of the impending death from suffocation. In these cases one cannot wait for the skilled specialist; he must go in and remove the body as soon as he can, and by the easiest and surest route, — through the trachea. In the first case referred to I did not know where the orange seed was concealed; it was in the trachea somewhere. As soon as we exposed the trachea fully the orange seed became detached and came down. In the two other cases of freely movable bodies in the trachea we were ready the moment the trachea was opened to catch the body at the first expiration. When the trachea was opened the child coughed, and we were ready to catch the foreign body and thus prevent its going down. On opening the trachea, the foreign body would be likely to be drawn into the deep passages by the first deep inspiration.

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NEW YORK NEUROLOGICAL SOCIETY.

Stated meeting, February 7, 1899, Joseph Collins, M. D., Vice-President, in the chair.

TWO CASES OF PARTIAL SPINAL CORD INJURY.

Dr. **Pearce Bailey** presented two cases of this kind. The first was that of a man who, on December 9, 1898, fell several feet, striking on his head, and became unconscious. On recovering consciousness there was tingling in both upper and lower extremities. There were no disturbances of the bladder or rectum, and there was no real paralysis. He soon afterward left the hospital, but since then had been troubled with pain and stiffness in the neck, and with numbness in the extremities on the right side. Examination at the present time showed anesthesia of the right forearm and right leg, more marked in the latter. There was also a difference in the palpebral fissures. The left pupil was the smaller and was less responsive. There was no clonus, no paralysis and no twitchings. There was a distinct prominence in the cervical region, but the stiffness of the neck was rapidly diminishing. The case was looked upon as one of slight unilateral hemorrhage in the sixth cervical segment, with possibly some contusion.

The second case was that of a man, forty-three years of age, who had been squeezed between two heavy masses in an elevator shaft last November, and while thus caught the elevator had descended upon his head, and pressed him down to the floor. He had not regained consciousness until after reaching the hospital. There was then severe pain in the neck and tingling in the fingers. He had control over the bladder and rectum. Examination at the present time showed anesthesia over the right deltoid region, and exaggeration of all the reflexes, but the right patellar reflex was not so lively as that on the left side, and there had been a left foot clonus. The case was an incomplete type of Brown-Séquard's paralysis. In view of the forcible flexion of the neck, it was almost certain that there had been a hemorrhage into the cord.

Dr. **Edward D. Fisher** said that he had at present under observation a case giving a rather striking history, yet he had not been able to convince himself of the existence of a serious lesion within the spinal cord. His patient, a boy, while playing football had been seized by the chin and the head dragged forcibly down onto the chest. He had lost consciousness for about an hour. Following this there had been complete loss of sensation about the shoulders, and considerable difficulty of respiration. When seen by the speaker one month later the right arm had been very much more affected than the left; there had been evident wasting of the hand muscles; the reflexes had been greatly exaggerated, and sensation of all kinds had been considerably modified. This condition had improved for several weeks, but about eight weeks after the injury the left side had shown marked wasting, while the right had improved. The boy had then been placed in a spinal support, and had greatly improved, although the reflexes were still exaggerated.

His diagnosis of the case had been meningeal hemorrhage, and possibly a slight hemorrhage into the spinal cord, but because of the history just given he could not feel that there had been a very serious loss of substance in the spinal cord. The condition of the reflexes seemed to indicate some compression outside of the cord, either the result of hemorrhage or of slight dislocation of the vertebræ. Three months had now elapsed, yet the boy was only just able to move around. Unless there were paralyses associated with atrophy he did not feel sure of the existence of a large hemorrhage into the cord.

Dr. George W. Jacoby said, in this connection, that he believed cases of this kind were examples of subarachnoid hemorrhage, and the diagnosis could be made by lumbar puncture. If pure fluid, free from admixture with blood, were drawn off, there was evidently no subarachnoid hemorrhage. He also thought that this procedure possessed some therapeutic value.

Dr. Bailey said that the diagnosis in his cases had been based mainly on collateral evidence. The records of autopsies showed that extradural hemorrhages were extremely rare, except when associated with mutilation of the cord. In the examinations that he had made on spinal cords of several persons who had met violent deaths from general traumatism, he had found small hemorrhages into the cord without any fracture of the vertebræ. This was particularly true of injuries in the cervical region.

A CASE OF SPINAL CORD LESION WITH ANOMALOUS SYMPTOMS.

Dr. W. M. Leszynsky presented a man, thirty-five years of age, a native of Sweden. He had first come under observation in May, 1898, but had returned on January 21, 1899. In June, 1896, he had fallen from a considerable height, and this had been followed by paralysis of the lower limbs. There was an area of anesthesia on the right buttock, and also retention of urine. He now complained of frequent numbness and burning sensations in both feet and legs, often with incontinence of urine. There was no previous history of alcoholism or syphilis, and he was a well-developed, healthy-looking man. On attempting to stand there was marked clonus of both lower extremities. In the sitting position he could fully extend both legs. While in the prone position voluntary flexion of the legs on the thighs was impossible. All of the paretic muscles were flaccid, and electrical examination showed decrease in faradic irritabillty. Ankle clonus was well marked and persistent on both sides, as was also the Achilles reflex. The left knee-jerk was absent, and the right knee-jerk was barely perceptible. There was, however, a contraction of the vastus externus. Sudden and forcible pressure downward on the gluteus medius muscle on both sides produced a persistent clonus. There was a mild cystitis present. Over certain areas on both legs there were complete analgesia and marked impairment of the temperature sense. The preservation of the tactile sense, and its bilateral distribution, substantiated its spinal origin. The abdominal reflex and the left knee-jerk were the only reflexes absent. Perhaps the most peculiar feature of this case was the presence of ankle clonus with loss of the knee-jerk. The lesion evidently extended irregularly from about the tenth dorsal to the upper sacral segment.

DEMONSTRATION OF THE BRAIN OF A CASE OF SENSORY APHASIA.

Dr. Joseph Collins reported the case of a negress, who had had sensory aphasia. The patient when first seen had had a moderately typical hemiplegia, and at intervals of eight months she had had attacks of epilepsy. The most striking defects of spontaneous speech were amnesia of words, particularly of nouns, and paraphasia. She could usually tell her name, but not the names of members of her family or her residence. It was impossible for her to repeat the simplest sentence after it had been spoken. She could sing the airs of popular tunes, but could not get the words in right. There was loss of comprehension of written and printed words. After repeated examinations it had been finally decided that right lateral hemianopsia existed. There was a slight degree of word deafness, which became more apparent the longer the case was studied; it was due apparently to functional word degradation. There was apparently a lesion of the visual centre and subjacent white substance. If she were asked to say "B," she might say "C" instead, and in other ways she presented many instructive contrasts in connection with her aphasia.

On post-mortem examination, the brain was extremely small, and the left hemisphere was distinctly smaller than the right. There were also three areas of softening in the left hemisphere — one involving the middle third of the ascending parietal convolution; a second area, situated in the posterior end of the inferior parietal convolution, and involving the entire angular gyrus except its inferior portion, and a third area, in the posterior end of the supratemporal convolution. The first area of softening measured three centimetres perpendicularly and one-sixth centimetre at the widest part. The second area was the largest, measuring in its antero-posterior diameter two centimetres, and one and five-tenths centimetres vertically. The most conspicuous alteration of the superior temporal convolution was its shrinkage, until, as compared with the other side, it looked like a ribbon. The pia was not adherent except one portion on the left side, and over the posterior end of the fissure of Sylvius. When the pia was stripped from the fissure of Sylvius it was seen that the destruction of tissue in the areas referred to had been greater than had appeared at first sight. The cuneus had remained intact. The base of the brain showed no abnormalities except the relative smallness of the left hemisphere. The optic nerves and chiasm were normal, the blood-vessels were not thickened, and there was no evidence of meningeal inflammation. The medulla oblongata and cerebellum were normal in appearance and relationship. These findings seemed to him exceedingly interesting, in view of the clinical history and the diagnosis made during life. He expected, on dividing the brain, to find that the optic radiations had been severed, thus giving rise to the homonymous hemianopsia.

Dr. Fisher expressed his surprise that in a case lasting only three years there should have been such a marked difference in the two hemispheres.

(*To be continued.*)

The Latest Cure for Consumption. — The hypodermic injection of formalin is advocated by Professor Cervello, of Palermo, as a radical cure for tuberculosis, according to the *Medical Record*.

ANNUAL MEETING OF THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

THE annual meeting of the American Medico-Psychological Association, founded in 1844 as the Association of Medical Superintendents of American Institutions for the Insane, was held in New York from the 23d to the 26th of May. On the opening day addresses of welcome were made by BISHOP POTTER and, on behalf of the medical profession of New York, by DR E. G. JANEWAY.

In his address, the President, DR. HENRY M. HURD, of Baltimore, advocated the devotion of more attention to the study of insanity, and especially from a clinical point of view, in the curricula of the medical colleges.

The first regular paper was by DR. A. B. RICHARDSON, of Massillon, Ohio, on

THE PRACTICAL VALUE OF PROPHYLAXIS IN MENTAL DISEASE,

in the course of which he deprecated in strong terms the marriage, except under specially favorable conditions, of persons inheriting mental defects.

DR. EDWARD COWLES, of Waverley, Mass., in a paper on

PROGRESS IN THE CLINICAL STUDY OF PSYCHIATRY,

contended that heredity was not the determining cause of mental disease, but that insanity was in all cases the result of distinct pathological processes.

THE IMAGINATION IN RELATION TO MENTAL DISEASE.

DR. R. H. CHASE, of Philadelphia, read this paper, in which he expressed the opinion that the tendency to lie or exaggerate, noticed in the insane, was not the result of a blunted moral sense, but of a distorted imagination, which made it impossible to distinguish fact from fancy.

DR. RICHARD DEWY, of Wauwatosa, Wis., spoke of the danger of mental contagion from association with the insane, and incidentally advocated the judicial ending of the lives of the hopelessly insane.

In the discussion of Dr. Dewy's paper one member stated that in an institution with which he was connected seven of the attendants became insane in the course of seven years, and another mentioned the case of two sisters who became insane while caring for a third sister who was affected with insanity.

Two papers of interest, by DRS. A. T. HOBBS, of London, Ontario, and W. L. WORCESTER, of Danvers, Mass., respectively, were on wound infection and on renal disease as factors in the causation of insanity.

One of the most important papers presented on the second day was by DR. CARLOS F. MACDONALD, of New York, on

THE LEGAL VERSUS THE SCIENTIFIC TEST OF INSANITY IN CRIMINAL CASES.

He criticised as in direct conflict with the laws of nature and the discoveries of science the decision of the highest court in the State of New York, that the test upon which the responsibility of a criminal who pleaded lunacy is established is the knowledge of the distinction between right and wrong and the knowledge of the quality of the act committed. Such a test, he said, was a serious menace to human rights and liberty. As a prerequisite for responsibility the defendant must possess the ability to choose the right, and the real questions of fact to be decided in any such case were: (1) Did the defendant at the time of the alleged crime rationally appreciate its nature, and, if so, did he possess the power of the will to choose between right and wrong? (2), if he had lost the power of choosing with reference to this particular act was the loss due to disease or to the heat of passion, or some other self-induced state?

In a paper on

THE PSYCHOLOGY OF CRIMINALS AND A PLEA FOR THE ELEVATION OF THE MEDICAL SERVICE OF PRISONS

DR. J. B. CHAPIN, of Philadelphia, contended that grave crimes did not necessarily imply a depraved nature, since a person possessing keen moral susceptibilities might be overcome by a sudden passion, leading him to crime.

In the evening, the annual address before the Association was delivered by DR. FREDERICK PETERSON, of New York. It was largely devoted to the psychiatry of the future, and in the course of it he said: "Before twenty years of the next century have passed there will be psychopathic hospitals in many of our cities where now there are none. The profession as a whole will become more interested in mental disorders. The chairs of psychiatry in our medical colleges will become distinct from chairs of neurology. In the city psychopathic hospitals would gather all the spirits eager for new discoveries on these lines. Attached to the hospitals will be a variety of laboratories where the biological side of man may be studied by experts."

On May 25th a large number of papers were read. Among them was one on

JUDICIAL ERRORS IN LUNACY,

by DR. GEORGE VILLENEUVE, of Longue Pointe, Quebec, who recited a large number of instances, taken from reports made in France, Germany, Scotland, Canada and other countries, in which the unrecognized insane were condemned by the courts as responsible criminals. From the report of Dr. Paul Garnier, presented to the Anthropological Congress in Brussels, it appeared that in five years' time no less than 255 insane persons in France were thus condemned and afterwards sent to a special infirmary for examination.

DR. G. A. BLUMER, of Utica, read a paper on

THE CARE OF THE INSANE IN FARM-DWELLINGS,

in which he gave a detailed discription of the country-colony system of the Utica State Hospital, and stated that after the farm was established the improvement that occurred in the patients' condition exceeded the most sanguine expectations.

DR. CHAS. A. DREW, of Massachusetts, read a paper on

THE IMPORTANCE OF EYE-STRAIN AS A FACTOR IN THE PRODUCTION OF MENTAL DISEASE.

DR. J. F. EDGERLY, of Oakbourne, Pa., read a paper on

THE TREATMENT OF EPILEPTICS IN COLONY,

in which he said that the experiment of providing suitable employments for patients of this class in healthful country surroundings had proved so successful that it could be asserted with confidence that in the treatment of no other form of mental disease were the benefits derivable from the colony system so noticeable as in the case of epilipsy.

In the afternoon the Association met in the rooms of the Pathological Institute of the New York State Hospital for the Insane, and there was a discussion on dual consciousness, Dr. Ira Van Giesen, of New York, presenting the physiological, and Dr. Wm. A. White, of Binghamton, the psychological, aspect of the subject.

At the closing session on the following day, Dr. A. Hrdlicka, of New York, read an interesting paper on

THE BRAIN OF AN ESKIMO.

The brain in question was that of Kusham, an adult, who was one of the six Eskimos brought to New York by Lieutenant Peary. Four of the party had died. As a whole, he said, the brain was heavier and larger than the average brain of the white of similar stature. The two hemispheres of the cerebrum differed widely in their conformation, and the whole left hemisphere was slightly larger than the right. The parts in which were located the centres of the senses of sight, hearing and smell were largely developed, and these probably exceeded in extent the same centres in the average brain of whites.

A committee, of which Dr. Cowles was chairman, was authorized to prepare a manual for training-schools for nurses in hospitals for the insane.

Drs. Peterson and A. E. MacDonald were appointed delegates, respectively, to the British Medico-Psychological Association and the British Medical Association. It was voted that the meeting of the Association next year should meet at Richmond, Va., during the first week of May.

On May 24th the members of the Association visited, by invitation, the Manhattan State Hospital for the Insane on Ward's Island, and on May 26th the asylum at Morris Plains, N. J., and the Department for the Insane of the New York Hospital at White Plains.

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Recent Literature.

Marriages of the Deaf in America. By Edward Allen Fay, M.D. Washington, D. C.: Volta Bureau. 1898.

This book is the outcome of the work of Dr. Fay, editor of the "American Annals of the Deaf." who collected the material for the United States census of 1890 relating to the deaf. The book is largely statistical and is prepared with extreme thoroughness and care. Nearly three-fourths of the pages consist of a tabular statement, comprising the known data in regard to the marriages of the deaf. There are also ninety-two short tables which present in concise form the results of a careful grouping of these facts.

The inquiries which were sought were the following:

(1) Are marriages of deaf persons more liable to result in deaf offspring than ordinary marriages?

(2) Are marriages in which both of the partners are deaf more liable to result in deaf offspring than marriages in which one of the partners is deaf and the other is a hearing person?

(3) Are certain classes of the deaf, however they may marry, more liable than others to have deaf children? If so, how are these classes respectively composed, and what are the conditions that increase or diminish this liability?

(4) Aside from the question of the liability of the offspring to deafness, are marriages in which both of the partners are deaf more likely to result happily than marriages in which one of the partners is deaf and the other is a hearing person?

The whole number of marriages considered was 4,471, extending over a large part of the present century.

From the final summary of conclusions, it appears that marriages of the deaf are more common in America than in Europe.

Marriages of the deaf have increased rapidly during the present century, owing probably to greater facilities of acquaintance afforded by education and the consequent ability to marry and support families. A majority of the deaf have married deaf rather than hearing partners.

Marriages of the deaf are probably somewhat but not very much less productive than ordinary marriages. Marriages in which both partners are deaf are somewhat less productive than those in which only one partner is deaf. Between marriages of the congenitally and those of the adventitiously deaf there is not much difference in productiveness. Marriages of deaf persons are far more liable to result in deaf offspring than ordinary marriages, and, on the other hand, marriages of the deaf are far more likely to result in hearing offspring than in deaf offspring.

Taking the deaf as a whole, without regard to the character of the deafness, marriages in which both of the partners are deaf are not more liable to result in deaf offspring than those in which one of the partners is deaf and the other is a hearing person. Congenitally deaf persons, whether they are married to one another, to adventitiously deaf, or to hearing partners, are far more liable to have deaf offspring than are adventitiously deaf persons.

Deaf persons having deaf relatives, however they are married, and hearing persons having deaf relatives, and married to deaf partners, are very liable to have deaf offspring.

The marriages of the deaf most liable to result in deaf offspring are those in which the partners are selected by consanguinity.

Marriages in which both partners are deaf are more likely, other things being equal, to result happily than those in which one of the partners is deaf and the other is a hearing person. The more favorable conditions where both partners are deaf are, doubtless, the strong bond of fellowship growing out of their similar condition, the ease and freedom with which they communicate with each other, and the identity of their social relations, outside the domestic circle.

A New Musical Composition. — Dr. John C. Hemmeter, one of the professors in the University of Maryland, has written the music to the Twenty-third Psalm. The composition is written for full male chorus, solo quartet and orchestra. Professor Hemmeter is the composer of the cantata "Hygiea," which has been produced in Germany. His latest composition is dedicated "In Memoriam" of Dr. Hemmeter's father, the late Mr. John Hemmeter. Dr. Hemmeter has a literary reputation as the author of two important works on digestive diseases.

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SCIENTIFIC STUDIES AT PUBLIC INSTITUTIONS.

With the growth of cities and the resulting concentration of population, it is evident that statistical studies of value may be made in constantly increasing number in the various institutions devoted to the care of any vicious or diseased or degenerate class in the community. Not many years ago Weir Mitchell entered a vigorous protest against the lack of really valuable work done in institutions for the insane, where opportunities of the most tempting character are offered were but the enthusiasm for research sufficiently developed to make use of them. This appeal has no doubt had its effect, and we see everywhere a renewed activity in the accurate study and careful tabulation of facts relating to insanity. Progress has, however, been slower in other quarters. There is no doubt that the public institution, particularly if it harbors those for whom treatment is, in a measure, unavailing, is still a bugbear to the majority of physicians, whose sole interest is too frequently merely the short-sighted one of the immediate relief of abnormal physical conditions. If modern medicine has demonstrated anything, it certainly is the fact that in preventive medicine lies the real hope of the future. To cure will always be possible in a limited, and we hope constantly increasing, number of cases, but to prevent the conditions which lead to disease will remain the field in which the best energies of the strongest men should be continually employed. We are well aware how much has been done in this regard through the results of bacteriological research and the formulation of principles to which such investigations have led, both in medicine and surgery. Certain most fatal conditions and diseases have practically ceased to exist as menaces to the health of the community, so vigorous have been the measures of protection based on careful scientific deductions.

While clearly recognizing this fact we are disposed to urge all the more strenuously the necessity of continued work toward the solution of the still more difficult problems, which are now more than ever before forcing themselves on our attention. We refer to the fundamentally important question of degeneracy in its various forms as due to venereal disease, alcohol and the many factors which, through generations, contribute to ultimate inefficiency. These are matters the social and medical bearings of which are self-evident; their adequate study is only possible in institutions where such persons are collected in large numbers, as we see them in, or in the immediate neighborhood of, great cities. We are not alive to our opportunities in this regard, and the criminal anthropologist has come into existence as a specialist, whose function it is to study into the causes of crime and degeneracy in the wide sense. The medical profession should be broad enough to include this field, and to direct its attention in a thoroughly scientific way to those conditions which ultimately tend toward the moral and physical degradation of the individual and the race. In every large community we have our institutions filled with subjects of study — the dumb and blind and deaf, the mentally defective, the victims of alcohol and syphilis and the degenerate from combined causes. These all demand study and tabulation; evidently the work is difficult and will be slow in leading to definite results, but this sort of investigation should be encouraged all the more on that account if we are ultimately to arrive at principles of significance and value. With the present over-supply of young well-trained physicians, all aspiring to do the same thing, it might be well if the attention of some could be directed into such channels of research. We are convinced that our institutions, many of them almost unknown to medical men, would welcome investigation, the results of which would ultimately conduce to the welfare of the community.

The need of a retention hospital for syphilis occurs to us at this moment. Could public opinion, led by medical opinion, be induced to see the need of such an institution, and could the results of the study of these cases demonstrate to the public the value of such investigation, we have no doubt a distinct benefit to the health of the people would ensue. To bring about such reform, it is necessary for medical men to profit by opportunities which they already have or might have; to enter with enthusiasm into the arduous work of statistical and anthropometric study of the vicious and diseased as they are seen in our great unvisited institutions, and to tabulate results. Such work as that done by Bowditch and Porter on measurements of normal school children is continually bearing fruit and leading, indirectly perhaps, but none the less surely, to wiser regulations and more rational treatment of the growing child.

We need, also, as physicians, to turn our attention to the pathological side of the problem, in all its bearings. That this will be done more and more there can be no question. For example, Hrdlicka has recently published a valuable series of observations based on one thousand children of the New York Juvenile Asylum and about one hundred from the New York Colored Orphan Asylum, a class to be regarded, in general, as on the border line between normal and degenerate. Fay, of Washington, has within a few weeks published a statistical book relative to marriages of the deaf in America, evidently a matter of much social significance and scientific value in determining certain of the subtle questions of heredity.

It is this sort of work which we need to apply everywhere and to all classes. We complain of lack of opportunity because we fail to seek it out, although it lies before our very eyes. The opportunities, for example, which the hospital for chronic disease offers have not begun to be appreciated. If our ultimate aim in medicine is prevention, the only method of reaching our end is by the patient investigation of large numbers of cases, extending over long periods of time, and this opportunity for a variety of conditions the too-often derided "institution" alone offers.

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THE QUESTION OF FEES.

It not infrequently happens that patients consider that the charges of their physicians should be reduced or perhaps entirely omitted in those unfortunately frequent cases in which no benefit has resulted from the treatment instituted. Quack methods have no doubt done much to reinforce this idea. The principle of "no relief," "no fee," is so prominent a feature of the advertisements of irregular practitioners that the conscientious physician, whose one object is to do his best by his patient, has frequently been placed in a position which he in no way deserves. Not long since a case came to our knowledge in which, with perfect seriousness, a person offered a physician in good standing $100 if he would cure his wife, who was suffering from a hitherto intractable affection, with the implication that there would be no fee should the treatment fail. As the event proved, the cure was effected for a much smaller sum.

Whatever individuals may choose to do under special circumstances, in the way of modifying fees for unsucessful treatment, there is evidently a principle of importance involved, which every self-respecting physician should bear in mind. In the first place, it is evident that medical practice is too little of a science as yet and, in fact, always will be, to permit of exact prophecies as to the outcome of any morbid condition, and, even could the end be clearly foreseen in any given case, it could have no real bearing on the point at issue. The one ideal we have to hold up before ourselves is to do as well as we individually can, in the light of the progress of medical science, regardless of ulterior ends. If this be done, and absolute honesty of motive govern the physician's conduct, the question of fees is at once relegated to its proper place, and the physician receives the reward for his conscientious endeavor, whatever the outcome of his treatment may be.

An apparent, but not real, complication is introduced in those cases, also not infrequent, where a distinct error in judgment or knowledge is made, leading to more or less unfortunate results. Here, again, the principle is plain. The physician has done his best and is worthy his reward, although he may have made a mistake which another might not have made. When such questions come to an issue, however, it is the law which must decide — and the law is clearly on the side of the physician. In a valuable series of articles by Arthur N. Taylor, LL.B., in the *New York Medical Journal*, on "The Law in its Relations to Physicians," he says on this point[1]:

> It does not necessarily follow that a physician has failed in performing his legal duty to his patient, and is therefore not entitled to compensation, because he has mistaken the nature of his disease and treated him for an ailment from which he is not suffering. In a recent case brought in New Jersey by a physician to recover a fee, the defendant interposed the defence that the physician had prescribed and administered remedies for a disease which he had not. The trial justice instructed the jury that this insistment of the defendant, even if true, would not prevent a recovery; that the question was whether the physician exercised proper care and skill as a physician; that, if the jury should conclude that the doctor was mistaken in the nature of the defendant's disease, they must go still further, and say that a want of care and skill was exhibited. If no want of care or skill appeared, he was entitled to a fair compensation, although he fell into a mistake. This is undoubtedly a correct statement of the law, and in applying it to a given case it remains for the jury to determine whether or not, as a matter of fact, the physician has failed in bringing the proper amount of knowledge to the case or did not exercise a reasonable and ordinary degree of skill and care.

In other words, it is always a question of motive, provided only reasonable care and skill on the part of the practitioner be assumed. This the law definitely recognizes, and as physicians having the welfare of the profession of medicine at heart it is surely our duty to disseminate these facts among the laity, to the end that the physician's efforts and not merely his results be recognized as the object for which the fee is paid.

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"THE DEBT OF THE PUBLIC TO THE MEDICAL PROFESSION."

This is the season for medical orations and addresses the country over. They are rarely original, their scope is narrowly limited, their aim is to stimulate rather than inform. We are all of us well aware that bacteriology has done much in the prevention of disease, and that anesthesia and asepsis are boons to humanity, but we are glad to hear it all over again from the lips of men of distinction. The object of such discussions, however, is rather to form a connecting link between the profession of medicine and the laity. It is one of the few legitimate ways the physician has of impressing upon the world at large his true place in the march of progress. Such addresses are intelligently read in the public press, as mere technical work cannot be, and something is thereby done to offset the ungrounded aspersions which so frequently find a welcome place in the daily papers.

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[1] May 1, 1899.

In his recent address before the Medical and Chirurgical Faculty of Maryland, Dr. W. W. Keen has done a real service in telling once more in plain language of the progress of medical science, and in bringing statistics to the support of his contention. He analyzes with care the various conditions which in times past have proved so great a menace to the health of various communities and peoples, and shows by what means improvement has been effected. We are all more or less familiar with the details, but it does the profession no harm and certainly is good for the people at large to be told in vigorous language that vaccination is an incalculable boon; that typhoid fever should not exist, and that its spread is due to culpable negligence; that vivisection properly practised is a necessity of progress. These facts and many others we must force people to recognize, and the oration offers the opportunity needed. Dr. Keen has richly availed himself of his opportunity, and has presented an array of facts which must carry weight to the most conservative opponent of the methods of medical science.

Dr. Keen is as confident of the future as he is definite in his description of the conquests of the past. For example, he writes of yellow fever:

"The efforts of our officers, especially of General Wood, whom we gladly recognize both as doctor, diplomat and warrior, will bear the richest harvest of good by exterminating the disease in Cuba itself. Before this we could only erect a defensive wall against the disease; now we can prevent it in its very home."

Speaking of the shortcomings of surgical anesthetics, he expresses the opinion that an ideal anesthetic will be discovered, as certainly as that the twentieth century will soon dawn upon us.

We put the address down with a feeling that sometimes grows weak within us, that medicine has had, with all its shortcomings, a past rich in achievement, and will have a future of increasing usefulness.

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MEDICAL NOTES.

The Lenval Prize. — The Lenval prize for an improvement in the treatment of deafness will be awarded at the International Otological Congress meeting in London in August.

A new State Laboratory. — A State Bacteriological and Pathological Laboratory has been established for Delaware. Professor Chester, State bacteriologist, has been appointed director.

The Chair of Pathology in Glasgow University. — This sought-for chair, rendered vacant by the death of Professor Coates, has been conferred upon Professor Muir, of St. Andrews, who is well known as a pathologist.

Appointment of Dr. Heinrich Bonhoff. — Dr. Heinrich Bonhoff, privat-docent in the University of Berlin, has been appointed extraordinary professor of hygiene at the University of Marburg.

Appointment of Prof. J. C. Webster. — Prof. J. C. Webster, of McGill University, and formerly of the University of Edinburgh, has accepted the chair of obstetrics and gynecology in Rush Medical College, Chicago.

Dr. Mayer Appointed a Co-Editor. — Dr. Emil Mayer, of New York City, has been appointed co-editor for America in the *International Centralblatt für Laryngologie und verwandte Wissenschaften*, of which Sir Felix Semon, London, is editor-in-chief.

Deaths in the Philippines. — According to statistics published by the *Philadelphia Medical Journal*, the losses among our troops in the Phillippines since August 6, 1898, amount to 543 deaths, 1,223 wounded, and 16 missing, a total of 1,782. It is to be feared that the coming rainy season will tend to increase this number materially.

Increasing Duration of Life in Chicago. — According to the *Monthly Bulletin* of the Chicago Health Department, measured by the average age at death of all who died in the city of Chicago thirty years ago, and of those who died last year, the average duration of life in this city has more than doubled during a single generation. That is to say: In 1869 there were 6,488 deaths recorded, with the age of each decedent given. The aggregate of the ages footed up 90,336 years, or an average of 13.9 years for every individual decedent, old and young. Last year there were 22,897 deaths similarly recorded, with an aggregate of 672,540 years of life, or an average age for each decedent of 29.4 years. This is an increase of 111.5 per cent.

College Strength Tests. — The College Gymnastic Association, under the committee made up of Dr. D. A. Sargent, Harvard, Dr. J. W. Seaver, Yale, and Dr. W. L. Savage, Columbia, has recently made public the results of its tests. Seven colleges of the Association have made returns this year. The parts of the body tested were: Back, legs, right forearm, left forearm, lungs, upper arms (triceps) and chest, upper arms (biceps) and back. The records of the first 50 men in each college were tabulated, and then the records of the fifty who reached the highest number of points for all colleges. Of the seven colleges that sent in returns, Harvard leads, with a total of 55,437 points for her first 50; Columbia comes next, with 50,096.3; Amherst third, with 48 090.6; University of Minnesota fourth, with 45,356.8; Dickinson College, fifth, with 43,318.4, and Wesleyan sixth, with 36,713 points. University of New York, the seventh college to submit returns, was much lower still. Harvard's first 50 average 22 years and 3 months in age, 5 feet 9.8 inches in height, and 160 pounds in weight. In these respects she surpasses all her opponents, Amherst coming next in point of age, aggregating 21 years and 10 months, and Columbia in height and weight, averaging 5 feet 9.2 inches, and 154 pounds, respectively. Harvard's first 50 average 1,108.7; Columbia, 1,001.9; Amherst, 961.8; University of Minnesota, 907.1; Dickinson, 866.6, and Wesleyan, 734.2. C. G. Herbert, of Harvard, attained the highest number of individual points in the contest, with 1,595.4. Yale and the University of Pennsylvania are two of the important athletic colleges that have failed to send in a report.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, May 31, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 57, scarlet fever 29, measles 106, typhoid fever 10.

Albany Medical School Alumni Association. — An Association of the New England Alumni of the Albany Medical College has been organized with the following officers: T. D. Crothers, M.D., president; W. G. Murphy, M.D., secretary; John O'Flaherty, M.D., treasurer; executive committee, G. E. Holmes, M.D., R. E. Ensign, M.D.

Small-pox in Fall River. — It is reported that several cases purporting to be small-pox have appeared in a crowded region of the city. None of them have as yet proved fatal, and it is expected that the rigid quarantine precautions which are now being taken will prevent any spread of the disease. Nearly a hundred persons live in three houses, all of them French Canadians, and many of them unable to speak English. Vaccination has been liberally practised since the discovery of the disease.

NEW YORK.

Incorporation of a Cancer Hospital Refused. — The State Board of Charities, in which by the present law lies the authority of passing on charters for all hospitals and dispensaries, has refused the application of Mrs. Rose Hawthorne Lathrop for articles of incorporation for her cancer hospital in the lower part of the city, known as the Free Home for Incurable Cancer. Dr. Stephen Smith, of New York, the commissioner of the Board, to whom the matter was referred for investigation, reported adversely on the application upon the following grounds: While the respectability and motives of the persons asking for the articles are unquestioned, such an institution is not now needed in the locality in which it is situated. The patients can be accommodated and better cared for in the hospitals of the Department of Public Charities, with their efficient corps of trained nurses and skilful attending and resident physicians. Moreover, the institution is inadequately provided with medical attendance, its location is unhealthy, and its financial resources too uncertain and precarious to warrant a belief in their permanency.

Commemorative Tablet, Columbia University. — At a meeting of the Alumni of the Medical Department of Columbia University (College of Physicians and Surgeons), held May 25th, it was voted to place a memorial tablet in the college building to commemorate the deaths, during the Spanish-American War, of its three members, Drs. John Blair Gibbs, Lindheim, and J. V. D. Young.

Graduating Exercises of Training School of City Hospital, Blackwell's Island. — The twenty-fourth annual graduation exercises of the Training School for Nurses of the City Hospital on Blackwell's Island were held on May 20th, when diplomas were awarded to a class of thirty-nine who had completed the regular two years' course, and seventeen who had taken the post-graduate course.

Shorter Hours for Drug Clerks. — The Governor has declined to permit the bill passed by the Legislature providing for shorter hours for drug clerks to become a law, stating in his memorandum on the subject that, after a careful investigation of the matter, he has come to the conclusion that, on the whole, less injustice will result from waiting another year for the proper method of relief than would result from signing the bill in its present shape.

Abolition of Garbage Works on Barren Island. — Governor Roosevelt has also refused to sign the bill providing for the immediate abolition of the garbage works on Barren Island. In his memorandum on this bill he states that he finds, by consultation with the health officer of the Port of New York, and other authorities, that serious trouble would in all probability follow upon signing it, since it neither provides, nor gives time to provide, for the establishment of any other method of disposing of the garbage, dead animals, etc., of New York City. He believes that if given three or four months, the city authorities could no doubt develop a plan for the proper disposal of the garbage, and that with this warning they can have no excuse for failure to provide such method in the future.

Death from Tea Drinking. — Peter Phelan, forty years old, who was admitted to Bellevue Hospital on May 12th in a state bordering on collapse from excessive tea drinking, died on May 26th. The autopsy showed that he was the subject of profound anemia, and of severe catarrhal inflammation of the stomach. He had been addicted to the more or less excessive use of tea from childhood, and for a long time before his admission to the hospital had been in the habit of taking thirty cups of strong tea a day.

Two Verdicts. — A verdict for $22,500 was recently returned by a Supreme Court jury in an action brought by Mrs. Anna Griffin to recover damages from the owner of a building on William Street for the death of her husband, as the result of an elevator accident. On the same day a Connecticut court awarded $10 for the death of a railway workman who was killed by the negligence of the railway's agents.

President Hadley on School Teaching of the Effects of Alcohol. — In the course of an address a short time since before the Schoolmasters' Association of New York and vicinity, Prof. Arthur T. Hadley, who has just been chosen president of Yale, incidentally made the remark: "I do not think many of you will say that the compulsory teaching in the public schools of the effects of alcohol on the human system has in any way lessened the demand for alcohol."

Dedication of new German Hospital. — The new German Hospital of Brooklyn was dedicated on May 21st, in a festive manner characteristic of our German fellow-citizens. A large platform erected in front of the hospital, and all the balconies of the buildings, were profusely decorated with flags, and taking part in the ceremonies were a volunteer orchestra of 200, the Ladies Chorus of the Arion Society, and about 700 members of the United Singers of Brooklyn. The hospital consists of a group of four buildings, connected by covered passages, and has been erected at a cost of over $250,000. The central Administration Building is four stories high, with a frontage of 58 feet and a depth of 75 feet, and on one side of it is a wing 175 feet long, which is eventually to be supplemented by a similar wing on the opposite side.

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Miscellany.

CLOSING OF WOMEN'S MEDICAL COLLEGE OF THE NEW YORK INFIRMARY.

At the commencement, on May 24th, of the Women's Medical College of the New York Infirmary for Women and Children, which was incorporated in 1864, and is the only regular medical school for women in the State of New York, the announcement was made that the college would close permanently at the end of the current college year. It is understood that the students will be admitted to the Medical Department of Cornell University, those in the two upper classes completing their course in New York, while those in the freshman and sophomore years will have to attend lectures in Ithaca, as the regulations of Cornell require that female students must take the first half of the course there. In the statement of the board of trustees it was declared that the constant tendency of the medical as well as other professional schools has been toward a university connection, until at the present time each of the other important medical schools in New York is the medical department of a university. The Women's College had fulfilled its purpose, and medical education might hereafter be obtained by women in New York in the same classes, under the same faculty, and with the same clinical advantages as men. Under these circumstances the trustees had considered it inadvisable to continue longer the maintenance of an independent school, and believed that the medical education of women could be more speedily advanced by devoting the entire energies of the Infirmary to the enlargement of its hospital, and thereby offering to women students in medicine increased clinical opportunities.

A PROTEST AGAINST BEER DRINKING.

The German Association against the misuse of spirituous drinks, according to the *Philadelphia Medical Journal*, has recently issued a circular to the students of Germany asking that the compulsion in the corps and *Vereins* to drink beer be done away with.

Stumpf, of Munich, called attention in forcible language to the lamentable habit of the Muncheners of giving beer to their children. It is a frequent occurrence, he states, to see children of two years, and even of one year, drinking out of the beer-mugs of their parents. In the women of Munich the excessive consumption of beer leads, among other disorders, to a huge fat-development in the breasts; thereby the function of the organs is impaired, and it becomes necessary to resort to artificial feeding, with all its disastrous consequences. From the figures given by Stumpf one can form an idea of the appalling capacity of the Bavarians. In a population of 5,818,544 the annual per capita consumption of beer is 243 litres, or over 250 quarts, representing an outlay of nearly $15 per annum, or, for the whole population, an expenditure of $84,834,122. And this only for a single article — beer!

From a pure economic point of view, a reform of such conditions is necessary, and from the standpoint of national character, the reform is imperatively demanded. The success of the temperance movement in England and America has served to encourage the German agitators. It is to be hoped that the habits of the nation, which are probably ineradicable, may at least be modified on a national basis, so that science and art may continue to reap the benefit of all that is noblest and best in the German character.

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MURDER AND CHILD INSURANCE.

In the *Child's Guardian*, London, for March, appears the following interesting case, relative to the moral culpability of parents in relation to neglect of their children, complicated by the much-discussed question of child insurance:

> A woman was indicted at Sheffield for neglecting her child. She had been living in a lodging-house with her two children, one of eleven years and one two and a half years old. The evidence showed that she had been in the habit of leaving her children alone and practically unprovided for during the greater part of the day. At night she came home, usually drunk. The younger child was generally very filthy and insufficiently looked after. On Saturday, Dec. 17th, the mother left the house and did not return until Sunday night. In the meantime, on Sunday afternoon, two of the women living in the house, seeing the dangerous condition of the child, took it to the police station, and, on the advice of the sergeant in charge, to a physician. He found that it was suffering from a complication of diseases, and he ordered its immediate removal to the shelter. When told of this the woman said that she was glad she had had the holiday, and *she would have the insurance money if anything happened*. On December 27th the child died. After other evidence, the jury returned a verdict of "Guilty." The recorder, in sentencing the woman to *twelve months with hard labor*, said that morally she had been guilty of the murder of her child. This was one of the cases which not only justified but called loudly for condign punishment

METEOROLOGICAL RECORD

For the week ending May 20th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...14	30.06	59	69	49	43	26	34	N.W.	W.	18	12	F.	O.	.09
M..15	30.12	54	64	44	44	57	50	N.W.	S.	11	6	C.	C.	
T...16	30.01	54	61	46	41	47	44	N.W.	N.W.	8	8	O.	O.	
W..17	30.04	52	56	49	47	45	46	N.E.	S.W.	6	12	C.	C.	.04
T...18	30.12	50	51	48	75	86	80	E.	S.E.	12	5	O.	O.	.03
F...19	29.94	49	51	47	90	90	90	S.E.	E.	4	4	O.	O.	.04
S...20	29.80	50	54	47	76	76	76	N.	N.W.	10	9	O.	O.	
☞														.20

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, May 20, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup	Measles.
New York . .	3,438,899	1139	339	9.99	17.82	1.62	3.15	1.62
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	190	49	10.07	14.84	.53	.53	.53
Baltimore . .	506,389	138	38	9.49	10.22	1.46	2.19	—
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	72	32	16.68	18.30	1.82	5.46	3.64
Washington .	277,000	101	16	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	55	20	12.74	7.28	5.46	—	—
Nashville . .	87,754	24	8	8.32	12.48	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	108,240	31	11	6.46	9.69	—	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	23	4	4.35	4.35	4.35	—	—
Lowell . . .	88,641	31	10	12.92	16.15	3.23	3.23	3.23
Lynn	66,703	—	—	—	—	—	—	—
New Bedford .	66,310	27	10	3.70	11.11	3.70	—	—
Somerville . .	61,101	14	6	14.28	14.28	—	7.14	—
Lawrence . .	57,263	17	9	11.76	11.76	5.88	5.88	—
Springfield . .	56,501	18	4	—	5.55	—	—	—
Holyoke . . .	43,424	9	—	—	—	—	—	—
Brockton . .	37,278	6	1	—	—	—	—	—
Salem	36,883	10	2	20.00	—	—	—	—
Malden . . .	34,613	2	—	—	—	—	—	—
Chelsea . . .	33,468	7	—	—	—	—	—	—
Haverhill . .	32,022	9	—	—	11.11	—	—	—
Gloucester . .	30,589	4	3	50.00	—	—	25.00	—
Newton . . .	29,716	4	—	—	—	—	—	—
Fitchburg . .	29,438	9	—	11.11	22.22	—	—	—
Taunton . . .	28,167	12	1	16.66	8.33	8 33	—	—
Everett . . .	25,338	6	1	16.66	—	—	—	—
Quincy . . .	23,549	5	—	—	20.00	—	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	8	2	12 50	25.00	—	—	—
North Adams .	20,971	8	5	12.50	12.50	—	—	—
Chicopee . .	17,842	4	1	25.00	25.00	—	25.00	—
Medford . . .	16,511	5	2	—	20.00	—	—	—
Newburyport .	14,915	9	3	22.22	—	—	11.11	—
Melrose . . .	14,032	4	1	25 00	25.00	—	25.00	—

Deaths reported 2,005; under five years of age 578; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 191, acute lung diseases 285, consumption 245, diphtheria and croup 47, diarrheal diseases 33, cerebro-spinal meningitis 29, measles 24, scarlet fever 22, typhoid fever 16, whooping-cough 11, erysipelas 8, small-pox 1.

From cerebro-spinal meningitis New York 8, Baltimore 6, Boston 5, Washington 3, Worcester 2, Providence, Somerville, Salem, Gloucester and North Adams 1 each. From scarlet fever New York 14, Boston 3, Baltimore 2, Providence, Fitchburg and Taunton 1 each. From typhoid fever New York 8, Pittsburg and Providence 2 each, Cambridge, Lowell and Lawrence 1 each. From whooping-cough New York and Pittsburg 4 each, Boston 2, Salem 1. From erysipelas New York 6, Boston and Newburyport 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending May 13th, the death-rate was 17.7. Deaths reported 3,876; acute diseases of the respiratory organs (London) 257, measles 106, whooping-cough 98, diphtheria 82, diarrhea 30, fever 26, scarlet fever 22, small-pox (Hull) 1.

The death-rates ranged from 11.1 in West Ham to 26.8 in Salford; Birmingham 15.5, Bradford 21.0, Cardiff 15.4, Gateshead 12.2, Halifax 21.3, Huddersfield 14.6, Hull 16.9, Leeds 15.1, Liverpool 25.6, London 16.4, Manchester 24.9, Newcastle-on-Tyne 16.9, Nottingham 20.5, Sheffield 20.5, Wolverhampton 22.9.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 27, 1899.

F. Rogers, surgeon, ordered to the Marine Rendezvous, Philadelphia, Pa., May 23d, for duty in connection with recruiting.

C. H. DeLancy, assistant surgeon, detached from the Marine Recruiting Rendezvous, Savannah, Ga., and ordered to the "Amphitrite."

Barton L. Wright, assistant surgeon, appointed May 16th.

E. H. Marsteeler, surgeon, detached from the "Raleigh" when put out of commission, and ordered home to wait orders.

J. M. Moore, passed assistant surgeon, detached from the "Raleigh" when put out of commission, and ordered home to wait orders.

W. F. Arnold, passed assistant surgeon, sick leave extended two months.

SOCIETY NOTICE.

The American Electro-therapeutic Association. — The ninth annual meeting of the Association will be held in Washington, D. C., on September 19, 20 and 21, 1899, under the presidency of Dr. F. B. Bishop, of Washington.

RECENT DEATHS.

Charles W. Pfeiffer, M.D., examining physician of the Street Cleaning Department, Borough of Manhattan, died May 22d, at the age of forty-five. He had been in failing health for the last two years. He was a native of Philadelphia and was graduated from Bellevue Hospital Medical College in 1878. He was formerly connected with the New York Health Department.

Joseph W. Stickler, M.D., of Orange, N. J., died suddenly at the Fifth Avenue Hotel, New York, on May 18th, of cardiac disease. He was born in Hoboken, N. J., in 1854, and was graduated from the College of Physicians and Surgeons, New York, in 1879. He was well known in connection with pulmonary diseases and was the winner of a prize awarded by the New Jersey State Medical Society for an essay of his on "The Climatology and Diseases of Essex County."

J. Burden Fulton, M.D., president of the Health Board of Irvington-on-the-Hudson, died on May 20th, at the age of fifty-two. He was a graduate of Harvard and had practised in Irvington for twenty-seven years.

BOOKS AND PAMPHLETS RECEIVED.

The Differential Diagnosis of Some Diseases Characterized by Fever of Intermittent Type, with More or Less Fixed Intervals. By William W. Johnston, M.D., Washington, D. C. Reprint. 1898.

Vitality: An Appeal, an Apology, and a Challenge. Vitality: Replies to Some Objections and a Further Appeal. By Lionel S. Beale, F.R.C.P., F.R.S., F.R.M.Chir.S., F.R.M.S. Reprints. 1898-99.

The Treatment of Tetanus by Means of Intracerebral Injections of Antitoxine, with a *Résumé* of Reports of Cases and a few Remarks on the Technique of the Injection. By George G. Rambaud, M.D., New York. Reprint. 1898.

Transactions of the American Dermatological Association at its Twenty-second Annual Meeting, held in Princeton, N. J., May 31 and June 1, and in New York City, June 2, 1898. Official Report of the Proceedings by John T. Bowen, M.D., Secretary.

Nervous and Mental Diseases. By Archibald Church, M.D., Professor of Clinical Neurology and of Mental Diseases and Medical Jurisprudence in the Northwestern University Medical School (the Chicago Medical College), Chicago; Professor of Neurology in the Chicago Polyclinic, etc., and Frederick Peterson, M.D., Clinical Professor of Mental Diseases in the Woman's Medical College, New York; Chief of Clinic, Nervous Department, College of Physicians and Surgeons, New York. With 305 illustrations. Philadelphia: W. B. Saunders. 1899.

Address.

ADDRESS OF THE PRESIDENT.[1]

Delivered at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, O., June 6–9, 1899.

BY JOSEPH M. MATHEWS, M.D., LL.D., LOUISVILLE, KY.

In assuming the duties of the presiding officer of this Association, I must confess that it is with a feeling of great diffidence. For many years I sat at the feet of the masters in medicine, as they were wont to assemble at their annual meeting, and was content to listen only to their wise counsels, to emulate as far as I could their example and to profit by the words of wisdom which fell from their lips. When I reflect upon the names of my predecessors who have occupied this chair, their great achievements in medicine, the high rank to which they attained and the good which they accomplished, it is no wonder that I assume the rôle with some trepidation. You will therefore permit me to offer you my very sincere thanks for the honor which you have conferred upon me.

In assuming the duties as your chairman I hope to be just to all, and if at any time my decisions should appear otherwise, please attribute it to my head rather than my heart. It pains me to look over this great body and recognize the fact that not only many of its most prominent members in the past are absent, but also that the majority of those who have served you as president have likewise gone to their eternal home. Let their departure remind us that we, too, must soon lay aside our armor and join the silent majority. This thought brings me to consider for a moment:

OUR NATIONAL BODY; ITS PURPOSES AND DESTINY.

I imagine that when the father of this Association, the Nestor of American medicine, called around him a few devoted friends, accomplished physicians and surgeons, and effected an organization to be known as the American Medical Association, the first thought which filled their minds was the unification of the profession which they loved so dearly. It was their desire, no doubt, to bring together each year the men who were laboring earnestly and honestly for the elevation of the profession, that they in conclave could impart to each other the advance that each succeeding year had brought forth in their chosen calling, and done in order that the sick and the afflicted could be profited thereby.

Sacrifices and great personal discomfort were endured by them to obtain the good; but what splendid results were accomplished by their efforts is evidenced in the assembling of the great body here to-day. I opine, too, that anything that partook of the nature of jealousy, unfairness, or politics was deprecated by them, but, to the contrary, they desired that peace and good-will should always obtain. What could be more beautiful than the fruition of this hope? How grand the thought that here in the mother society men of all grades, so far as education and accomplishments are concerned, be they great or small, poor or rich, the rank and file of the profession can meet on common ground and exchange views for the benefit of suffering humanity. Some must be teachers or instructors; others listeners; they each in their way contribute their mite. It may be that some member from a far-off and sparsely-settled country has heard some truth in the application of which a life may be saved, or in return he can give an experience which may prove of incalculable benefit to his more fortunate brother. Let me impress upon you, then, that no class legislation should be indulged in by this body. Let it not be said of us that we rule without reason, or that we are a set of politicians trying to secure benefit for the few against the many, or for the many against the few, for in no wise are we a legislative body. In lieu of all this, let us receive with open arms all who represent honesty, fair dealing, and entertain an honest desire to elevate the standard of the medical profession, and of this Association. Let no wrangling come into our midst, but rather let peace and harmony prevail, with love to one another, as becomes gentlemen.

SHALL WE HAVE A LOCAL HABITATION?

It is to be seriously questioned whether this Association, so numerically great as it is destined to be, or in truth is now, profits in any manner by its migration each year to distant parts of the Union. It cannot be denied but that a mistake has been made in the past in going to cities too small to entertain it. It certainly adds no dignity to this distinguished body to be thus travelling about, not to speak of the inconvenience occasioned to the majority of its members by the so doing. Nor is it right or proper to impose upon a local profession the expense and trouble that it takes to entertain it. If the members will give the subject careful thought and consideration, I believe that they will come to the conclusion that the Association should have a local habitation. The natural question would then be, where could such habitation be found? In the selection of the same many things would have to be considered: a city within easy reach, which offered the most attractive advantages. Of all, the city of Washington is the best suited. The capital of the nation, it has advantages that no other place can offer. With its great free libraries, it is the seat of learning; its magnificent Government buildings, its natural beauty, its select society, its two houses of Congress, the rendezvous of foreign representatives and diplomats, the home of the medical departments of the Government, army, navy and marine-hospital corps. Then, too, the idea is not far-fetched that the Government, liberal always, would at some time lend the Association a helping hand in the way of securing a suitable building in which to hold its meetings and to become the owner thereof. Again, it would be in touch with the legislative department of the Government, and it can readily be seen of what value this would be in securing much-needed reforms in a medical way. The *Journal* would here find the most suitable of all abodes; an atmosphere of refinement, education and wealth. Its editor would all the time be on the alert, and much profit would come to the *Journal* from such surroundings and associations. I beg of you to give this matter your most serious consideration.

IMPORTANCE OF ATTENDING THE LAST DAY'S SESSION.

I desire to call your attention to the importance of attending the general session on the last day of the meeting. Business of the very greatest importance always comes up for consideration on that day, and, strange to say, often there is scarcely a quorum present. At the meeting at Denver last year less than fifty members were in attendance on the last day of the meeting. If, therefore, resolutions are rushed through on that day which displease you, it is your own fault. Besides, if the business transacted on that day comes up for consideration at the following annual meeting, it takes up time which it has no right to. Please, therefore, see to it that nothing interferes with your attendance on that day.

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[1] From advance proofs of the Journal of the American Medical Association.

CLINICS, DINNERS, ETC.

It has been a noticeable fact for a long time that the clinics which are held each year during the meeting of the Association by the local profession of the city in which it happens to meet, very materially decrease the attendance at both the general sessions and the various sections. This should not be, and it is the duty of the proper officials of this Association to deprecate the holding of such clinics. Time and again many of the very best men of the Association have been kept away a half day, and often a whole day, from the meeting, when their counsel and presence were much needed at the different sections, or at the meeting in general session. Need I remind you that absence of the same kind and duration is often observed at dinners to which members are kindly invited. This can be easily obviated.

THE JOURNAL.

It is my painful duty to announce to you the death of Dr. John B. Hamilton, editor of the *Journal of the Association.* This Association never had a truer friend than he. Possessed of a clear-cut individuality, he was always outspoken, and what he did he at least believed to be for the best. We will miss his wise counsel in our deliberations. He made a most excellent editor of the *Journal*, and by his efforts it was brought up to the high standard which it occupies today. The Board of Trustees of the *Journal*, after careful consideration and deliberation, has selected Dr. Geo. H. Simmons to succeed Dr. Hamilton as editor. You are to be congratulated upon this wise selection. Dr. Simmons is not an experiment, for he has won his laurels in medical journalism, and already stands among his editorial friends as the peer of any. Having come up from the ranks in journalism, he is acquainted with every detail, and that he will make a good editor goes without saying.

THE MANAGEMENT OF THE JOURNAL.

I trust that it will not be considered out of place if I make a suggestion or two in regard to the management of the *Journal.* It has been frequently urged that much appears in it that should be expurgated; in other words, that a censorship should be established and many articles withheld from publication. I desire to disagree from this sentiment entirely and unequivocally. The *Journal* is simply the mouthpiece of the Association, and if one single paper read before this body is to be refused publication, then you have violated your pledge and obligation. Any member has the inalienable right to disagree with the sentiment of any paper, and the editor is in no wise responsible for said sentiment. If a paper is good enough to be read before any section in this Association, it is good enough to be published in the *Journal.* If any action is taken, it should be by the chairman of the section before which the paper is to be read, saying to the reader that his paper does not come up to the standard. But who will assume this responsibility? and who is to judge the judges? May it not be that a paper, although couched in bad English, might contain matter of real merit? Many articles, too, with high-sounding titles and verbiage beyond the comprehension of man may contain but little that is of worth, although written in perfect English, with deductions that would puzzle a philosopher, and which contain illustrations that would do credit to Puck. By all means let the editor improve the *Journal* in any way that he deems proper, but let every paper read before this Association or its sections be published in the *Journal.* Let the reader select the wheat from the chaff, the good from the bad.

In connection with the business interests of the *Journal*, I beg to make the following suggestion: Let a suitable man be selected, preferably a doctor, to travel in its interest, thereby increasing the membership of the Association — this agent, secretary, assistant secretary, or whatever you may choose to call him, to solicit subscriptions for the *Journal* and encourage membership. He should visit the meeting of each State society, district and county society, besides calling on individual members of the profession. Of course, only those who are endorsed by accepted or recognized organizations can become members of this Association. There are many hundreds of worthy physicians in the United States who would readily join the mother society if properly approached. Many, very many of them are ignorant of the manner of becoming members. It may be urged that the salary necessary to secure such an agent would be too large to justify the employment of such. In refutation I would urge that by such individual solicitation many more would be added to the membership than would be necessary to pay said salary, and they would become permanent members. It can be said, especially to young men, that the mere wearing of the button of the Association adds dignity and confidence. Then, too, it can truthfully be asserted that the *Journal* alone is worth more than the sum paid for membership. By this means I am sure that the treasury would be so increased as to enable the *Journal* to be the peer of any published. Besides, our ranks would be so increased as to make this Association not only the largest but the most important in all the world.

THE SECRETARYSHIP.

For several years there has been a heated debate, if not wrangle, at each annual meeting, in general session, over the secretaryship. This is both unseemly and undignified, and is to be much deplored. It seems to me that there is an easy solution to this matter. Let the editor of our *Journal* be the secretary of the Association. The Board of Trustees has wisely insisted that he devote his whole time to the *Journal.* It does, therefore, appear that the secretaryship should be one of his duties. By so acting he is brought into a closer relation with the business management of the Association and with the active membership of the same. He would himself be responsible for a correct report of all proceedings, and be enabled to keep them without fault. The question whether or not any addition should be made to his salary for this additional work can be determined by the Board of Trustees. Our present secretary has served us long and well, and for his services in the past the Association should, and no doubt does, feel deeply obligated to him. I am sure that he would be the first to acquiesce in any move that would enhance the business interests or the prosperity of the Association. I therefore very respectfully offer the suggestion as above stated.

SOCIETIES WHICH SHOULD BE RECOGNIZED.

In the last few months many good medical societies which have adopted the "Code of Ethics" have communicated with me through their secretaries, asking how they could get recognition by this body. I have found, in many instances, that the State society had failed to recommend them, but for no particular reason. Anyway, they are debarred from recognition by this Association. In several instances I found that said societies had a greater number in attendance at their meetings than did the State society. I trust something will be done in regard to this matter, in order that these good societies can obtain recognition from this Association.

The appointment by your nominating committee of three such distinguished gentlemen to read the several addresses before this Association in general session assembled relieves me of any duty in that line. I shall therefore content myself with employing the balance of my time in asking your consideration of a few things which are not only a menace to the public health but also to the safety of society. Having served as a health officer for many years, my mind naturally turns into this channel, especially so when I see an opportunity to enlist the interest and co-operation of this large and influential body of physicians.

TUBERCULOSIS.

It behooves this national body of American physicians to take some action, or at least to approve the movement to stamp out, as far as scientific effort can do so, that dread disease that kills one-seventh of the world's population — tuberculosis. A few days ago, May 24th–27th, there was held a tuberculosis congress in Berlin, international in character. The Liverpool Medical Institution, one of the most important medical societies in England, has recently appointed a committee of its members "to consider what further steps can be taken for the prevention of tuberculosis, and for the treatment of the disease in the human subject." This committee proposes to consider: (1) the nature of pulmonary tuberculosis, its communicability and preventability; (2) the provision of sanatoria; (3) the more effectual methods of controlling spread of infection; and (4) the desirability of adopting some form of notification. The eradication of bovine tuberculosis received a powerful stimulus throughout the empire when recently Her Majesty the Queen gave orders to have killed such of her herd of Jerseys as were shown by the tuberculin test to be infected.

At the recent meeting of the French Association for the Advancement of Science, the Section of Hygiene, at the suggestion of Professor Nicholas, passed a resolution pointing out that the conveyance of tuberculosis by inhalation is only one of the modes of infection, and that a larger part of the diffusion of the disease is played by contagion through the alimentary canal, as proved experimentally and clinically, urging the necessity of taking adequate measures to insure the sterilization and harmlessness of articles of food. All Europe is wide awake to the importance of this subject.

From carefully prepared statistics it is found that of the deaths from all causes between the ages of fifteen and sixty years, one-third of the number are victims of tuberculosis, and that it kills four and a half times as many people as do small-pox, scarlet fever, typhoid fever, and diphtheria combined. It is estimated that at any given time in Germany alone 1,300,000 persons are affected with tuberculosis, and Osler says that 1,200,000 in America have the disease at all times. One in every fifty persons has the disease. Over 13,000 die of tuberculosis in the State of New York every year. Also in every American city the proportion of deaths is equally as great. So important has this subject become that at a recent convention held in England to consider the question, "How to Prevent the Spread of Consumption," the Crown was represented by His Royal Highness, the Prince of Wales, who presided over the meeting. Great encouragement was given the move by royalty and all others. The medical profession all over the world is deeply interested in the subject, the aid by governments solicited, and every effort is being made to suppress this formidable disease. Since the germ which causes it is known, and its habitat, the condition under which it thrives, and that the disease is contagious, it does appear but rational to assume that it not only can be prevented by precautionary measures, but that it can be cured by proper environment and treatment. It is equally true that, even in the best of homes, the treatment usually accorded the patient is *nil* in effect and accomplishes nothing. Something more than this must be done if we expect to materially decrease the death-rate. What is that something? Dettweiler believes that over 24 per cent. of cases of tuberculosis are curable, Meisen, 27 per cent., Braymer, 21.5 per cent., and this under ordinary climatic and hygienic treatment. A much higher percentage of recoveries could be recorded if a real systematic and scientific treatment could be afforded these patients. Such a course can be instituted only in well ordered and equipped hospitals designed especially for such inmates. In regard to the extent of the disease, I can do no better than to use the words of Professor Hirsch. He says, "It is emphatically a disease of all times, all countries, and all races. No climate, no latitude, no occupation, no combination of favoring circumstances forms an infallible safeguard against the onset of tuberculosis, however such conditions may mitigate its ravages or retard its progress. Like typhoid fever, phthisis dogs the steps of man wherever he may be found, and claims its victims among every age, class, and race." In answer to the question, What is to be done to prevent its progress? I would suggest a remedy in using the words of a resolution adopted at the International Congress of Hygiene in Brussels, in 1897: "The hospitalization of tuberculosis is urgent and will not long be withheld." In several large cities in the United States an earnest effort has already been made to carry this thought into practical utilization, especially so in Chicago and New York. It can readily be seen, however, that but a comparative few out of this great number of afflicted can be accommodated in this manner. A country or State that is ever on the alert to prevent the landing of a foreign foe, or a hostile army, surely should ever be ready to aid in the suppression of a foe to the human race ten times more destructive to human life than the invasion of the country by an army of great size armed with the most improved rifles. Let us, then, in the name of humanity, invoke aid from the government of this very humane people, in order to help put down and thoroughly conquer this foe.

During the last session of the New York Legislature a report of the Senate committee appointed to investigate the advisability of establishing a State hospital for the cure of consumption was made. Many reasons for the same were presented in the report. Among other things the report read: "Tuberculosis is one of the most fatal diseases that the human race has to combat at the present day; its yearly victims inflict a serious and unnecessary drain upon the resources of the State. Unnecessary because it is now demonstrated beyond question that by the adoption of proper preventive measures a large proportion of those who suffer from this disease may be saved. This is proven not only by the revelations of science, but by the results which have been obtained in the practical application of the means to prevent the spread of disease. A large proportion of the cases brought under treatment have been cured, and so many have so improved as to be restored to the producing class. It is also shown that the efforts of the boards of health of this and other States, as well as in other countries, have so far succeeded in reducing the percentage of deaths from tuberculosis by the measures adopted that there is good ground for assuming that with wise laws properly enforced this disease may be almost wholly obliterated." Is it too much, then, to suggest that this Association, representing the most advanced thought of the medical profession of America, take action in this important matter? I would most respectfully urge you to appoint a committee to prepare a careful report on this subject and present it to the next Congress sitting, beseeching that this Government erect, prepare or donate hospitals or reservations in and at which the poor or others shall receive treatment for the cure of consumption; also that the advisability of the respective States erecting similar institutions be impressed upon the various State boards of health. The blind, the deaf, the insane, the feeble-minded and other classes are so provided for; why not these? They are not able to care for themselves and they are a menace to the public health. It must be confessed that in so far as the prevention of the disease is concerned, that must come from the education of the people to the facts. The best way to accomplish this I leave to you.

THE ANTIVACCINATIONISTS.

It may appear superfluous to ask that you consider, in the proper way, a rebuke to a certain class that is doing much to endanger the lives of our citizens, and whose meddling ways are giving the health boards of the various States much annoyance. I allude to the antivaccinationists, encouraged as they are by an antivaccination society. It seems strange and beyond belief that citizens of respectability and supposed intelligence should band themselves together to prevent a means of saving human life. But "'tis true, and pity 'tis, 'tis true." If these misguided people would only inform themselves of facts patent to every reader of history, they might at least stop long enough in their mad career to think.

The true condition is so well described by Dr. Seys in a recent paper that I beg to quote from him: "Well has small-pox been termed the most terrible of all the 'ministers of death.' It dates back to the early history of our race, but from whence it came no man can say. Then all expected to have it and but few escaped. No respecter of persons, it was found in the palace and in the hovel, in the fair green fields and in the foul dungeon. All ages yielded to its noisome touch, and no season of the year was free from its deadly breath. One-third of the children born to the daughters of men died before they were a year old because of this pestilence, and one-half before the age of five. In epidemic years it is estimated to have caused 50 per cent. of all deaths in Europe, and in non-epidemic years not less than 10 per cent. Two-thirds of the pauper blind in Europe of that day looked no more on the faces of their loved ones or the blue sky, nor saw the light of day, because of its blighting visitation. In Mexico it is said in a few years to have caused the death of three and a half millions of people. Iceland and Greenland were almost depopulated by it, and it has well-nigh rendered extinct some of our Indian tribes. It was the all-important factor in keeping down the population of Europe. Nor would the task be a difficult one to-day, should we desire to do so, to bring back the horrors of but a few years ago."

We may rest in peace and disregard the efforts of these half-mad people, but we must not close our eyes to the fact that, by their loud cry, aided by political influence, given often for self-aggrandizement, they are endangering the lives of every community. So far has this thing gone, that the vaccination law in England has but recently been amended so that only those who may desire shall be vaccinated. This is a menace to the public health and smacks of the dark ages. I again respectfully ask that you give to the medical profession in America an endorsement of their views in a resolution sustaining *compulsory* vaccination. The safety of the people from this most direful malady demands it.

A CRUSADE AGAINST SYPHILIS.

An international medical conference will be held at Brussels, Belgium, in the month of September next, known as the International Conference for the Prevention of Syphilis. A statement of the fact has been sent the Honorable Secretary of State of the United States, through the Belgium minister at Washington, with request that he appoint a delegation to attend this important conference. The Honorable Secretary in turn requested me, as your presiding officer, to name said delegation. This I have already done, as the call was for immediate action. In the preamble which accompanies this notice the following language was used: "The increasing propagation of syphilis and venereal diseases has become a serious danger to society, and it is important while there is still time to take efficient measures to stop the progress of this scourge. The spread of the evil is an incontestable fact; on this point all physicians who are in a position to know or observe its progress are agreed. The number of victims increases daily, and a serious consideration is that this malady is penetrating into strata of society where it was formerly rarely seen. Scarcely any attempt hitherto has been made to check this social evil, or rather while some attempts have been made, they were without concerted action, without preconceived plans, and without an international understanding to success."

What can be said of Belgium in this regard can be said of the United States. Perhaps the ratio of cases is not so large, but this matters little. It is estimated that there are in this country between six and seven million people who are afflicted in one way or another with syphilis. A distinguished French authority says that one man in every four has the disease in France. When we consider that by this the very foundation of society is shaken, our families imperilled, the constitutions of our youths undermined, our women wrecked, it is high time, as this official says, that we turn our attention to the subject. The warning should be in words that the most illiterate man or woman could understand, and it should emanate from sources and places that would reach the greatest number. Our false modesty in the past has been too pronounced, and has prevented us from giving to the common people valuable information; so we are, in a measure, as a profession, much to blame for the great spread of this blighting curse.

The time has arrived when we, as physicians, singly or when in convention assembled, should throw aside all restraint when dealing with this vital question. Fathers, mothers, sisters, brothers and all others should be informed, and this information should be in the plainest language. The minister and the priest should aid the doctor in his praiseworthy undertaking. The doctrine should be inculcated into the youth of both sexes, that freedom from this awful condition should exist before the marriage relation is thought of. Upon this declaration rests the hope of the State, as well as of families, for neither good soldiers, good citizens nor good husbands with tainted blood can be had. Please permit me to suggest that a committee be appointed from this body, to report at the next annual meeting on the subject: "What is the Best Means of Preventing the Spread of Syphilis?"

A PLEA FOR HARMONY.

In conclusion, let me beg of you that this meeting be one of perfect harmony and peace. Let nothing of an acrimonious nature be indulged in, but rather let your deliberations be characterized by patience, love for each other, and a desire to ennoble the profession to which you belong. For are we not brothers indeed, fighting for a common cause — the obliteration of the common enemy, disease? May your future life, each and all of you, be one of peace and perfect happiness; and may God grant to all a long life filled with good deeds. If fate should decree that any one of you should pass away before we meet again, may you find eternal rest in "God's next country."

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Original Articles.

ON SOME CONDITIONS OF HEALING BY FIRST INTENTION, WITH SPECIAL REFERENCE TO DISINFECTION OF HANDS.[1]

BY THEODOR KOCHER, M.D., ETC., BERNE, SWITZERLAND.

Mr. President and Gentlemen: — If we are to decide whether we are on the right way with our aseptic preparations to warrant a healing by first intention or not, we cannot answer that question simply by bacteriological demonstration of presence or absence of bacteria alone, but we must be guided by our clinical results. We know that even in cases of healing *per primum intentionem sans phrase*, where we withdraw a drainage-tube after twenty-four hours and get our wound absolutely closed within two days, we may find bacteria by dropping some of the bloody liquid of the first day in sterilized bouillon and keeping it at 37° for twenty-four hours.

It seems perfectly sure that we can get a primary union, that is to say, either a healing of our wounds without any secretion whatever, when it was possible to close a wound throughout, or with a serous bloody discharge, diminishing from the very moment of the operation, when a drainage-tube had to be put in a cavity, even in cases where some bacteria have been introduced. Accordingly it seems necessary to give first the clinical results of a method of asepsis which we think worth recommending for general use.

Therefore when I was greatly honored with the invitation of your president and secretary, Dr. Keen and Dr. Burrell, to present an introductory paper for a discussion on disinfection of hands at the annual meeting of the American Surgical Association in Chicago, I asked my assistant and son, Dr. Albert Kocher, to gather the whole material of our operative cases during the winter session from October 1st, 1898, to last of February, 1899, and to put all cases where we operated on not already infected cases, down in a chronological order, with the indication of date, disease, operation, and of the material we used for ligatures and sutures, of the use of gloves, of drainage-tubes, the final result, and date of dismission of the patient. Certainly this last date does not mean the moment of healing of the wound, which had always taken place days before, but it gives still a better idea of the form of primary reunion. (See table.)

As is seen by these statistics, we have had during five months 339 aseptic operations, of whom 5 died — 1.4 per cent. No one of these has died from infection going out from the wound. The first case was a case of acute fatty degeneration of the liver, to be attributed to the chloroform, after excision of goitre[2] in Graves's disease three days after operation; the wound entirely healed by first intention. The second case was a death by pneumonia four days after the operation of too long standing incarcerated hernia, as they often occur without any local complication. The third case of death was an excision of malignant goitre, having gone much too far, as we had to perform resection of the trachea; the patient died of pneumonia. The fourth and fifth cases of death were two patients with carcinoma pylori in a state of great exhaustion. The one on whom resection was performed died after two days from pneumonia, the other after exploratory incision three weeks afterwards from exhaustion.

As to the 334 cases left for judging the value of our aseptic preparations, we have had small abscesses in 8 cases, with healing by *secundam intentionem*, very quickly as a rule. So we see that except in 2.3 per cent. of cases there has been always absolute primary healing of our wounds.

Of the 8 cases where this was not the case 3 had to be excluded from the question of failure of the aseptic measures, because there was another source of infection: In case 255, with excision of the appendix vermiformis, an abscess was opened during the operation containing bacillus pyocyaneus, and the same bacterium developed in an abscess of the abdominal wall ten days afterwards, as we had been imprudent enough to close the wound without introducing a drainage-tube. Case 297 was one of incarcerated crural hernia, where an abscess with staphylococcus aureus developed after eight days. But this case, instead of being due to infection through the altered intestinal wall, as not infrequently happen in strangulated hernia of long standing, infected her wound herself by putting her hand, which had not been sufficiently secured, into the wound during the operation. Case 323 was an excision of suffocating goitre in a child three weeks old, when internal treatment had failed to give relief. It was found that in detaching the comparatively large and adherent growth from the esophagus a fine hole was made in this latter organ, so that some discharge existed for several days.

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[1] Read before the American Surgical Association, Chicago, June 2, 1899.

[2] I have to explain this case, which was quite exceptional, as I never in the last years used any anesthetic in these cases except cocaine, but the patient, who had agreed with that manner of performing the operation, behaved in such an extraordinarily unruly way that we were obliged to give chloroform, though perfectly aware of the great danger.

Five cases are left where the infection was introduced into the wound from outside — 1.4 per cent. of our cases. Two of these patients were cases with secondary infection during after-treatment when the wounds were dressed. In case 212 a large hematoma had formed by secondary bleeding after excision of goitre, which had to be opened by the assistant dresser, after which an abscess formed with staphylococcus aureus two weeks after the operation. Case 196 concerns a case of double genu valgum. One side healed *per primam*, on the other side, after-bleeding gave rise to the formation of a hematoma, which was opened by the assistant dresser, and gave rise to a small abscess after two weeks.

In excluding these two cases as having nothing to do with the introduction of germs *during the operation*, three cases are left where abscesses formed in wounds which were expected to heal by first intention, that is to say, *in* 0.8 *per cent. of our cases an infection took place during the operation.* It is very interesting to see what was the cause of these three infections. In two of them *catgut* was exceptionally used instead of silk, and in both cases secondary abscess formed going out from the deeper layer of sutures, whilst the skin-wound had healed perfectly well with silk sutures. In one of these cases (208) the abscess formed after three weeks only; such late formation is the rule in cases of infected ligatures. Certainly this is not mere accident, as we used catgut only in 10 of all our cases, so that with catgut we have got secondary abscess in 20 per cent., with silk or other material only in 0.3 per cent., that is to say, in one case out of 229. In one of the cases where catgut infection took place no gloves were used during the operation.

Now as to the only case where we can recognize an infection during the operation executed with our ordinary means and aseptic preparations, it was such a slight case that it is the question if it be worth while to speak of an infection. It is case 138, where we operated for Graves's disease with ligature of the superior thyroid artery on both sides. One side healed by first intention throughout, on the other very little secretion kept on for ten days, when the wound was perfectly healed; there was no formation of abscess, but staphylococcus aureus was formed in the bloody secretion. As one side was healed with regular aseptic course, quite an accidental infection must have taken place on the other side.

So I think I may be justified in saying, that *practically, with my usual method of asepsis during* 225 *operations, I have not had one case of formation of abscess or suppuration of a wound during the whole winter.* Is now this result to be attributed to the introduction of *gloves* during this period? I am sure this is not the case, by the simple reason that we have had the same good results before when we did not use the gloves.[3] But at any rate, we may state, that the results are no worse, on the contrary as perfect as we may wish them, since we introduced the gloves. This is in strict contradiction with the bacteriological researches made lately on permeable gloves.

A good many surgeons must have had the idea of using gloves during certain operations long before Mikulicz proposed the regular use thereof in 1897. We are told by Lockett that Halsted used rubber gloves in the spring of 1889. But Robb proposed the same in 1894, and Foege-Manteuffel in 1897; but the honor of proposing gloves as an indispensable part of a good asepsis during every operation belongs to Perthes (Trendelenburg) and Mikulicz. Though we used gloves sometimes before Mikulicz, we have introduced their general use for all assistants to aseptic operations ever since. Out of the 339 cases of this winter we did not use gloves in 20 cases only, in all others we used cotton gloves, as recommended by Mikulicz. These latter cases were operated without gloves, in the intention to get some cases for comparison; some were operated without because the gloves hindered the free movement of the hand in cases of laparotomy, where we were obliged to move our fingers between the intestines for exploration; or because we had to do with cases where we were afraid of introducing in the gloves infectious germs from without, for instance, with cases of ulcerated cancer or of tubercular disease. We have shown in our tables that we did not find any difference in the cases with or without gloves. The few cases where there seemed to be a less favorable result without gloves were clearly to be explained otherwise than by an infection by the hand, the one by the use of catgut for deep sutures with late formation of abscess, the other by a small wound of the esophagus. Now since Döderlein began his researches on the infection of cotton gloves, concluding that if we express the bloody liquid of a glove in a sterilized research-tube with bouillon or agar we get the development of quantities of germs at once, nobody has been able to prove that his gloves remain sterile during an operation. On the contrary, every one who has controlled the researches of Döderlein knows that without exception germs in notable quantity are to be found in gloves which are soaked with blood and liquid during an operation. If it were true that these germs are falling down from the air of the room, and are not coming from the surface of the hands, as Döderlein admits, it could make little and only quantitative difference to wear impermeable gloves. In this case the conclusion which has been drawn by a good many surgeons, especially gynecologists, would be simply this, that it is by far better not to wear any gloves whatever, but to wash his hands from time to time in sterilized water, to take off blood and other adhering liquids which might paste on the skin the germs falling down from the surrounding air, as we used to wash

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[3] I may refer to my publication in the Correspondenzblatt für Schweizer Aerzte . . . "Fort mit dem Catgut!" when I published an uninterrupted series of operative results in using antiseptic silk.

Date.	No.	Disease.	Operation.	Material.	Gloves.	Drainage.	Result.	Date of discharge
Oct. 1.	1	Appendicitis chron.	Resection processus.	Antiseptic silk.	Gloves.	None.	Prima intentio	Oct 21.
" 10.	2	Periorchitis serosa.	Excision.	"	"	Glass tube.	"	" 30.
" "	3	Inguinal hernia.	Radical cure.	"	"	Glass tube.	"	" 30.
" "	4	Varicocele.	Excision of veins.	"	"	None.	"	" 28.
" "	5	Inguinal hernia.	Radical cure.	"	"	"	"	" 27.
" "	6	Varicocele.	Excision of veins.	"	"	"	"	" 21
" "	7	Inguinal hernia.	Radical cure.	"	"	"	"	" 19.
" "	8	Epigastric hernia.	Radical cure.	"	"	"	"	" 20
" 11.	9	Goitre.	Excision.	"	"	Glass tube.	"	" 19
" 11.	10	Goitre.	Excision.	"	"	Glass tube.	"	" 19.
" 13.	11	Dislocation clavicle.	Suture with silk.	"	"	None.	"	Nov. 9
" "	12	Fracture patella.	Suture with silk.	"	"	Glass tube.	"	Nov. 9
" "	13	Complicated fracture of leg (infected).	Amputation (osteoplastic).	"	"	"	"	Dec. 20.
" "	14	Cancer of breast.	Amputation.	"	"	"	"	Nov. 14.
" 17.	15	Goitre.	Excision.	"	"	"	"	Oct. 24.
" "	16	Sarcoma cutis.	Excision.	"	"	None.	"	Nov. 5.
" "	17	Inguinal hernia.	Radical cure.	"	"	Glass tube.	"	" 1.
" "	18	Appendicitis chron.	Resection processus.	"	"	None.	"	" 1.
" 18.	19	Goitre.	Excision.	"	"	Glass tube.	"	Oct. 25.
" "	20	Gonitis tuberculosa.	Resection of knee.	"	"	"	"	Dec. 12.
" "	21	Goitre.	Excision.	"	"	"	"	Oct. 25.
" "	22	Inguinal hernia.	Radical cure.	"	"	"	"	" 28.
" "	23	Inguinal hernia.	Radical cure.	"	"	None.	"	" 28.
" 19.	24	Goitre.	Excision.	"	"	Glass tube.	"	" 26.
" "	25	Sarcoma of cranium.	Excision.	Juniperus catgut.	"	Glass tubes and iodoform gauze.	"	Nov. 21.
" "	26	Inguinal hernia.	Radical cure.	Antiseptic silk.	"	None.	"	Oct. 28.
" "	27	"	"	"	"	"	"	" "
" 20.	28	"	"	"	"	"	"	" "
" 20.	29	Glandulæ sarcomatosæ.	Excision.	"	"	Glass tube.	"	" 27.
" 21.	30	Tuberculosis ulna.	Osteotomy.	"	No gloves.	Glass tube.	"	Nov. 4.
" 22.	31	Inguinal hernia.	Radical cure.	"	Gloves.	None.	"	" 7.
" 22.	32	Prolapsus uteri.	Ventrofixation.	"	Gloves.	"	"	" 7.
" 24.	33	Varices.	Ligature of vein.	"	No gloves.	"	"	
" "	34	Varices.	Ligature of vein.	"	No gloves.	"	"	" 11.
" "	35	Inguinal hernia.	Radical cure.	"	Gloves.	"	"	" 5.
" 25.	36	Goitre.	Excision.	"	"	Glass tube.	"	" 7.
" "	37	Acondritis dissecans genu.	Arthrotomy.	Juniperus catgut.	"	"	Abscess from deep sutures, staphylococcus aureus.	Jan. 1.
" "	38	Acondritis dissecans genu.	Arthrotomy.	Antiseptic silk.	"	"	Prima intentio.	Nov. 29.
" "	39	Intestinal obstruction by adhesions.	Laparotomy.	"	"	None.	"	" 7.
" 26.	40	Goitre.	Excision.	"	"	Glass tube.	"	" 3.
" "	41	Inguinal hernia.	Radical cure.	"	"	None.	"	" 6.
" "	42	Tuberculosis manus.	Resection.	"	"	Glass tube.	"	" 25.
" 28.	43	Graves's disease.	Ligature of arteries.	"	"	"	"	" 18.
" "	44	Graves's disease.	Excision of goitre.	"	"	"	Death 3 days, wounds healed.	
" "	45	Goitre.	Enucleation.	"	"	"	Prima intentio.	" 21.
" 29.	46	"	Excision.	"	"	"	"	" 5.
" "	47	"	Excision.	"	"	"	"	" 5.
" "	48	Crural hernia.	Radical cure.	"	"	None.	"	" 7.
" "	49	Inguinal hernia.	"	"	"	"	"	" "
" "	50	Inguinal hernia.	"	"	"	"	"	" "
" 31.	51	Lipoma.	Excision.	"	"	"	"	" 5.
" "	52	Incarcerated hernia.	Herniotomy.	"	"	"	Death 4 days, pneumonia.	
" "	53	Inguinal hernia.	"	"	"	"	Death 4 days, pneumonia.	
" "	54	Umbilical hernia.	"	"	"	"	Death 4 days, pneumonia.	
" "	55	Complicated fracture of tibia.	Suture of the vein.	Silver wire.	"	Glass tube.	Prima intentio.	" 15.
Nov. 1.	56	Angioma.	Excision.	Antiseptic silk.	"	None.	"	" 10.
" "	57	Inguinal hernia and retroflexio uteri.	Radical cure. Alexander's operation.	"	"	"	"	" 22.
" "	58	Hydrocele.	Excision.	"	"	"	"	" 10.
" "	59	Inguinal hernia.	Radical cure.	"	"	"	"	" 12.
" 2.	60	Tubercular glands.	Excision.	"	No gloves.	Glass tube.	"	" 16.
" 3.	61	Inguinal hernia.	Radical cure.	"	Gloves.	None.	"	" 12.
" "	62	Inguinal hernia.	Radical cure.	"	"	None.	"	" 12.
" "	63	Sarcoma of sternum.	Excision.	"	"	Iodoform gauze.	"	" 21.
" "	64	Contracture and ankylosis of knee-joint.	Resection.	"	No gloves.	None.	"	" 12.
" "	65	Tubercular hip.	Resection.	"	Gloves.	Glass tubes.	"	Jan. 21.
" "	66	Carcinoma labii.	Excision.	"	No gloves.	None.	"	Nov. 12.
" "	67	Carcinomat. glands.	Excision.	"	No gloves.	None.	"	" 12.
" 4.	68	Luxatio patellæ dextræ.	Partial tenotomy of quadriceps.	"	Gloves.	Glass tube.	"	" 21.
" "	69	Luxatio patellæ sinistræ.	Partial tenotomy of quadriceps.	"	"	"	"	" 21.
" "	70	Goitre.	Excision.	"	"	"	"	" 12.
" "	71	Inguinal hernia.	Radical cure.	"	"	None.	"	" 18.
" "	72	Traumatic urethral stricture.	Silk suture after excision.	"	"	"	"	" 18.
" "	73	Varices.	Ligature of vena saphena major.	"	"	"	"	" 26.
" "	74	Varices.	Ligature of vena saphena major.	"	"	"	"	" 26.
" 5.	75	Goitre.	Excision.	"	"	Glass tube.	"	" 17.
" "	76	Goitre.	Excision.	"	"	None.	"	" 13.
" "	77	Inguinal hernia.	Radical cure.	"	"	"	"	" 15.
" "	78	Malrolobium.	Excision.	Juniperus catgut.	No gloves.	"	"	" 10.
" "	79	Crural hernia.	Radical cure.	Antiseptic silk.	Gloves.	"	"	" 18.
" "	80	Inguinal hernia.	Radical cure.	"	"	"	"	" 18.
Nov. 7.	81	Carcinoma pylori.	Resection of pyloris.	"	"	None.	Prima intentio.	Dec. 14.
" 7.	82	Appendicitis with perforation.	Resection appendix.	Juniperus catgut.	"	Iodoform gauze.	"	Nov. 24.

Date.	No.	Disease.	Operation.	Material.	Gloves.	Drainage.	Result.	Date of discharge.
Nov. 8.	83	Old dislocation of radius.	Resection of the upper end.	Antiseptic silk.	No gloves.	None.	Prima intentio.	Nov. 17.
“ “	84	Old dislocation of radius.	Resection of the upper end.	“	Gloves.	“	“	“ 19.
“ “	85	Fractura supracondylica humeri male sanata.	Excision of triangular piece of bone.	“	“	“	“	Dec. 12.
“ “	86	Ulcus ventriculi.	Laparotomy.	“	“	“	“	Nov. 24.
“ “	87	Goitre.	Excision.	“	“	Glass tube.	“	Nov. 17.
“ 9.	88	“ (spondylitis).	Excision.	“	“	“	“	Dec. 12.
“ “	89	“	Enucleation.	“	“	“	“	Nov. 19.
“ “	90	Inguinal hernia.	Radical cure.	“	“	None.	“	“ 18.
“ “	91	Inguinal hernia.	Radical cure.	“	“	“	“	“ 24.
“ 10.	92	Dislocation of int. meniscus.	Excision of meniscus.	“	“	“	“	“ 28.
“ “	93	Fracture pertubercularis humeri male sanata.	Reposition of fragments.	“	“	Glass tube.	“	Jan. 19.
“ “	94	Tuberculosis ceci et coli ascend.	Resection of intestine.	“	“	None.	“	Nov. 25.
“ 11.	95	Epilepsy.	Trephining.	“	“	Silver tube.	“	Nov. 25.
“ 11.	96	Old fracture lower end humerus.	Resection.	“	“	Glass tube.	“	Dec. 10.
“ 14.	97	Goitre.	Excision.	“	“	“	“	Nov. 22.
“ “	98	Sarcoma of nervus ulnaris.	Excision, suture of nerve.	Juniperus catgut.	“	“	“	Dec. 5.
“ “	99	Adenoma mammæ.	Excision.	Antiseptic silk.	“	None.	“	Nov. 22.
“ 15.	100	Crural hernia.	Radical cure.	“	“	“	“	“ 24.
“ “	101	Inguinal hernia.	“	“	“	“	“	“ “
“ “	102	“	“	“	“	“	“	“ “
“ “	103	“	“	“	“	“	“	“ “
“ 17.	104	Malignant goitre.	Excision, resection of trachea.	“	“	Iodoform gauze.	Death 3 days, pneumonia.	
“ “	105	Appendicitis recidiva.	Resection of processus vermiformis.	“	“	None.	Prima intentio.	“ 27.
“ “	106	Fracture of scapula.	Suture • with silver wire.	“	“	Glass tube.	“	“ 29.
“ 18.	107	Inguinal hernia.	Radical cure.	“	“	None.	“	“ 27.
“ “	108	Inguinal hernia.	Radical cure.	“	“	None.	“	“ 27.
“ “	109	Goitre.	Excision.	“	“	Glass tube.	“	“ 29.
“ “	110	Epilepsy.	Trephining.	“	“	Silver tube.	“	Dec. 9.
“ “	111	Pseudarthrosis femoris.	Suture.	Aluminium-bronze wire.	No gloves.	Iodoform gauze.	“	Jan. 24.
“ 19.	112	Goitre.	Excision.	Antiseptic silk.	Gloves.	Glass tube.	“	Nov. 26.
“ 19.	113	Olenitis tuberculosa recidiva.	Resection.	“	“	Glass tube.	“	Dec. 12.
“ 20.	114	Incarcerated inguinal hernia.	Herniotomy.	“	“	None.	“	Dec. 2.
“ 21.	115	Goitre.	Excision.	“	“	Glass tube.	“	Nov. 28.
“ “	116	Varicocele.	Excision of vena spermatica.	“	“	None.	“	“ 29.
“ “	117	Inguinal hernia.	Radical cure.	“	“	“	“	“ 29.
“ “	118	Congenital hernia.	Radical cure.	“	“	“	“	Dec. 2.
“ 22.	119	Sarcomata uteri.	Supravaginal amputation.	“	“	“	“	Dec. 12.
“ 22.	120	Tuberculosis sterni.	Excision.	“	“	Iodoform gauze.	“	Jan. 30.
“ 23.	121	Congenital stenosis of pylorus.	Gastro-enterostomy.	“	“	None.	“	Dec. 7.
“ 23.	122	Goitre.	Excision.	“	“	Glass tube.	“	“ 3.
“ 24.	123	Hernia ileo-appendicularis.	Laparotomy.	“	“	None.	“	“ 10.
“ “	124	Graves's disease.	Ligature of superior arteries.	“	“	“	“	“ 11.
“ “	125	Ankylosis cotæ.	Osteotomia subtrochanterica.	“	“	“	“	Feb. 2.
“ “	126	Club-foot.	Phelp's operation.	“	“	Iodoform gauze.	“	Dec. 15.
“ “	127	Club-foot.	Resectio mediotarsea.	“	“	None.	“	“ 15.
“ 25.	128	Carcinoma mammæ.	Amputation.	“	“	Glass tubes.	“	“ 19.
“ “	129	Malignant goitre.	Excision.	“	“	Glass tubes.	“	“ 5.
“ “	130	Epilepsy.	Trephining.	“	“	Silver tube.	“	Mar. 14.
“ 26.	131	Inguinal hernia.	Radical cure.	“	“	None.	“	Dec. 5.
“ “	132	Glandulæ sarcomatosæ colli.	Excision.	“	“	Glass tube.	“	Nov. 26.
“ “	133	Goitre.	Excision.	“	“	“	“	Dec. 5.
“ “	134	Inguinal hernia with processus vermif.	Resection of processus, radical cure of hernia.	“	“	“	“	“ 8.
“ “	135	Inguinal hernia.	Radical cure.	“	“	None.	“	“ 5.
“ “	136	Inguinal hernia.	Radical cure.	“	“	“	“	“ 5.
“ 28.	137	Luxatio humeri habitualis.	Suture of capsule.	“	“	“	“	“ 24.
“ “	138	Graves's disease.	Ligatures of superior arteries, two incisions.	“	“	“	Right side prima intentio, left side retention of air, slight infection.	“ 24.
“ “	139	Appendicitis.	Resection processus.	“	“	“	Prima intentio.	“ 10.
“ “	140	Chondroma digit.	Excision.	“	“	Iodoform gauze.	“	“ 12.
“ 29.	141	Tuberculosis testis hydrocele vaginalis.	Excision with castration.	“	“	None.	“	“ 8.
“ 30.	142	Goitre.	Excision.	“	“	Glass tube.	“	“ 7.
“ “	143	Goitre.	Excision.	“	“	“	“	“ 6.
“ “	144	Laceration of upper limb.	Ablatio humeri alta.	“	“	“	“	“ 25.
“ “	145	Hernia inguinalis pervagua.	Radical cure.	“	“	“	Prima intentio, large hematoma.	Jan. 8.
Dec. 2.	146	Incarcerated hernia.	Herniotomy.	“	“	None.	Prima intentio.	Dec. 13.
“ “	147	Goitre.	Excision.	“	“	Glass tube.	“	Dec. 10.
“ “	148	Epilepsy.	Trephining.	“	“	Silver tube.	“	Jan. 15.
“ 3.	149	Graves's disease.	Ligature of arteries.	“	“	None.	“	Dec. 27.
“ “	150	Goitre.	Excision.	“	“	Glass tube.	“	“ 10.
“ “	151	“	“	“	“	“	“	“ “
“ “	152	“	“	“	“	“	“	“ “

Date.	No.	Disease.	Operation.	Material.	Gloves.	Drainage.	Result.	Date of discharge.
Dec 2.	153	Carcinoma labii with glands.	Excision.	Antiseptic silk.	Gloves.	None.	Prima intentio.	Dec. 10.
" 5.	154	Inguinal hernia.	Radical cure.	"	"	"	"	" 1[illegible]
" "	155	Inguinal hernia.	Radical cure.	"	"	"	"	" 1[illegible].
" "	156	Meningocele lumbalis.	Excision.	Aluminium-bronze wire.	"	"	"	" 22.
" "	157	Appendicitis.	Resection of processus vermiformis.	Antiseptic silk.	"	"	"	" 13.
" 6.	158	Inguinal hernia.	Radical cure.	"	"	"	"	" 14
" 6.	159	Goitre.	Excision.	"	"	Glass tube	"	" 19
" 7.	160	Goitre (spondylitis).	Excision.	"	"	Glass tube.	"	Jan. 14.
" "	161	Inguinal hernia.	Radical cure.	"	"	None.	"	Dec. 16
" "	162	Incarcerated inguinal hernia.	Herniotomy.	"	"	None.	"	" 17
" "	163	Inguinal hernia.	Radical cure.	"	"	Glass tube.	"	" 21
" "	164	"	"	"	"	Glass tube.	"	" 16.
" 8.	165	"	"	"	"	None.	"	" 17.
" "	166	Osteomalacia.	Double ovariotomy.	"	"	"	"	Feb. 15.
" "	167	Ulcus ventriculi.	Gastro-enterostomy.	"	"	"	"	
" "	168	Inguinal hernia.	Radical cure.	"	"	"	"	Dec 17
" "	169	Inguinal hernia.	Radical cure.	"	"	"	"	" 17.
" "	170	Old dislocation of radius.	Open reposition.	"	"	"	"	" 24.
" 9.	171	Prolapsus uteri.	Ventrifixation.	"	"	"	"	" 26.
" "	172	Gastrectasia.	Gastro-enterostomy.	"	"	"	"	Jan 14.
" "	173	Labium leporium.	Suture.	"	"	"	"	Dec 23.
" "	174	Gonitis tuberculosa.	Resectio genu.	"	"	Glass tubes.	"	Dec 29.
" "	175	Ventral hernia.	Herniotomy.	"	"	Glass tubes.	"	Jan. 9.
" 10.	176	Traumatic epilepsy.	Trephining.	"	"	Silver tube.	"	Dec. 27.
" "	177	Torticollis spasticus.	Trephining.	"	"	Silver tube.	"	Jan. 12.
" "	178	Fracture of vertebra with paraplegia.	Laminectomy.	"	"	Glass tube.	"	Mar 30.
" 12.	179	Epigastric hernia.	Radical cure.	"	"	None.	"	Dec. 21.
" "	180	Corpus liberum genu.	Arthrotomy.	"	"	Glass tube.	"	Jan. 5.
" "	181	Goitre.	Excision.	"	"	Glass tube.	"	Dec. 24.
" "	182	Ulcus ventriculi.	Gastro-enterostomy.	"	"	None.	"	" 31.
" "	183	Inguinal hernia.	Radical cure.	"	"	"	"	" 24.
" "	184	Inguinal hernia.	Radical cure.	"	"	"	"	" 24.
" 13.	185	Epilepsy.	Trephining.	"	"	Silver tube.	"	Jan. 23.
" 13.	186	Sarcoma mammæ.	Amputation.	"	"	Glass tube.	"	" 15.
" 14.	187	Inguinal hernia.	Radical cure.	"	"	None.	"	" 22.
" "	188	"	"	"	"	"	"	" 22.
" "	189	"	"	"	"	"	"	Dec. 22.
" "	190	"	"	"	"	"	"	" 22.
" 15.	191	Hydrocele bilocularis vaginalis.	Excision.	"	"	Glass tube.	"	" 24.
" "	192	Periorchitis serosa.	"	"	"	None.	"	" 23.
" "	193	Struma.	"	"	"	Glass tube.	"	" 24.
" "	194	Appendicitis.	Resection of processus vermiformis.	"	"	None.	"	" 24.
" "	195	Luxatio cubiti inveterata.	Resectio cubiti.	"	"	Glass tubes.	"	Jan. 19.
" 16.	196	Genu valgum.	Osteotomia supracondylica.	"	"	Glass tubes.	Hematoma 2 weeks, secondary infection.	Feb. 16.
" 17.	197	Prolapsus uteri.	Ventrifixatio.	"	"	None.	Prima intentio.	Jan. 8.
" "	198	Crural hernia.	Radical cure.	"	"	"	"	" 10.
" "	199	Varices.	Ligature of vena saphena major.	"	"	"	"	" 10.
" "	200	Pes varus.	Resectio mediotarsea.	"	"	"	"	" 19.
" "	201	Goitre.	Excision.	"	"	Glass tube.	"	Dec. 26.
" 19.	202	Gastrectasia.	Gastro-enterostomy.	"	"	None.	"	Jan. 12.
" 19.	203	Complicated fracture of tibia and fibula.	Ablatio femoris osteoplastica.	"	"	Glass tube.	"	Feb. 2.
" 20.	204	Inguinal hernia.	Radical cure.	"	"	None.	"	Dec. 28.
" "	205	Varicocele.	Excision of veins.	"	"	"	"	Dec. 28.
" "	206	Appendicitis.	Resection of processus vermiformis.	"	"	"	"	Jan. 14
" "	207	Tuberculosis pedis.	Resectio pedis.	"	"	Iodoform gauze.	"	" 21.
" 22.	208	Papilloma ovarii.	Excision.	Juniperus catgut.	No gloves.	None.	Three weeks abscess, staphylococcus aureus.	" 29.
" 22.	209	Gastrectasia.	Gastro-enterostomy.	Antiseptic silk.	Gloves.	"	Prima intentio.	Dec. 31.
" 26.	210	Gastrectasia.	Laparotomy.	"	"	"	"	Jan. 24.
" 26.	211	Torticollis spasticus.	Dividing the muscles.	"	"	Glass tube.	"	Mar. 4.
" 27.	212	Goitre.	Excision.	"	"	Glass tube.	Large hematoma 2 weeks, secondary infection, staphylococcus aureus.	Jan. 23.
" "	213	Inguinal hernia.	Radical cure.	"	"	None.	Prima intentio.	" 5.
" "	214	Inguinal hernia.	Radical cure.	"	"	None.	"	" 5.
" 29.	215	Goitre.	Excision.	"	"	Glass tube.	"	" 7.
" "	216	Carcinoma pylori inoperabile.	Laparotomy.	"	"	None.	Prima intentio, death 3 weeks after operation.	
" "	217	Inguinal hernia.	Radical cure.	"	"	"	Prima intentio.	" 5.
" "	218	Inguinal hernia.	"	"	"	"	"	" 5.
" "	219	Umbilical hernia.	"	"	"	"	"	" 10.
Jan. 3.	220	Fractura supracondylica humeri inveterata.	Resection of a part of dislocated fragment.	"	"	"	"	" 21.
" "	221	Goitre.	Excision.	"	No gloves.	"	"	" 14
" "	222	Goitre.	Excision.	"	Gloves.	"	"	" 14.
" "	223	Fracture of cranium with hemiplegia.	Trephining.	"	"	Silver tube.	"	" 31.
" "	224	Pes varus congenitus.	Resection of lower end of fibula.	"	"	None.	"	" 23.
" 10.	225	Traumatic aneurism brachial artery.	Incision. Ligature.	"	"	Glass tube.	"	" 23.
" "	226	Inguinal hernia.	Radical cure.	"	"	None.	"	" 19.
" "	227	Inguinal hernia.	Radical cure.	"	"	"	"	" 19.
" "	228	Ventral hernia.	Herniotomy.	"	"	"	"	" 28.

Date.	No.	Disease.	Operation.	Material.	Gloves.	Drainage.	Result.	Date of discharge.
Jan. 10.	229	Goitre.	Excision.	Antiseptic silk.	Gloves.	Glass tube.	Prima intentio.	Jan. 17.
“ 12.	230	Gastrectasia.	Gastroenterostomy.	“	“	None.	“	“ 23.
“ 12.	231	Goitre.	Enucleation.	“	“	Glass tube.	“	“ 20.
“ 13.	232	Goitre.	Excision.	“	“	Glass tube.	“	“ 19.
“ “	233	Pes varus congenit.	Resectio medio tarsea.	“	“	None.	“	Feb. 3.
“ “	234	Hydrocele vaginalis.	Excision.	“	“	“	“	“ 11.
“ 14.	235	Contracture of finger.	Exarticulatio digiti IV et V.	“	“	“	“	“ 17.
“ 17.	236	Carcinoma esophagi.	Gastrostomy.	“	“	Glass tubes.	“	Jan. 31.
“ “	237	Goitre.	Excision.	“	“	Glass tubes.	“	“ 26.
“ “	238	Appendicitis.	Resection of processus vermiformis.	“	“	None.	“	“ 29.
“ “	239	Incarcerated inguinal hernia.	Herniotomy, resection of intestine.	“	“	Glass tube.	“	“ 31.
“ 18.	240	Inguinal hernia.	Radical cure.	“	“	None.	“	“ “
“ “	241	“	“	“	“	“	“	“ “
“ “	242	“	“	“	“	“	“	“ “
“ 19.	243	Olenitis tuberculosa.	Resectio cubiti.	“	“	Iodoform gauze.	“	Feb. 10.
“ 20.	244	Bursitis præpatellaris.	Excision of bursa.	“	“	Glass tube.	“	“ 6.
“ “	245	Bursitis semimembranosa.	Excision of bursa.	“	“	None.	“	“ 6.
“ “	246	Carcinoma pylori.	Resectio pylori.	“	No gloves.	None.	Death 2 days after operation, pneumonia.	
“ “	247	Goitre.	Excision.	“	Gloves.	Glass tube.	Prima intentio.	Jan. 28.
“ 21.	248	Umbilical hernia.	Radical cure.	“	“	“	“	“ “
“ “	249	Goitre.	Excision.	“	“	“	“	“ “
“ “	250	Goitre.	Excision.	“	“	“	“	“ “
“ 24.	251	Inguinal hernia.	Radical cure.	“	“	None.	“	Feb. 3.
“ “	252	Inguinal hernia.	Radical cure.	“	“	None.	“	“ 3.
“ “	253	Fibrosarcoma of musc. gluteus.	Excision.	“	“	Glass tube.	“	“ 7.
“ 26.	254	Neuralgia from scoliosis.	Resectio costæ XII.	“	“	None.	“	“ 6.
“ 26.	255	Appendicitis with abscess (pyocyaneus).	Resection of processus vermiformis.	“	“	None.	After 10 days abscess, pure pyocyaneus.	“ 23.
“ 27.	256	Struma colloides.	Excision.	“	“	Glass tube.	Prima intentio.	“ 2.
“ “	257	Inguinal hernia.	Radical cure.	“	“	None.	“	“ 2.
“ “	258	Ulcus rodens nasi.	Excision.	“	No gloves.	“	“	“ 4.
“ 28.	259	Carcinoma pylori.	Gastroenterostomy.	“	Gloves.	“	“	“ 6.
“ “	260	Incarcerated crural hernia.	Herniotomy.	“	Gloves.	“	“	“ 9.
“ “	261	Incarcerated inguinal hernia.	Herniotomy.	“	No gloves.	“	“	“ 9.
“ 30.	262	Dupuytren's contracture.	Exarticulatio digiti V.	“	No gloves.	Glass tube.	“	“ 4.
“ 31.	263	Genu valgum traumat.	Osteotomia tibiæ.	“	Gloves.	None.	“	“ 16.
“ 31.	264	Carcinoma maxillæ infer.	Excision.	Juniperus catgut.	No gloves.	Iodoform gauze.	“	“ 28.
Feb. 1.	265	Goitre.	Excision.	Antiseptic silk.	Gloves.	Glass tube.	“	“ 8.
“ “	266	Inguinal hernia.	Radical cure.	“	“	None.	“	“ 8.
“ “	267	Inguinal hernia.	Radical cure.	“	“	None.	“	“ 9.
“ “	268	Gonitis tuberculosa.	Resectio genu.	“	“	Glass tubes.	“	“ 26.
“ 2.	269	Goitre.	Excision.	“	“	Glass tubes.	“	“ 12.
“ “	270	Cystic goitre, abscess.	“	Juniperus catgut.	No gloves.	Glass tube.	“	“ 15.
“ “	271	Tubercular glands.	“	Antiseptic silk.	“	None.	“	“ 9.
“ 3.	272	Graves's disease.	Excision of goitre.	“	“	Glass tube.	“	“ 18.
“ “	273	Epilepsy.	Trephining.	“	Gloves.	Silver tube.	“	“ 17.
“ “	274	Goitre.	Excision.	“	“	Glass tube.	“	“ 17.
“ “	275	Crural hernia.	Radical cure.	“	“	None.	“	“ 11.
“ 4.	276	Carcinoma pancreatis.	Gastro-enterostomy.	“	“	None.	“	“ 13.
“ “	277	Epilepsy.	Trephining.	“	“	Silver tube.	“	Mar.
“ “	278	Epilepsy.	Trephining.	“	“	Silver tube.	“	Feb. 28.
“ 6.	279	Inguinal hernia.	Radical cure.	“	“	None.	“	“ 14.
“ “	280	“	“	“	“	“	“	“ 15.
“ “	281	“	“	“	“	“	“	“ “
“ “	282	Umbilical hernia.	“	“	“	“	“	“ “
“ “	283	Crural hernia.	“	“	“	“	“	“ “
“ “	284	Pes varus corgenital.	Resectio medio-tarsea.	“	“	“	“	“ 20
“ 7.	285	Carcinoma esophagi.	Gastrostomy.	“	“	Glass tubes.	“	Mar. 4.
“ “	286	Pseudarthrosis antebrachii.	Bone suture.	Bronze-aluminium wire.	“	Iodoform gauze.	“	Feb. 28.
“ “	287	Gangrena digit. pedis.	Exarticulatio digiti I and II.	Antiseptic silk.	No gloves.	None.	“	“ 21.
“ 9.	288	Luxatio cubiti inveterata.	Arthrectomy.	“	Gloves.	Glass tube.	“	“ 20.
“ “	289	Luxatio cubiti inveterata.	Resectio cubiti.	“	“	Glass tube.	“	Mar. 18.
“ “	290	Fractura supracondylica invetrata.	Triangular excision of humerus.	“	“	None.	“	Feb. 28.
“ “	291	Fractura condyli ext. humeri male sanata.	Excision of external condyle.	“	“	None.	“	“ 28.
“ 10.	292	Sarcoma colli.	Excision.	“	“	Iodoform gauze.	“	“ 18.
“ “	293	Epilepsy.	Trephining.	“	“	Silver tube.	“	Mar. 4.
“ “	294	Carcinoma mammæ.	Amputation.	“	“	Glass tube.	“	“ 25.
“ 11.	295	Goitre.	Excision.	“	“	Glass tube.	“	Feb. 18.
“ “	296	Epilepsy.	Trephining.	“	“	Silver tube.	“	Mar. 16.
“ “	297	Incarcerated crural hernia.	Herniotomy.	“	“	None.	Abscess 8 days, staphylococcus aureus. Patient touched wound during operation.	Mar. 4.
“ “	298	Crural hernia.	Radical cure.	“	“	“	Prima intentio.	Feb. 18.
“ “	299	Crural hernia.	Radical cure.	“	“	“	“	“ 18.
“ 13.	300	Fracture os frontis, depression.	Excision fragments.	“	“	Glass tube.	“	“ 27.
“ “	301	Inguinal hernia.	Radical cure.	“	“	None.	“	“ 21.
“ “	302	“	“	“	“	“	“	“ 21.
“ “	303	“	“	“	“	“	“	“ 21.
“ “	304	“	“	“	“	“	“	“ 21.
“ “	305	“	“	“	“	“	“	“ 24.

Date.	No.	Disease.	Operation.	Material.	Gloves.	Drainage.	Result.	Date of discharge.
Feb. 13.	306	Crural hernia.	Radical cure.	Antiseptic silk.	Gloves.	None.	Prima intentio.	Feb. 21
" "	307	Crural hernia.	"	"	"	None.	"	[illegible]
" 14.	308	Goitre.	Excision.	"	"	Glass tube.	"	[illegible]
" "	309	Inguinal hernia.	Radical cure.	"	"	None	"	[illegible]
" "	310	Inguinal hernia.	Radical cure.	"	"	"	"	[illegible]
" "	311	Appendicitis.	Resection of processus vermiformis.	"	"	"	"	[illegible]
" 15.	312	Crural hernia.	Radical cure.	"	"	"	"	[illegible]
" "	313	Inguinal hernia.	"	"	"	Glass tube.	"	[illegible]
" "	314	Inguinal hernia.	"	"	"	"	"	" [illegible]
" "	315	Tubercular glands.	Excision.	Juniperus catgut.	"	"	"	" 25.
" 16.	316	Hydrocele vaginalis.	Excision.	Antiseptic silk.	"	None.	"	" 22
" 16.	317	Inguinal hernia.	Radical cure.	"	"	None.	"	" [illegible]
" 17.	318	Graves's disease.	Excision of goitre.	"	"	Glass tube	"	Mar. 9
" 17.	319	Graves's disease.	Excision of goitre.	"	"	Glass tube.	"	Mar. 9
" 18.	320	Inguinal hernia.	Radical cure.	"	"	None.	"	Feb. 28
" "	321	Crural hernia.	Radical cure.	"	"	None.	"	" "
" "	322	Goitre.	Excision.	"	"	Glass tube.	"	" "
" "	323	Congenital goitre, child 3 months.	"	"	"	None.	Infection from small opening in esophagus.	Mar. 11
" "	324	Hydrocele vaginalis.	"	"	"	None.	Prima intentio.	Feb. 24.
" "	325	Torticollis spasticus.	Dividing of muscles.	"	"	Glass tube.	"	Mar. 4.
" 20.	326	Congenital hernia.	Radical cure.	"	"	None.	"	Feb. 28
" "	327	Malignant goitre.	Excision.	"	No gloves.	Iodoform gauze.	"	Mar. 4.
" "	328	Inguinal hernia.	Radical cure.	"	Gloves.	None.	"	Feb. 28.
" "	329	Inguinal hernia.	"	"	"	"	"	" "
" "	330	Crural hernia.	"	"	"	"	"	" "
" 21.	331	Cancer of colon ascend.	Excision, resection of colon and ileum.	"	"	"	"	Mar. 12.
" 22.	332	Malignant goitre.	Excision.	"	"	Glass tube.	"	" 4.
" "	333	Goitre.	Excision.	"	"	Glass tube.	"	" 4.
" "	334	Inguinal hernia.	Radical cure.	"	"	None.	"	" 2.
" 23.	335	Gastrectasia.	Gastroenterostomy.	"	"	None.	"	" 12.
" 23.	336	Fibrosarcoma muscle.	Excision.	"	"	Glass tube.	"	" 12.
" 24.	337	Omarthritis tuberculosa.	Resectio humeri.	Juniperus catgut.	"	Glass tube.	"	"
" 27.	338	Carcinoma pylori.	Resectio pylori.	Antiseptic silk	"	None.	"	"
" 28.	339	Carcinoma esophagi.	Gastrostomy.	Antiseptic silk.	"	Iodoform gauze.	"	" 14.

the wound during a long operation from time to time with sterilized water, to get rid of air infection.

But the view of Döderlein does not really prove right, according to the researches made by my assistants (especially Dr. Pfähler) during this winter; it was without one exception staphylococcus albus which was found in our gloves during and after operations, and not, as Döderlein says, germs of the most different kind. Staphylococcus albus is the usual inhabitant of the human skin and evidently remains intact in the deeper layers of it even after we have washed away every germ from the surface. We have to conclude that the infection of the glove comes from the surface of the hand rather than from the air outside. Lockett (working in Keen and Coplin's laboratory at Jefferson Medical College, Philadelphia) has proved that cotton gloves, even when paraffined according to Menge's method are readily infiltrated with any germ from inside as well; that is to say, from the surface of the non-disinfected hand, or purposely infected hand, as well as from outside, when infectious liquids come in contact with the glove the germs go through it to the skin underneath.

Lockett, therefore, is quite justified in coming to the conclusion that impermeable or rubber gloves are by far preferable to cotton or silk gloves. Foege-Manteuffel has first in 18— proposed to use such gloves for certain operations on a large scale, and Perthes (clinic of Trendelenburg) has recommended the same, though admitting permeable silk gloves as well. Halsted and McBurney seem to have used rubber gloves even before those propositions of German surgeons. But *à priori* we might think it rather strange that all these advocates of gloves, and even rubber gloves, give very categorically the prescription of thorough disinfection of the hands "as if the gloves were not going to be worn." It is the more strange to hear that, because the principal reason for recommending gloves is "that with the existing methods it is practically impossible to secure absolute disinfection of the hands." We understand perfectly well that we are to wear rubber gloves when we are in the impossibility of washing our hands, as this may happen on a battlefield; as Bergmann gives the description of such a situation, where there was no other water at hand than the antiseptic solutions of an ambulance carriage, during the Turco-Russian War. But when we are recommended to wear gloves because it is impossible to disinfect our hands, and at the same moment as earnestly recommended to disinfect our hands before we put on the gloves, what are we to think of such contradiction? Human nature is always longing and searching for perfection, but a wise man makes the best of imperfect means. Surely it is difficult to *sterilize* our hands as well as the patient's skin, but we are able to *disinfect* them easily to that point, though, as to that point that we get sure aseptic healing. What we must ever look out to realize is absolute destruction of every germ, that is, *sterilization;* what we have already arrived at is avoiding to introduce into the wound germs under such conditions and in such quantities that, according to their virulence, they may develop and exercise poisonous action before the damaged parts have regained the normal protective influence by restoration of good circulation. How could we ever expect to destroy every germ on our wounds if it was true, according to Schimmelbusch's, Ricker's, Neetzel's references, that after five to ten minutes bacteria (virulent or not) are to be found in the circulation and in internal organs, when implanted on fresh wounds? But Friedrich and others have also shown that living tissues destroy easily a certain quantity of these germs, especially when they are not yet adapted to the life in these tissues by previous development, that is to say, when they have not yet arrived to a certain degree of virulence to human body.

Though the investigations of Magrassi, Marey and others seem exact, that in the follicles, and sometimes in the "lymph spaces," the skin includes germs to a greater depth, we have sufficient proof that the normal inhabitants of human skin, such as the staphylococcus albus, in the quantities and under the conditions it is left after thorough cleaning with hot water and alcohol in the deeper layers of the skin, do not interfere with quick and perfect healing of even large wounds. Therefore we do not need sterilization of our hands, but we want to hinder development of germs, that is, disinfection. Now virulent germs, which develop quickly, fortunately don't push on to the deeper layers of our skin, except they be directly introduced in the same way as in Garrè's well-known experiments with staphylococcus aureus; and if they do, they often give rise to irritation, as eczema, acne, etc.; therefore we need disinfection also of the deeper layers of our skin only in the case when we are suffering from skin disease or when our hands have been *soaked* with highly virulent bacteria. Those which are deposited on our skin from the surrounding air can be easily got rid of by thorough cleansing of our hands and alcohol treatment; deep disinfection is necessary only when we have been obliged to infect our hands with the discharges of infected wounds or organs.

Are we able to realize a sure sterilization of our hands? I am sure, with Fürbringer, Döderlein, Goimer and others, that we are. Even Lockett's experiments are in favor of this. If we brush our hands according to Fürbringer's method, with soap, hot water and alcohol for fifteen minutes or more, and bathe and brush them again for ten minutes in hot one-per-cent. sublimate solution, no germ will develop for the following operation. But to sterilize in that way our hands repeatedly in short times is highly dangerous for the health.

Therefore we would better avoid touching any infective fluids or septic matter with our hands — and here the question of gloves arises in a much more commanding form. Let us *wear gloves before and between the time of our operations*, wear cotton or leather gloves when we have to touch and examine dirty people in the out-patients' room, wear impermeable gloves whenever we touch an infected wound or open an abscess or make a vaginal or rectal examination.

Gottstein has seen 50 cases of perfect primary union with staphylococcus albus in the stitch-openings, and Schloffer has found in the discharge of nearly every wound already after a few hours the staphylococcus albus, but, thanks to the bactericidal faculties of the wound secretion, it did not develop, except in cases of accumulation of liquids and around aseptic ligatures.

The best gloves certainly are rubber gloves, as recommended by Halsted, Foege-Manteuffel, Friedrich,— only Opitz is of a contrary opinion,— but as yet they are so expensive and destructible that it is impossible to use them otherwise than for the cases where infective liquids are likely to soak our hands. Against contamination by dry dirt, cotton or silk or leather gloves will do, as bacteria won't go through from the hands at once as long as the skin is dry. Double gloves, as proposed by Perthes, of silk inside and rubber outside, diminish the finer touch of the fingers too much. I need not add that for operations gloves must be sterilized, and this is best done by steam or boiling (soda) water, as for other material.

Surgeons are to wear gloves during professional activity and should be allowed a time without wearing gloves only during their holidays. In doing so we are able to arrive to perfectly sufficient preparation of our hands for operations by the most simple means. As to my own hands, during the whole winter *I never used any chemical antiseptic* before the operation. The preparation consisted exclusively in *cleansing* with soap and brush for fifteen minutes at least under a *stream* of hot water and then brushing with alcohol at 85 per cent. for five to ten minutes, till every particle of skin is thoroughly cleansed. I think it to be very important that we always should use brushes lying in sublimate solution, that cleansing with soap and hot water should be done under a stream of water and not in a basin, and that we should not put our hands into water again after the alcohol washing. Except in different little details my experience confirms entirely the method of Ahlfeld, quite independent of his view that *alcohol* is a real and strong disinfectant, as is agreed with by Vahle and Reinicke, though Leedham-Green finds the contrary and Gönner accepts it only for certain organisms. It may be that it is; then I have to call my cleansing a disinfection. But according to other observers it is only a superficial one, as Krönig thinks he has proved in repeating Reinicke's experiments. I agree with Ahlfeld, that alcohol is far superior to any other liquid for the preparation of our hands, and will be of the utmost importance in war practice, when water may be wanting. Even temperance or abstinent people will agree that in this form it is quite free from danger to our health.

But as long as the question as to the chemical disinfecting properties of alcohol is not settled I think it to be wise not to rely so much upon these qualities, but to accept as perfectly sure its power to cleanse away from the epidermis every particle of fat and dirt which might include any greater quantities of infective material, to make the latter improper to develop by drawing off the water, that is to say, to accept its purely physical disinfecting property.[4]

All that has been said for the skin of the surgeon's hands has to be carried on to the hands of every assistant and nurse engaged in the operation, and in the same degree *to the patient's skin.* It was a long time quite astonishing to see surgeons wash and disinfect their own hands for twenty minutes and more, and after that time quickly wash the patient's skin with a little soap and water. I am quite convinced that a long time much more infections of wounds were the consequence of insufficient cleansing of the patient's skin than of want of disinfection of the operator's hand, in the practice of many surgeons. In reality patient's skin is much more dirty, as a rule, much oftener the seat of eczema and small pustules of acne, that is to say, in a severely infected condition, than our own hands. It comes in a very close contact with the wound along the line of incision, and, as Landerer remarks, with the threads drawn through the skin.

As a rule, then, the patient's skin needs more care for cleansing and stronger disinfection than the hands. The patient's skin in our clinic is cleansed not only with soap, hot water and alcohol, but still with ether, as ether takes away the fatty dirt more quickly. Besides that, it is an absolute rule that shaving (of the hair) and cleansing with hot water and soap by the brush is to take place *a day before*, and only the final cleansing with ether and alcohol immediately before the operation. When there is the slightest sign of irritation (eczema, acne, etc.) thorough disinfection takes place with an antiseptic solution of sublimate, and the day before operation a glycerine solution of carbolic acid (formol does well also) is rubbed in. My assistants wash their hands — after the hot water — in alcohol, cleansing finally with sublimate or with hydrargyrum oxycyanatum in a one-per-cent. solution. Though no doubt we can arrive at a perfect disinfection of our hands by brushing and soaking them long enough in a one-per-cent. sublimate solution after the above manner of cleansing, I don't think at all that we should unnecessarily poison ourselves (and our patients) by this inhibition with a great quantity of sublimate, except in cases where there has been a real infection with virulent organisms before. Some surgeons can't bring sublimate on their hands without feeling toothache and diarrhea coming on very soon, and I don't think that this strong poison can be indifferent even for those surgeons who are not aware of any immediate effect, or for a delicate patient. Why then should we do it every day, when clinical observation proves irrefutably, as I can show by my statistical tables, that Ahlfeld's modified method is perfectly sufficient?

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[4] According to Ahlfeld, the disinfecting action of alcohol lies in its entering into the depth of the skin and, by drawing off water, destroying even deeper bacteria.

There is one more point of capital importance in the cleansing of the hands, that is, the manner of dealing with the nails. We all know that this is the most difficult part. Why then don't we part with this part entirely? Instead of cleansing the *Internagelraum* with special instruments, the only good way is to *cut away the nails entirely* as far as it can be done. I have been struck in the clinic of Mr. Arbuthnot Lane in London by the advantage of this method and have ever since insisted that all my assistants and nurses engaged during my operations should cut the nails entirely away to the skin, so that nothing be left which needed any other special cleansing, except rubbing with brush as other parts of the skin. This is not *à la mode des salons* of good society, but I think we are justified in introducing our own fashion in our operating-rooms. The question of the nails is of such importance that I am satisfied in putting rubber fingers on my hands for infectious examinations, till we shall get rubber gloves less expensive and lasting longer, and even for operations rubber fingers alone will prove of great importance where nails cannot be cleansed sufficiently.

There is a further point of utmost importance to warrant the healing by first intention after our operation, that is the choice of reliable ligatures. As all investigators agree, it is impossible to keep a wound after an operation of any length absolutely sterile; it is only a consequence of this fact that our aseptic ligatures which we put in the wounds must be infected. Döderlein has shown that aseptic sutures become infiltrated with germs, as a rule, when lying in the skin even for a short time. Catgut proved to be infected after eight to ten days in 58.5 per cent. of his cases, and silk in 57 per cent; even silkworm gut was found in 41.5 per cent. of cases containing germs; and Schloffer has shown that staphylococcus albus, which is perfectly innocent as a rule, may develop and give exceptionally an abscess, when coming under specially good conditions of life in quiet liquids and in the fibres of aseptic ligatures. Hägler has arrived at the same result in examining aseptic ligatures taken out of wounds after a shorter or longer interval. He found as a rule between the fibres in the interstices of the thread large quantities of germs on microscopical sections even when the surrounding liquids proved to be free. But this is not only and not even in the first line a consequence of the always existing slight contamination of our wounds with germs, but of an impregnation of the threads during their application. Hägler has shown that it is quite sufficient to draw sterilized silk thread through his fingers, even when these are thoroughly cleansed before an operation, to get infiltration with germs. He therefore recommends to use antiseptic threads exclusively, and affirms that ever since this change in using silk no case of thread abscess has occurred in the clinic of Professor Socin.

We have long before insisted[5] on the necessity that *the ligature should always be antiseptic and not only aseptic*, so as to work against the possibility of development of germs in the tissue of the thread which we always put into our wounds during an operation. That catgut is still more apt to be infiltrated with germs than silk Döderlein and Hägler have found, agreeing together, and clinical observation has undoubtedly proved.[6]

Hägler has found that the thorough impregnation of silk with sublimate does not interfere with strength during a certain period; therefore antiseptic silk is by far the best material.

But the fact of the easy contamination of our ligatures by the fingers seems to me to constitute a good indication for the use of gloves. If the drawing of a thread through the fingers and hand is sufficient to infect sterile threads in nearly all cases, do we not increase the chance of avoiding this by using gloves? — certainly not gloves already soaked with blood or serum, but gloves which are put on just before the ligaturing of the vessels and after stopping hemorrhage by artery forceps. We always leave large numbers of artery forceps in the wound and avoid putting any ligature in before the end, when the wound and fingers have once more been washed with great care. Then the moment has come to use fresh gloves to touch the threads, and *this is the really useful method of employing gloves*, and where cotton and silk gloves will do as well as rubber gloves.

Allow me to allude to the last point of importance for the question of aseptic healing, that is, the most exact stopping of bleeding. The only two cases where, during the whole winter session, secondary infection with formation of an abscess took place were operations with secondary bleeding and formation of hematoma. If one has to open and put a drainage-tube in a wound filled with blood the danger of introducing germs in that *Nährboden* is much greater than in the beginning; therefore we are to avoid secondary bleeding if possible, by closing a wound entirely by sutures, without drainage. But where it is impossible to avoid the formation of a cavity which must necessarily fill with serous or bloody oozing from the divided vessels, we ought to be extremely careful not to get much after-bleeding and put drainage-tubes in every cavity till the moment of further accumulation of liquid in the wound is over. As Friedrich says in his experiments on infection of wounds, so it is with our clinical means, that the *physical* part of the treatment of wounds is by far more important than the chemical one and therefore gloves must be acknowledged as a step forward under certain conditions.

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[5] *Vide* Chir. Operationslehre 1, 2d Bd. edition.

[6] We have shown that in two of our three above cases where abscess formed in the wound as a consequence of infection during the operation catgut was used for ligatures. By studying the latest communications of Hahn and Heidenhain, one may see that even his latest experience agrees fully with what I said years ago on catgut and silk. I do not deny that there are methods of preparing catgut — for instance, with chromic acid — where catgut is no longer apt to be infiltrated, and to act, as Kiefer says, as *todter Nährboden*, but then, also, it has lost quality of quickly absorbable material and has no more any superiority over silk ligatures, which we can get absolutely sterile and antiseptic in the degree we wish by very simple preparation. We therefore recommend fine *antiseptic silk* as a perfectly reliable material for aseptic healing of wounds and reserve catgut for infected wounds, inasmuch as it is impossible to avoid ligatures entirely by simple torsion of the vessels.

My conclusion as to the possibility of securing primary union of our operation wounds with or without gloves is the following:

(1) *Either:* Do use sterilized rubber gloves for every operation when you wish to be quite independent as to the form of your nails, the touching of everything you like, and the liberty to wash or not to wash your hands, and when you can spend plenty of money. Put your covered hand from time to time in a strong antiseptic solution (best, two-per-cent. sublimate) during a long operation, if you wish to be very careful.

(2) *Or:* Do never wear gloves for operations, do what you like between your operations, but poison yourself every time before you operate by brushing and bathing your hands for ten minutes in a strong, hot sublimate solution after thorough washing and cleansing with hot water, soap and alcohol for fifteen minutes. Repeat a short antiseptic ablution frequently during a long operation, when you wish to be very careful.

(3) *Or:* Go the golden middle-way; avoid touching with uncovered hands any infective or septic material *between* the operations or wash it carefully away at once, cut your nails as short as possible, brush your hands thoroughly with hot water, soap and alcohol (85 to 95 per cent.), avoiding any poisonous disinfectant before you operate, and, if you wish to be very careful, put cotton, silk or, best, rubber gloves on when you touch the threads for ligatures and sutures and when you have to tear the tissues much and to rub your fingers into the depth of a wound.

(4) But don't forget that the healing of the wounds *per primam intentionem* does not depend exclusively upon your hands, but also upon the same preparation of the patient's skin, upon sterilization of everything else coming in contact with the wound and its surroundings, upon complete arrest of bleeding, exact closing of the wound by sutures, or avoiding accumulation of fluids in cavities, necessarily left, by drainage, and, last but not least, upon the use of *anti*-septic threads for ligatures and sutures, as long as impermeable threads are not yet invented.

Berne, March 25, 1899.

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SANITARY LESSONS OF THE WAR.[1]

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As compared with the Civil War and with other great wars during the present century the mortality from wounds and disease among our troops during the war with Spain has been low. Our wounded have, to a large extent, had the advantage of prompt treatment with antiseptic dressings, and a very considerable proportion of those who were not killed outright have recovered without any mutilating operation or septic complication. The mortality from disease has also been comparatively low, but, unfortunately, during the first months of the war that scourge of new levies of troops, typhoid fever, prevailed in many of our camps and claimed numerous victims. It is well known to sanitarians and military surgeons that, as a general rule, more soldiers succumb to disease than are killed by the bullets of the enemy, and our recent war has not been an exception in this regard. The total number of deaths reported in our enlarged army, including regulars and volunteers, from May 1, 1898, to April 30, 1899, is 6,406. Of these, 5,438 died of disease and 968 were killed in battle or died of wounds, injuries or accident. During the Civil War the number of deaths from disease was 186,216.[2] The number who were killed in battle or died of wounds was 92,969, or about one-half of the deaths from disease. The total deaths from disease in the Union armies from the commencement of the war to the 31st of December, 1862, was 34,326, and in the Confederate armies during the same period, 31,238.

The following table gives the monthly death-rates from disease in our armies from May 1, 1898, to April 30, 1899, and, for comparison, the rates for the same period during the first twelve months of the Civil War:

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[1] Abstract of a paper presented in the Section of State Medicine, American Medical Association, Columbus, O., June 8, 1899.

[2] In addition to this 24,184 deaths are recorded as from unknown causes, and probably most of these deaths were from disease.

COMPARISON OF MONTHLY DEATH-RATES (PER 1,000) FROM DISEASE.

	1861-1862.			1898-1899.		
Months.	Mean Strength.	Number of Deaths.	Ratio per 1,000 of M. S.	Ratio per 1,000 of M. S.	Number of Deaths.	Mean Strength.
May	16,161	18	1.11	.26	42	163,726
June	66,950	55	.82	.44	90	202,520
July	71,125	106	1.49	1.72	451	262,613
August	112,359	212	2.15	5.21	1,400	268,507
Sept.	165,126	365	2.21	5.89	1,541	261,824
Oct.	256,884	725	2.82	3.17	809	255,000
Nov.	301,813	1,145	3.79	1.51	365	242 000
Dec.	343,181	1,471	4 29	.84	201	240,000
Jan.	352 760	1,598	4.52	.85	180	211,000
Feb.	327,734	1,316	4.11	.87	156	180,000
March	328,878	1,575	4.79	.90	123	136,000
April	410,416	1,881	4.58	.71	80	113,000
Annual	229,452	10,522	45.86	25.73	5,438	211,350

In comparing the death-rates from disease during the year of the Spanish-American War, May 1, 1898, to April 30, 1899, and the first year of the Civil War, May 1, 1861, to April 30, 1862, note should be taken in the first place that the mean strength in May, 1861, was only 16,161 as compared with 163,726 men in service in May, 1898. The mustering in of volunteer troops progressed more slowly in 1861 than during the recent war, so that it was not until September and October, 1861, that the mean strength assumed proportions equal to that of the months of the Spanish War. Although the number present in the camps of 1861–1862 after October, 1861, was largely in excess of those aggregated during the past year, the average annual strength during both wars did not differ greatly. Nevertheless, the deaths from disease in 1861–1862 numbered 10,522, while in 1898–1899 they amounted only to 5,438. The death-rate per thousand of strength mounted gradually month by month in 1861–1862, and indeed it did not reach its acme until February, 1863, when the rate of 6.39 was reached. In 1893, on the other hand, the acme, 5.89, was reached suddenly in September, but owing to the sanitary measures adopted the fall during October and November was as rapid as had been the rise.

The same gradual rise is seen in the mortality statistics of typhoid fever during the Civil War. The highest death-rate, 2.81, was not reached until May, 1862, the thirteenth month of the aggregation of the troops, when 1,092 men died of this disease, and the fall of the rates was as gradual as the rise. On the other hand, the rise in 1898 was sudden, the maximum rate, 3.57, being reached in September, when 933 men died of this disease; but the fall during the months of October and November was as notable as the rise. This sudden suppression of the disease cannot be attributed to an exhaustion of the susceptibility of the troops to attack from this fever, as they only suffered at the rate of 12.37 per thousand of strength during the twelve months, whereas the troops of the Civil War suffered at the rate of 19.71 per thousand. It can be attributed only to the active preventive measures that were instituted, and especially to moving the troops to fresh camp sites, and to the greater care exercised in the disposal of excreta.

The average mortality from typhoid fever in our regular army since the Civil War has been: For the first decade (1868–1877) 95 per 100,000 of mean strength (.95 per 1,000); for the second decade (1878–1887) 108 per 100,000; for the third decade (1888–1897) 55 per 100,000. This latter rate compares favorably with that of many of our principal cities. For example, it is exceeded by the typhoid death-rate in the city of Washington, which is 78.1 per 100,000 (average of ten years, 1888–1897); by that of the city of Chicago, which is 64 4 per 100,000; by that of Pittsburg, which is 88 per 100,000. These figures, however, do not show the entire mortality in the cities mentioned as a result of typhoid fever, for without doubt many of the deaths ascribed to "malarial fevers" were in fact due to typhoid infection. Thus in the city of Washington the deaths reported from typhoid and typho-malarial fever (average of ten years) numbered 78.1 per 100,000 of the population, while 23.4 per 100 000 are recorded as due to malarial fever. In Baltimore the mortality, as recorded, from typhoid fever is 41.5, and from "typho-malarial and other malarial fevers" 18.3 per 100,000. In St. Louis the figures are, typhoid fever, 35.7, typho-malarial and other malarial fevers, 49 per 100,000; in New Orleans, typhoid fever, 26.1, typho-malarial and other malarial fevers, 107.2 per 100,000.

It will be seen that sanitary conditions at our military posts in time of peace, as judged by the typhoid death-rate, compare favorably with those in our large cities in various parts of the country. As a matter of fact great attention has been given to post sanitation for many years past, and through the persistent efforts of officers of the Medical Department great improvements have been made, especially during the past ten years. The result is shown in a reduction of the typhoid mortality from 108 per 100.000 in the ten years ending in 1887 to 55 per 100,000 in the decade ending in 1897. Hygiene is made one of the principal subjects of examination for candidates desiring appointment in the Medical Corps of the Army, and at subsequent examinations for promotion to the grade of Captain and Major is given a most prominent place. It is also the most prominent subject in the course of instruction at the Army Medical School, where the student-officers spend five hours daily for a period of five months in practical laboratory work relating for the most part to the cause and prevention of infectious diseases. It should be remembered, however, that the Army Medical School was not established until the year 1893, and consequently but a small proportion of the medical officers of the army have had the advantage of this course of instruction.

But the comparatively small number of medical officers of the regular army available for duty in the large camps occupied by our volunteer troops at the outset of the war proved to be entirely inadequate to control the sanitary situation in these camps, and as a result of the conditions existing the mortality from typhoid fever in our armies during the year ending April 30, 1899, has been more than 22 times as great as it was in our regular army during the decade immediately preceding the war period. As compared with the first year of the Civil War, however, there is a decided improvement, the typhoid mortality for the first year of the Civil War having been 1,971 per 100,000 of mean strength, and for the Spanish-American War 1,237 per 100,000. Moreover, the vigorous sanitary measures enforced enabled our troops to quickly free themselves from the ravages of this infectious disease, and while the line of typhoid mortality continued to ascend during the first year of the Civil War and subsequently, it rapidly fell after the middle of September last, and for the last six months of the period under consideration has been remarkably low. Indeed, in the history of large armies the record has never heretofore been equalled.

Typhoid fever in our camps has been to a large extent due to the neglect of well-known sanitary measures indicated by me in Circular No. 1, dated Surgeon-General's Office, Washington, April 25, 1898; also to a very general failure upon the part of medical officers attached to the regiments to recognize the disease in its milder forms and during its earlier stages. As a result of this the camps became infected, and the failure to use proper methods of disinfection, and the continued occupation of infected camps, has led to the development of veritable epidemics of typhoid fever in several of the camps occupied by our troops.

The principal lessons to be derived from our recent experience may be stated as follows:

A trained medical corps hardly adequate for an army of 25,000 men cannot control the sanitary situation when this army is quickly expanded to 250,000. Physicians and surgeons from civil life, however well qualified professionally, as a rule are not prepared to assume the responsibilities of medical officers charged with administrative duties and the sanitary supervision of camps. The proper performance of such duties cannot be expected from a physician without military training or experience, no matter how distinguished a position he may have held in civil life.

Courage and patriotism on the part of line officers and enlisted men cannot take the place of knowledge and experience. New levies of troops are, as a rule, ignorant of the first principles of camp sanitation, and reckless as to the consequences of their neglect of prescribed sanitary regulations. Therefore training and discipline are essential factors in the preservation of the health of soldiers in garrison or in the field.

The value of the aphorism "In time of peace prepare for war" has received additional support. This preparation should include a corps of trained medical officers larger than is absolutely necessary for the army on a peace basis, and systematic instruction in military medicine and hygiene for the medical officers of the National Guard as well as for those of the regular army; also instruction of line officers in the elements of hygiene and especially in camp sanitation. It should also include the establishment of camping grounds in various parts of the country, having an ample supply of pure water, a proper system of sewers, etc. If our volunteers could have been assembled in such camps during the late war a saving in lives and money would have resulted, which would without doubt have demonstrated the economy of such preparation for war in time of peace.

Vaccination in Vienna. — The hundredth anniversary of the first vaccination in Vienna has just been celebrated in that city. Dr. Johannes Chevalier de Carro, a native of Geneva, who studied medicine in Edinburgh, made Jenner's acquaintance, and, on settling down in Vienna, received from him in May, 1799, the first cow virus, with which, on May 10th, he vaccinated his two elder sons, who subsequently helped him to promote the use of the new preventive.

CLIMATE AND SEA VOYAGES IN THE TREATMENT OF TUBERCULOSIS.[1]

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At the International Medical Congress at Berlin in 1890 I had the honor of introducing the discussion on the Climatic and Hygienic Treatment of Pulmonary Tuberculosis. On that occasion I expressed my opinion that climatic treatment by itself was insufficient in most cases; that careful supervision and guidance of the patient by the doctor was necessary, and that, therefore, treatment in special establishments was to be preferred in the majority of cases, whilst for poor patients it was urgently required.

In the present Congress you have appointed me to introduce the discussion on climatic treatment. My opinion, gentlemen, is now more decided than at the former Congress, for I hold that climate is really important, but is insufficient unless there be careful medical supervision and hygienic and dietetic guidance. Obeying your directions, I shall endeavor in a short survey to explain what share climate can take in the treatment of tuberculosis. I will divide my rapid summary under four heads:

(1) Climates of mountains and high altitudes.

(2) Inland climates of low elevation, including those of forest, of deserts, and of Egypt.

(3) Climates of the coast and of small islands; sea voyages.

(4) Short indications for the use of different climates in different cases of tuberculosis.

I. CLIMATES OF MOUNTAINS AND HIGH ALTITUDES.

The differences are great between the various localities which are grouped together under this heading. Whilst in the tropics an elevation of 1,800 to 3,000 metres over the sea is necessary, in the latitudes further from the equator (46° to 54°) an elevation of 400 to 500 metres is generally sufficient. When the surroundings of a place are much higher than the place itself, the effect of high altitude is in many respects diminished; the effect is increased when the surroundings are lower.

You know, gentlemen, that in former years the prevailing opinion was that consumption was more likely to be cured in warm health resorts than in cold ones, and you know also how scanty were the grounds for this opinion. You are aware that in Lima, the capital of Peru, about twelve degrees south of the equator, consumption is especially frequent, and runs a rapid and fatal course; but that patients, if they go early enough into the neighboring Peruvian Andes, at an elevation of 2,500 to 3,000 metres above sea-level, mostly get better. For the recognition of this fact we are chiefly indebted to the late Dr. Archibald Smith, who for thirty years exercised the medical profession, partly in Lima itself, and partly in the silver mines of Cerro de Pasco, nearly 4,000 metres above the sea. The custom of sending consumptives from the hot coast of Lima to the cool altitudes of the Andes is supposed to have existed from "unknown times." Although I myself have never been in Lima, yet by chance correspondence with the coasts of Peru and Chili, I have had the opportunity of confirming this fact in a series of patients.

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[1] Read before the International Tuberculosis Congress in Berlin, May 24-27, 1899. — From Advance Sheets, British Medical Journal.

In Europe we have mostly given the late Dr. Hermann Brehmer, of Görbersdorf, the credit of having ascertained the influence of mountain climate in pulmonary consumption; but a recent excellent work by Geheimrath, Bernhard, Schuchardt,[2] in Gotha, shows that others did this before Brehmer, and that foremost amongst them Brockmann, in an excellent contribution[3] to Holscher's *Annalen* in 1843, proved the favorable influence of a stay in the Upper Harz in regard to the prevention and cure of scrofula and tuberculosis, and that soon afterwards C. F. Fuchs,[4] though unacquainted with Brockmann's publication, made similar communications. Brockmann wrote in 1843, Fuchs in 1851, and the first edition of Brehmer's book on chronic pulmonary phthisis appeared in 1857, preceded by a similar work in 1856.

The main characteristics of high altitudes are: (1) Low atmospheric pressure; (2) small amount of the absolute and relative humidity; (3) low temperature in the shade; (4) great warmth of the sun; (5) great amount of light; (6) rarity of the clouds; (7) the purity of the air, especially in regard to microbes, to which the bright sunlight and free access of air are antagonistic. The physiological effects of high altitudes are: (1) Amplification of the respiratory movements; (2) strengthening of the muscles of respiration; (3) strengthening of the heart and circulation; (4) increase in the amount of watery vapor and carbonic acid given off from the lungs; (5) increased activity of the skin; (6) increase of appetite and of the amount of food taken, improvement of the digestive functions; (7) improvement in the quality of the blood, and in the nutrition of the organs, particularly of the lungs; (8) increased activity of the nervous system.

We may say that mountain climates are highly stimulant and tonic, but require a certain power of resistance on the patient's part.

It is difficult to exactly ascertain the results of treatment. I myself could follow out the further progress of only a relatively small number of cases. In 144 patients only have I statements on the later condition. Of these 144 patients I have noted cure in 36; in 56 there was improvement in the local signs and in the general nutrition; in 52 cases there was either no improvement, or deterioration, or death within three years of the treatment. Only the smaller portion were treated in special sanatoria; in the remaining larger portion the medical supervision varied very much. The results would doubtless have been much better if the patients had placed themselves under stricter medical guidance, as they were advised. In many cases as a consequence of false steps relapses occurred which confined the patients for weeks and months to their bed or their room, and prevented recovery (which had previously seemed probable) from taking place. In seven cases, however, recovery seemed nearly complete when through some mistake, mostly over-exertion, a deterioration set in, which afterwards led the fatal termination. I must, however, add that Dr. C. Theodore Williams,[5] of London, records better results in his great experience than I do. Dr. Lucius Spengler's[6] results published from his experience in Davos between 1887 and 1890 are also more favorable. Still more satisfactory, however, are the results which Dr. Turban[7] has obtained in his sanatorium at Davos (66.1 per cent. of absolute and relative recovery), that is, obtained by an association of high Alpine climate with sanatorium treatment.

In regard to the prevention of tuberculosis by high altitudes, my results are decidedly better. In 40 cases of children from tuberculous families education in the mountains, with good diet and plenty of fresh air, has had a favorable result, and only in four of these cases has tuberculosis under unfavorable conditions afterwards developed. Seaside places have likewise a prophylactic action, but so far as I can conclude from my experience, they have a greater influence against the so-called typical scrofulous conditions than against pulmonary tuberculosis, whilst with high altitudes the reverse is the case. Amongst the elevated localities of which I have experience, I give certain places in the Peruvian Andes the preference over all others; especially Jauja and Huancayo, about 3,000 metres above sea level, and the rather less elevated Quito, near the equator. The advantages are — the great dryness and rarefaction of the atmosphere, the strong isolation, the medium temperature and equability of the temperature, which, day and night, summer and winter, is said to vary only between 14° and 18° C. The great drawback, especially for Europeans, is the long, tiring, and costly journey.

The Rocky Mountains, in the United States of America, contain likewise many good, but mostly not yet developed, places. The best arrangements for medical treatment are afforded by Colorado Springs, Manitou and Denver, the two first over 1,800 metres, the last about 1,500 metres, above sea level. These places are much less equable in their climatic features than are the localities mentioned in the Andes; in this respect they resemble much more the High Alps of Switzerland; the Rocky Mountains are, however, somewhat drier and warmer than Davos and St. Moritz, and also more windy. Denison, Solly, and C. T. Williams have reported on these places. Private sanatoria have as yet hardly been established in the Rocky Mountains, but are better represented in the lower North American mountains; and the excellent sanatorium in the Adirondacks, under Dr. Trudeau's management, offers an example which deserves to be copied. The flourishing Climatological Association of North America will, it is to be hoped, encourage the foundation of many sanatoria.

In the Swiss Alps all of you are acquainted with Davos, Arosa, St. Moritz, Wiesen, Leysin and Les Avants. I shall, therefore, not consider these localities further, nor the places on the relatively lower German mountains; the latter are rich in sanatoria, which will probably be reported on by the opener of the discussian on sanitorium treatment.

In France the Société des Sanatoria de France is endeavoring to more extensively develop climatic treatment in the inland, while an analogous society does the same for the coast, and to this subject we will come back later. The Trespoey Sanatorium near Pau, and the Durtol Sanatorium in the Auvergne are already opened.

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[2] Zur Geschichte der Anwendung des Hochenklimas (Gebirgsklimas) behufs Heilung der Lungenschwindsucht (Lungentuberculose). Jahrb. d. Königl. Akad. gemeinnütziger Wissenschaften zu Erfurt, neue Folge, Heft xxiv, 1898.

[3] Der Oberharz, ein Schutzt und Heilort für tuberculöse Schwindsucht, Holscher's Annalen für die gesammte Heilkunde, 1843.

[4] Das Verhältniss der Krankheiten in senkrechter Richtung von der Küste der Nordsee bis zum Rücken des Thüringer Waldes. Janus: Central Magazin, Gotha, 1851 and 1853.

[5] The Treatment of Pulmonary Tuberculosis by Residence at High Altitudes, Practitioner, June 1898, p. 633.

[6] Zur Phthisiotherapie im Hochgebirge, Fortschritte der Krankenpflege, 1893.

[7] Beiträge zur Kenntniss der Lungen-Tuberkulose, by Dr. K. Turban, 1899, p. 154.

The highlands of South Africa thirty or forty years ago were valued as unfailing climates, but experience has limited their reputation. Their disadvantages are the great heat and dryness in summer, the frequent alternation in winter of great heat in the daytime with great cold in the night-time, and the frequency of wind and dust. However, of 21 cases, I have had seven lasting recoveries amongst patients in the first stage of pulmonary tuberculosis; these patients settled there later, and occupied themselves or still occupy themselves with agriculture. Dr. Symes Thompson[8] and Dr. Hillier,[9] of London, have given us information of these regions.

Bloemfontein, Alliwal North, Kimberley, Burgersdorp, Pretoria, Beaufort West, and Cradock belong to the best known places in the more elevated regions (1,300 to 1,500 metres). Regular sanatoria are not yet developed. Harrismith, in the Drakenberg range, with a sanatorium there, would be of the greatest utility for the extensive less elevated regions of the southeastern coast of South Africa, and particularly for the not very hygienic but otherwise flourishing coast towns.

II. INLAND CLIMATES OF LOW ELEVATION, INCLUDING THOSE OF FORESTS, OF DESERTS, AND OF EGYPT.

Like all of you, I have seen many cases of recovery on level land and even in large towns, but the proportion of recoveries to the number of patients was small. The recoveries have been chiefly in persons who spend much of their life in the open air and take sufficient food, especially milk, for instance, in the case of gardeners and those employed in agriculture and landowners, but also in bakers who deliver the bread, and in Black Forest clockmakers who carry their clocks about for sale, and who have exchanged their work in shut-up rooms for work in the open air. The proportion of recoveries was certainly greater at places with shelter from wind, much sunlight and medium temperatures, such as Pau, Gardone-Riviera, Arco, Meran, Montreux, Lugano, Locarno and Pallanza; but repeatedly at these places also well-founded hopes of recovery have been destroyed by too long walks, by exciting games of cards in smoky rooms, and by other harmful factors.

In the question of the influence of forest on the soil and the air of a locality, Ernest Ebermeyer[10] has made a valuable study, but our knowledge of the effects of forest in cases of tuberculosis is very limited. In general, one may say that in a forest the ground (on the average for a year) is some degrees colder, and that the ground and the air are somewhat moister; the difference between day and night temperatures is less; the movement of the air is diminished; rain is more frequent; there is less light, and the amount of ozone in the atmosphere is increased. These characteristics are less marked in forests of pine than in forests of deciduous trees, and in the latter are less in winter than in summer, when the trees are in foliage. There are, however, other modifications in the atmosphere of forests which cannot be exactly estimated — possibly changes in the energy of the oxygen due to the vital processes taking place in the leaves — and which exert a refreshing influence. There are also exhalations from the trees to be taken into account, especially in pine forests, where the aromatic substances in the air may possess an antiseptic influence. Then the protection from wind should be considered, which is felt not only in the forest itself but likewise in the neighborhood. It is therefore important to have a wood, especially of pine, in the direction from which the general cold winds come. From cold local winds also a forest not rarely affords shelter. Thus one may observe on mountain declivities, when the upper part of the slope is covered with trees, that the tender plants and shrubs below the wood are thereby sheltered from the cold air, which during the night moves downwards from the summit, whereas similar plants growing at an equal height, but at a spot not protected by forest, are frozen. From what has been said I should not be in favor of erecting sanatoria in level dense forests of deciduous trees, for the greater moisture of the soil (Bowditch and Buchanan) and the diminution of light cannot act favorably. However, on the slope of a wooded mountain, where there is a clear space with free access of air and light, a forest may constitute a favorable element in the climatic condition, especially when the trees are pines.

In regard to desert climate, it is an old observation that the inhabitants of deserts, the Bedouins, as long as they live in tents, remain free from consumption, but that among those of them who live in houses the disease is not very rare. My own inquiries in Egypt and on the peninsula of Sinai led to similar conclusions. From Bedouins who accompanied me on an excursion to Mount Sinai, I learned that as long as they travel no cases of consumption occur, but that some of their relatives who seek a livelihood in Cairo, Suez and Alexandria die of phthisis. I have made similar observations among other wandering tribes who do not live in the desert. Several times in Asia Minor I have met with wandering bands of Turkomans; for instance, near ancient Sardis, the capital of the Lydian monarch Crœsus, I met a large horde, consisting of strong men and women, quite free from phthisis and likewise healthy in other respects. They told me, by means of my interpreter, that members of their horde who had obtained employment in Smyrna and Constantinople had died there of consumption. Possibly, therefore, the immunity from phthisis depends not merely on desert climate but on life in the open air in thinly-populated districts.

The characteristics of the climate of the desert are purity of the air, its richness in ozone, great warmth of the sun, abundance of light, dryness, and great rarity of rainfall. The disadvantages are the violent winds, mostly accompanied by dust, which not only obscures the sun like a dense fog but gets into the clothes, penetrates into closed rooms, and is deposited on articles lying there. These dust storms are not limited to the periodical khamseen (chiefly in March and April) but occasionally blow from one to three days at any time of the year. Another disadvantage is the absence of shelter, so that one is oblged to have tents and servants, which necessitate great expenditure. One is therefore seldom in a position to test the advantages of the desert, but in individual instances I have seen great benefit derived from it. If sanatoria were to be established near desert stations, the cost for each person would be much diminished.[11]

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[8] On the Elevated Health Resorts of the Southern Hemisphere, Med. Chir. Trans., 1873

[9] The Climate of South Africa, Practitioner, June, 1898, p. 619.

[10] Die physikalischen Einwirkungen des Waldes auf Luft und Boden. Aschaffenburg, 1873.

Egypt is a term which, though often employed in climato-therapeutics, includes very different climates. Egypt is best considered after deserts, because the localities of which therapeutic use is made owe their characteristics mainly to their proximity to the desert. The features which they have in common during the winter months are: (1) Plenty of sunshine; (2) a clear sky in general; (3) a moderately high temperature, with considerable variation between day and night; (4) a low degree of humidity and rarity of rain; (5) a comparatively aseptic air in the thinly-peopled districts, an advantage which is wanting in the crowded district of Cairo. The disadvantages are: (1) The well-known strong dust winds; (2) the short duration of the medical season; (3) the return in spring to places with great climatic change; (4) the long journey; (5) the absence of sanatoria. Moreover, the constancy of the meteorological features is by no means so complete as it is reputed to be. It is said that amongst health resorts it is only in Egyyt that one may depend on settled weather. After two long visits to Egypt I cannot confirm this belief. Cases for which Egypt has advantages are those complicated with albuminuria, with emphysema, and with frequent attacks of bronchitis; cases with tendency to diarrhea are to be excluded.

Of the places resorted to by invalids, Cairo is still unhgyienic, and only the Ghezireh Palace, which is outside the town and now a large hotel, can be recommended. Mena House, about eighteen kilometres from Cairo, situated at the edge of the desert, close to the Great Pyramids, is only suitable from the end of December to about the end of March; before this time the neighbouring delta is still flooded, and afterwards the heat is too great. Helouan, with its well-known baths, which can be reached by a short railway journey from Cairo, is probably at present the best place, because it lies quite in the desert, and can be used during the longest period, from the middle of November to the middle of April. Luxor is a very interesting place to stop at; it consists of hotels and the unhygienic dwellings of the ordinary population. Assouan, the most southern of these places, has much of the exhilarating influence of desert climate, but is very windy, and, owing to the heat, has only a short season — from the beginning of December to about the middle of March. As yet there are no sanatoria anywhere. The patients and the European and American doctors who send invalids to Egypt trust too much to the mere climate without supervision by the medical man, and thus many lives are lost. If there were suitable sanatoria the Egyptian climate could be made good use of. One could prolong the season if one were to erect a sanatorium near Alexandria, preferably at Ramleh, where many patients could stop perfectly well till about the end of May. Inseparably connected with the climatic idea of "Egypt" is the Nile voyage, which can either be made on private ships — the so-called *dahabiyehs* — or on the passenger steamboats, which latter are provided with a doctor. The greatest care is required on these steamboats; colds are very often contracted. The wind is often very violent; a draught can hardly be avoided; the temperature on different parts of the ship — that is, in the sun or in the shade — is always unequal. Private ships are expensive, and the invalid should always have a doctor.

III. CLIMATES OF THE COAST AND OF SMALL ISLANDS; SEA VOYAGES.

Amongst coasts and islands there are, first, the more humid and warm climates, such as Madeira, the Canary Islands, Mogador, Tangier, Cadiz, the West Indian Islands, the Peninsula of Florida, and the coast of Georgia and South Carolina, which can be termed sedative, or even relaxing. Formerly, when cold was feared and warmth was regarded as specially beneficial, these climates were much employed, but now they are much less so, though the Islands of Madeira and Teneriffe are suitable for some cases of pulmonary tuberculosis with irritable weakness of the constitution.

Secondly, we have the drier climates with moderate warmth during winter. Amongst these the localities on the Western Riviera are especially popular; they are characterized by the great warmth of the sun, abundance of sunshine, dryness of the air and moderate amount of rainfall, and may be termed stimulant or exciting. Special caution is required on account of the great difference between the temperature in the sun and the temperature in the shade, on account of the sudden fall of temperature before and at sunset, and on account of the frequency of strong winds with dust. Allied to these climates are those of the Eastern Riviera and of Sicily (Palermo, Taormina, Acireale, Catania), but there is less shelter from cold winds. Algiers and Ajaccio may likewise be compared to them, but they are somewhat moister, and Ajaccio is nearly quite free from dust.

You will understand that on these localities and on many similar ones I must not enter more fully. There is a great want of suitable sanatoria, and the majority of patients trust too much to the climate, and often only seek medical guidance when it is too late. My results here are still less favorable than in the case of mountain climates, but, with careful supervision of the patients, would be similarly much improved. I can likewise not stop to speak of the English seaside places, which have a moderate degree of humidity, and a lower winter temperature. You are aware that till recently well-to-do English, including medical men, showed a great disinclination towards treatment in closed establishments, and that sanatoria and hospitals for the treatment of the poor, though they were not quite so lacking as in other countries, were yet insufficient to meet requirements, but you know also that the struggle against tuberculosis has seriously commenced in England, that to the sanatoria which already exist many new ones will soon be added, and that for those also who possess private means, a few establishments have recently been founded.

Of great value are the places on the North Sea and the English Channel in the treatment and prevention of scrofula. They are likewise useful for the prevention of pulmonary consumption in cases of hereditary disposition, but, in my experience, not to the same extent as mountain climates are.

Ocean voyages are not rarely recommended because the following characteristics are attributed to them: (1) Purity of the air; (2) slight range of temperature; (3) abundance of light; (4) constant movement of the air; and (5) mental rest. However, if one examines the conditions of an ocean voyage more exactly, one finds that these advantages are not always completely presented. For instance, the purity of the air is limited almost entirely to the deck, and is generally wanting in the sleeping cabins and the saloons; the pleasant movement of the air is often transformed into a violent storm, whilst in the zones of calm the reverse is the case; the temperature does not vary much from day to day, but on a long sea voyage the oppressive heat of the tropics has to be supported. Hence the treatment of a serious illness on a sea voyage is rendered difficult by the bad air of the small cabins. I must not pause to discuss the advantages and disadvantages of the different kinds of ships — sailing ships, steamships, wooden ships, iron ships, mixed kinds of ships. Moreover, in respect of the choice between different voyages, I must limit my remarks to mentioning that, to obtain the full effect, one of the longer voyages must be selected, one which lasts about six to sixteen weeks, without including the time spent on land between the voyage out and the voyage home. The best for patients are the voyages to Australia and New Zealand around the Cape of Good Hope (not Cape Horn on account of the great cold), and that to the Cape of Good Hope itself, which in suitable cases may be combined with a stay of several months on the highlands of South Africa.[11]

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[11] The latest communication on the climate of the desert is Dr. F. M. Sandwith's Desert Climate for Lung Tuberculosis, Practitioner, June, 1898.

Of my observations on the influence of sea voyages in pulmonary tuberculosis, I will only give those which relate to the voyages just mentioned, and which lasted from six weeks to seven months. In 70 cases there were 34 showing improvement, 18 showing little change, and 18 showing deterioration. The great majority of the cases were in the first or commencement of the second stage; only 7 were in the third stage.

From what I have observed I would give it as my opinion that sea voyages can do good service in a certain number of tuberculous cases, but that in most such cases other climatic and hygienic methods of treatment exercise at least just as good an influence. If, however, persons of strong constitution, who like sea voyages, develop phthisis under the influence of overwork or mental worry, long sea voyages are to be preferred to all other methods of treatment. A decided advantage of sea voyages is that patients are much more protected from excesses than at many well-known health resorts. Permanent weakness of constitution, very decided tendency to sea-sickness, unalterable dislike of monotonous diet constitute contraindications. Some practical remarks are contained in the article "Ocean Voyages in Phthisis," by Dr. Parkes Weber, in the *Practitioner*, June, 1898, p. 662.

It would be an advantage if there were well-arranged medical ships, a kind of "sea sanatoria," both for long voyages and for short ones — for instance, in the Mediterranean and to the West Indies during winter, and in the North Sea during summer, but this will be hard to arrange without great cost to the patients. In the case of rich persons I have for many years recommended — often with very favorable result — the use of yachts for climatic and hygienic purposes, generally with a medical attendant. Sea voyages can be recommended for prophylactic use against scrofula and also against tuberculosis. Amongst sailors and seafaring persons there is less phthisis than amongst soldiers of the same age on land. Out of 18 boys of very tuberculous families whom I advised to enter the navy, only two became consumptive, whereas amongst their brothers and sisters who chose learned, mercantile, or sedentary occupations, the number of deaths from phthisis was at least three times as great.

IV. BRIEF INDICATIONS FOR THE USE OF DIFFERENT CLIMATES IN DIFFERENT CASES OF TUBERCULOSIS.

(1) It is very difficult to formulate exact rules, partly because tuberculosis occurs in such various forms and with such various complications, partly because the constitutions of the affected individuals are very different. In all our medical work we consider the constitution at the same time as the disease, and in tuberculosis we have to do this very particularly, in the apparently slight cases as well as in the severe ones. First of all, we must be clear as to whether we have to do with a strong or a weak constitution. This is often difficult to tell at first sight, because a naturally strong person may be so lowered in health — partly by the disease itself, partly by preceding unfavorable conditions — that he may seem to have a weak constitution.

In deciding this matter the family history often helps us, not only as to whether the family is free from tuberculosis or not, but still more as to whether the patient belongs to a long-lived or to a short-lived family. If he belongs to a long-lived family, we may suppose that he possesses a strong constitution, even if other members of his family have died of tuberculosis. If he belongs to a short-lived family, we generally have to deal with an originally weak constitution, even if no member of his family has died of tuberculosis. This kind of hereditary tendency — to a long or to a short life — is very important in regard to prognosis and treatment. Another hereditary tendency, which points to a considerable power of resistance, is that towards gout, which to a certain extent is antagonistic to tuberculosis.

Amongst other circumstances which can guide us in forming an estimate of the power of resistance, the personal history may be mentioned. Those persons who from youth up always feel better, are more energetic, can eat better, and put on weight in warm weather, but in cold weather become less capable of work, generally belong to the class of weak constitutions, whereas those who have always done better in the cold possess stronger constitutions. Patients who from childhood onwards have always had high fever with every slight illness, and have recovered with difficulty, and who always have moist hands, must generally be reckoned amongst the weak, erethic constitutions — a conclusion which is mostly confirmed by the color of the skin and mucous membranes, the general appearance, and the weak and irritable action of the heart. If we have come to the conclusion that the patient has a weak constitution, we must be guarded in recommending high altitudes and long sea voyages, and give the preference to warm, sunny and sheltered places, such as Beaulieu and Mentone on the Riviera, and Pau; sometimes Madeira and Teneriffe may likewise be recommended. On the other hand, in strong, somewhat torpid constitutions mountain climates are to be preferred, and occasionally also long sea voyages. In these cases one can do much by keeping them continuously in the open air, by good feeding, and by regulated exercise.

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[11] On all these points see Dr. Faber's work on the Influences of Sea Voyages on the Human Body, and its Value in the Treatment of Consumption, Practitioner, 1876, vols. xvi and xvii, and 1877, vol. xix. See also Dr. W. S. Wilson's The Ocean as a Health Resort, second edition, 1881. Some notes are likewise contained in my article Zur therapeutischen Verwerthung von Seereisen, Zeitschrift für diätische und physikalische Therapie, 1899, vol. iii, Part I.

In regard to the following indications the constitution has always to be considered:

(2) In cases with limited disease at one or both apices, without or with an only slight amount of fever, nearly all climates can be made use of, but especially high altitudes and sea voyages if the constitution is a strong one.

(3) Cases with limited local disease and high fever must be at first treated in their houses or in the neighborhood of their homes.

(4) Cases with extensive disease of one lung or of both lungs, without fever or with only slight fever, are more difficult to advise. In the majority of these cases treatment at an only moderate elevation, or at warm seaside localities, deserves the preference.

(5) In advanced disease with fever long journeys should be avoided, and, if possible, neighboring sheltered health resorts, together with careful supervision, should be recommended.

(6) In progressive tuberculosis with scattered foci in both lungs and much fever, sheltered localities near the patient's home, or the home itself, are probably the best places.

(7) In cases of chronic, slowly progressive phthisis I have seen, on the whole, better resorts from warm winter resorts, and sometimes from sea voyages.

(8) Quiescent cases with extensive damage or cicatrisation, are generally better off at only slight elevations, such as Meran, or Arco, or Montreux, or Badenweiler, or on the Riviera or in Egypt.

(9) Cases with albuminuria without fever should avoid high altitudes, and select dry places like Egypt or the Riviera.

(10) The complication of moderate diabetes does not exclude the use of high altitudes, but the latter are injurious in cases with advanced diabetes and emaciation. Similarly, high altitudes should be avoided in cases where the tuberculosis is secondary and the diabetes the primary affection.

(11) Chronic cases with much catarrh require places with as little wind as possible, such as Pau and Arcachon, and, in England, Bournemouth; but in the case of young persons places of high elevation with little wind need not be excluded, and are often even to be preferred.

(12) High altitudes are contraindicated in chronic cases with extensive emphysema; these cases require warm winter resorts, such as Madeira, the Canary Islands, Pau, or places with pine woods, like Arcachon and Bournemouth

(13) When asthma is a complication, in persons whose idiosyncrasies in regard to localities are unknown, no certainty in the choice of climates is possible; but in the majority of relatively young persons high elevations should be preferred, whilst in older persons moderately warm localities at only slight elevations should be selected, such as Grasse (near Cannes), or Montreux, or Locarno, or Meran, or places amidst pine woods (like Arcachon and Bournemouth).

(14) In all climates for the treatment selection of the dwelling house is of great importance; it should get much sun, should be sheltered from winds and free from dust, and should be built on dry ground; it should be removed from stagnant water and swamps, and from the impure air of factories and similar drawbacks.

(15) For the prevention of scrofula and tuberculosis all healthy climates can be used, as long as a good diet and plenty of time in the open air can be obtained; but high altitudes and marine climates have advantages — the former rather against pulmonary tuberculosis, the latter (including sea voyages) more against scrofula.

(16) The cure of tuberculosis during the early stages is possible in all healthy climates; some climates, however, have advantages for various cases over the other climates; for instance, notably those of high altitude. But climate by itself without careful medical supervision is generally insufficient. The patient's blind reliance on the climate often leads to errors, to aggravation of the disease, and to death. For the majority of patients, therefore, treatment in sanatoria should be preferred, but for the treatment of the poor it is a necessity. The erection of numerous sanatoria for the people is therefore a national requirement for the cure, the prevention, and extermination of tuberculosis.

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Reports of Societies.

THE INTERNATIONAL TUBERCULOSIS CONGRESS IN BERLIN.

THE ORGANIZATION OF THE CONGRESS.

The International Congress of Tuberculosis promoted by the Central German Committee for the Establishment of Sanatoria for Pulmonary Diseases was formally opened on Wednesday morning, May 24th, at 11 A. M., in the Chamber of the Reichstag, at Berlin.

The arrangements for the Congress, which was under the patronage of the German Empress, were carried out by a large committee, of which the Duke of Ratibor and Professor von Leyden were presidents, and the invitations issued by this committee met with a ready response, not only throughout the German-speaking countries but also elsewhere, so that altogether the members of the Congress numbered over 2,000 persons. Of this number one hundred and twelve were delegates from foreign countries. The United States was represented by Surgeon Boyd, United States Navy, chairman of the delegation; Dr. George T. Vaughan, of the Marine-Hospital Service; Dr. de Schweinitz, of the Biochemic Department of the Agricultural Bureau at Washington, and Dr Nuttall, formerly of the Johns Hopkins University, and since stationed at Hamburg. Drs. Boyd and Nuttall were appointed honorary presidents of the First Section. Great Britain was represented by Professor Sir Thomas Grainger Stewart (president of the British Medical Association, and representing the Senatus Academicus of the University of Edinburgh), Dr. P. H. Pye Smith (nominated by the Royal College of Physicians of London on the invitation of the Lord President of the Council). Sir William Broadbent, Bart., Sir Hermann Weber, Mr. Malcolm Morris, Mr. C. Rube, and Dr. A. P. Hellier (nominated by the Prince of Wales, president of the National Association for the Prevention of Consumption), Sir

Herbert Maxwell, Bart., M.P., F.R.S., and Bailie Pollard (representing the Corporation of Edinburgh).

Austro-Hungary sent a large number of official representatives, including Professors Weichselbaum and Paltauf, of Vienna, Prebram and v. Jaksch, of Prag, and Koráuyi, of Buda-Pesth. The French official delegates included Professors Brouardel, Nocard, Proust, Grancher, Cornil, Metschnikoff, and Dupuy, and Dr. A. J. Martin, Inspector-General of Sanitation in Paris. Italy was represented by Professor Simonetta (Siena) and Maragliano (Genoa). The Russian delegation was headed by Professor Botkin and included one lady, "Frau Dr. Pawlowskaja," of St. Petersburg. Holland sent three delegates, Belgium eight, Japan the same number, Persia three, including Dr. Müller, honorary physician to the Shah, Sweden four, headed by Dr. von Printzköld, president of the Swedish commission on sanatoria for consumption; Norway four, Switzerland five, headed by Dr. Schmid, director of the Swiss Health Department, and including Professor Sosser, of Geneva; Servia sent two official delegates, while the Argentine Republic, Bulgaria, Denmark, Guatemala, Mexico, Monaco, Montenegro, Nicaragua, Portugal and Spain were each represented by one official delegate.

On May 23d the Emperor received the Duke of Ratibor, president of the Congress, who reported the arrangements made for the reception of the Congress. The Emperor showed a great interest in the Congress, and expressed a desire that the foreign delegates should be presented to him, and it was arranged that this ceremony should take place on Sunday, May 28th. Prince Hohenlohe, the Chancellor, also displayed a great interest in the Congress, and invited the members to a garden party on Thursday, May 25th.

The press gave the Congress an enthusiastic welcome, even the socialist organs seeing in it the embodiment of united labor in behalf of the poorer classes. The simultaneous sitting of this Congress and the Peace Congress, at the Hague, gave rise to comparisons and to reflections showing that both are regarded as indications of the progress of the idea of fellowship and solidarity among the civilized nations of the earth.

LADIES' COMMITTEE.

A committee, under the presidency of Princess Elisabeth von Hohenlohe, made arrangements for the benefit of ladies accompanying members of the Congress. These arrangements included visits to various schools, museums, nursing institutions, and model dairies, as well as numerous social entertainments and a visit to Potsdam and its palaces.

THE PLACE OF MEETING.

The Bureau of the Congress was situated in the magnificent pile of Parliament Buildings. In the Wandelhalle, or lobby, the German army surgeons in their bright blue uniforms, made out tickets for the reception, and distributed the first batch of Congress literature in the shape of pamphlets, views of sanatoria, lists of members, etc. At the central bureau a military officer presided, and the entire administration of the Congress affairs was characteristic alike of the widespread German military system, and the Imperial auspices under which the Congress was conducted.

That the Parliament Buildings should have been given up almost entirely for the purposes of the Congress was both an honor to science and a worthy expression of the fact that to science — and especially to that portion of it which deals with the relief of suffering humanity — Germany is prepared to accord an honorable, full, and cordial support.

THE FIRST RECEPTION.

The reception announced on the programme to take place in the Opera House on Tuesday evening was held at the Parliament House. It was of an unofficial character, but the Duke of Ratibor and Professor von Leyden received the visitors in the Rotunda, which is the central portion of the Wandelhalle, and many other distinguished men were present. Among these were Baron von Knescheck representing the Empress, Count Schœrnburg representing the Chancellor Prince Hohenlohe, Director Köhler, General Artzt Grasnick, Professors Heubner and Fränkel, Drs. Dettweiler and Hess, of Falkenstein, Sir Herbert Maxwell, Mr. Malcolm Morris, Mr. C. Rube, and Sir T. Grainger Stewart and Surgeon Boyd. Many ladies graced the function with their presence, and the various magnificent rooms of the Reichstagshaus were brilliantly lighted and thrown open to the visitors. Music was provided by an excellent military band. The walls of the Rotunda were covered with plans and diagrams of several of the more celebrated sanatoria. Refreshments — provided by the State — were liberally served in the dining-rooms of the Reichstag.

Among the plans of private sanatoria were displayed those of Falkenstein in the Taunus, of the Driver's Institution at Reeboldsgrün in Saxony, of that founded by Dr. Brehmer at Görbersdorf in Silesia, of the sanatoria at St. Blasien and Bad Rehburg, and of Dr. Weicker's Institution at Görbersdorf; numerous public sanatoria supported by benevolent societies, invalid and old-age institutions and communal organizations. The plans illustrated the various systems which might be followed in the construction of sanatoria for the working classes. The institution of the Frankfort Convalescent Society at Rupertshain, built on the model of Dettweiler's Sanatorium, was typical of many, while that of the Red Cross at Grabowsee showed a mixed system in which light transportable single-roomed barracks designed for use in war were employed in combination with permanent pavilions. The people's institutions erected by Herr Georgi at Königreich in Saxony, at Albertsberg near Auerbach, and by the institution founded by him at Carolastein were shown. Plans were also shown of the lung sanatorium of the Berlin-Brandenburg Sanatorium Association, and the Samuel Bleichröder foundation at Kirchenforst. The institutions founded by the city of Berlin at Malchen and Blankenfelde also were illustrated. The People's Sanatorium Society of Munich showed the plans of a sanatorium about to be built at Krailing, near Planegg.

WEDNESDAY'S PROCEEDINGS.

[*Berlin, May* 24. *By Telegraph.*]

The Congress was opened May 24, in the Chamber of the Reichstag. The Empress and suite entered a few minutes after 11, and were received in silence by the whole company standing. The Chamber was filled to its utmost capacity, and fully 1,500 members and delegates were present.

COUNT POSADOWSKY, Minister of the Interior, made an impressive speech, remarking that the presence of the Empress was a guarantee of success.

THE DUKE OF RATIBOR welcomed the visitors.

The Burgomaster of Berlin then stated that inasmuch as Berlin had been taking steps against the spread of tuberculosis for years, the Congress was one of special interest to the city. He hoped the foreign delegates would take away with them pleasant recollections of the city and its people.

Professor Waldeyer, rector of the Berlin University, said practical measures had been rendered possible by the laborious scientific researches of Pasteur and of Koch.

Professor Brouardel, of Paris, spoke in French. He deplored the death of Pasteur, and congratulated Germany on having her best men still living.

Sir T. Grainger Stewart, who spoke in English, referred to the great part taken by the Prince of Wales in the prevention of tuberculosis. Discussing the open-air treatment of phthisis, he said that it was now found that cases could be treated satisfactorily in England, in spite of rain and wet and east winds.

Representatives of the United States (Surgeon Boyd), Italy, Austro-Hungary and Russia also spoke; after which the secretary of the Congress stated that over 2,000 members had been enrolled.

Professor von Leyden gave a brief address, and the Duke of Ratibor thanked Her Imperial Majesty for her presence, whereupon the company rose and cheered.

At the conclusion of the ceremony a resolution was carried to send a telegram of congratulations to Queen Victoria on her eightieth birthday.

The arrangements for the convenience of delegates and members were excellent. On Wednesday evening a brilliant reception was given in the Town Hall by the Burgomaster of Berlin.

THE DISSEMINATION OF TUBERCULOSIS.

The first subject on the programme was introduced by Dr. Köhler, the director of the Imperial Health Office in Berlin, who gave statistics as to the prevalence of the disease and the mortality which it produced in Europe. England, Belgium, the Scandinavian countries, and Italy showed the lowest mortality from tuberculosis, and Russia and Austria the highest. Naples, Buenos Ayres and London had the lowest mortality from consumption of the large civilized cities of the world, Moscow, St. Petersburg, Vienna and Buda-Pesth, the highest. While there was no evidence that elevation above sea level had any effect upon the incidence of the disease, it was more prevalent in towns and industrial districts than in country districts. Finally, he pointed out that tuberculosis caused a larger number of deaths between the ages of twenty and thirty than any other disease. Dr. Krieger, of Strassburg, read a paper on the relations between the general condition of life and the spread of tuberculosis; Dr. Gebhardt, of Lübeck, on the prevalence of the diseases among the industrial population under the compulsory insurance scheme in force in Germany; Dr. Schjerning, the chief medical officer of the German War Office, on tuberculosis in the army; and Professor Bollinger, of Munich, on the risk of infection through domestic animals, especially by the use of unsterilized milk and butter.

THE NURSING EXHIBITION.

On Saturday, May 20th, the Sick-Nursing Exhibition (*Ausstellung für Krankenpflege*) was opened with elaborate ceremony. The German Empress, unfortunately prevented from appearing by indisposition, was represented by one of her Court officials. Dr. Bosse, the Cultus Minister; Herr von Gossler, the War Minister, with several under-secretaries of State and ministerial *Geheimräthe* represented the Prussian Government. The head-mayor, Dr. Kirschner, magistrates, and town councillors were delegated by the municipality of Berlin; the Princess Elisabeth Hohenlohe sat at the head of the Ladies' Committee, and many distinguished medical men and several general army surgeons were present.

A hymn having been first sung by a special choir, Professor von Leyden (president of the Organizing Committee) addressed the assembly on the art of sick-nursing, which he said was in our day recognized as a most important factor in therapeutics. He sketched its history, and dwelt on the progress achieved within the last ten years. He explained the arrangement of the exhibition, a large portion of which was devoted — in view of the Tuberculosis Congress — to the care of consumptive patients.

General Army Surgeon Dr. Schjerning spoke next, as president of the "Jury," and after him the chief mayor, Dr. Kirschner, as the representative of the city of Berlin. He said that the Berlin municipality was conscious of its great responsibilities as regards the care of the sick; that it disposed of no fewer than 9,000 beds, of which nearly all were constantly occupied; that a new hospital, a new lunatic asylum, a new lung sanatorium, and enlargement of existing buildings were either in course of erection or planned.

Dr. Bosse then, in the name of the committee, declared the exhibition open, adding the hope that part of it might remain as the nucleus of a permanent museum for sick-nursing apparatus.

Of the exhibition itself it is not too much to say that (thanks to the strict selection exercised by the committee or "jury") there was hardly an uninteresting exhibit. Sensational novelties of course are not to be looked for, the object of the exhibition being chiefly to show the general public what sick nursing has achieved in our day, the important position it occupies in medicine, and the stake held in it by trade and industry. Any one experienced in such things can imagine the array of beds of this system and of that — the fully-equipped ambulance tents, the tropical hospitals, the "Liegehallen" furnished with every kind of *chaise-longue*, the model kitchens, the rational clothing, the hygienic washing-stands and water-closets, the food preparations, the baths, the inhalers, the spittoons, the ventilators, the disinfecting apparatus, etc., with which the large and the smaller halls of the "Philharmonie" building, its foyer, broad corridors, and court-yard were filled. All was well arranged; there was no crowding, and every exhibit could be seen and examined without discomfort.

A great share in the credit of this successful arrangement must be given to the indefatigable secretary of the exhibition, Dr. Martin Mendelsohn, who has long been devoted to the cause of sick nursing, and on whom the title of "Professor" was bestowed by the Emperor through Dr. Bosse before the opening of the exhibition.

Plague at Alexandria. — Plague has appeared at Alexandria, in Egypt, and fourteen cases with two deaths have been reported.

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THE NEW CURRICULUM AT THE HARVARD MEDICAL SCHOOL.

Beginning with the academic year 1899–1900, it is proposed to make somewhat radical changes in the course of study of the first two years at the Harvard Medical School. The essential feature of the change may be best described by the word "concentration." Hitherto the fundamental medical branches have been taught side by side; for example, the student has studied anatomy and physiology during the entire first year of his course, without regard to their logical relationship to each other, so far as precedence in point of time is concerned. By this method it was often necessary to teach the physiological action of certain organs before their anatomical structure was properly understood; evidently a wasteful process. The same defect applies to the teaching of other branches, though in less degree.

By the new plan it is hoped these defects may be obviated. Instead of several courses extending over considerable periods of time, the students will now be required to devote themselves to one main subject to the exclusion of others, for a much shorter period. The expectation is that this will conduce to a more logical arrangement of the various fundamental subjects, and also to greater thoroughness in their study, with a decided economy of time.

The outline of the changes more in detail is, in general, as follows:

The first half of the first year has hitherto embraced the study of anatomy, physiology, physiological chemistry, and histology, on a scheme of lectures and laboratory hours much like that pursued in the college proper. By the new plan, all the mornings of October, November, and December, and the mornings and afternoons of January will be devoted to anatomy, the allied branches of which, histology and embryology, will be taken up in the afternoons of the first three months. During the second half-year, which until now included anatomy, physiology, physiological chemistry, bacteriology and embryology, the student will hereafter study physiology for the mornings of February, March, April and all day in May, with physiological chemistry on the afternoons up to the first of May.

The changes in the second year's work are of even more importance. Full courses in pathology, clinical chemistry, second-year anatomy, and therapeutics, together with half-courses (without examinations) in auscultation and percussion, theory and practice, clinical medicine, bandaging and surgical pathology, have heretofore comprised the second year's course. In place of these, which run throughout the year, the first half-year's work will be on pathology during the mornings of October and November, and all day in December. For the afternoons in October and November there will be a course in bacteriology. The work for January will comprise a number of optional courses in pathology. During the last half of this second year, the student will study a number of elementary subjects introductory to the clinical work of the third and fourth years. These subjects are auscultation, clinical chemistry, theory and practice, therapeutics, surgical pathology, bandaging and clinical medicine. They will occupy twenty-six hours and a half a week.

Examinations will probably be held twice a year, at the completion of each course, though this, we understand, is not as yet definitely decided. Should the general plan outlined above prove successful, it is probable modifications will be made in the clinical courses of the last two years, designed to carry out further the plan of concentration. It is evident, however, that its more important application must remain in the earlier more theoretical years of study. Harvard is not absolutely a pioneer in this general method as applied to medical education; it has already been adopted to a certain extent at Johns Hopkins University, and, so far, with success.

To the conservative educator the concentration system seems a radical and perhaps dangerous reform. He argues that the old method has the sanction of experience, and that under its teaching admirable results have been attained. He furthermore maintains that the concentration of attention on one subject for several months is more wearing and less conducive to thoroughness than a division of mental labor, and that, on the whole, the student will see the bearing of the several subjects better if he studies them side by side, rather than in the disjointed manner suggested by the new system.

On the other hand, the advocates of the change urge that better results are always obtained by concentration; that division of attention scatters the energies over so broad a field that all branches suffer. No doubt this is, in great measure, a matter of personal idiosyncrasy on the student's part. The majority must always be considered, and experience extended over a number of years can alone decide the matter, so far as this part of the problem is concerned. More important arguments, for the present, are the saving of time and the better gradation of studies by the new system. It has been calculated that many more hours of actual instruction in each branch will be gained by concentration, owing to lessened demands on the student's time by other interests. With the great increase in subject-matter and the growing inadequacy of even a four-year course, it is evident that this is an advantage which cannot be gainsaid. A better gradation of studies is also to be borne in mind. By the new scheme, the student will have studied both gross and microscopic anatomy before he undertakes physiology, and will have completed his work in anatomy before he undertakes pathological anatomy or pathology. He will, for example, know the principles of structure of the nervous system before he is called upon to study its functions, evidently a distinct advantage not only to the student but also to the instructor in physiology.

It is not our purpose, on this occasion, to express a definite opinion as to the wisdom of the proposed change. That it has in it much of promise is undeniable, and we shall look forward with the greatest interest to its practical working out, for experience, in such a matter, must be the final arbiter.

MILITARY HYGIENE IN THE MILITARY ESTABLISHMENT.

At the last meeting of the Association of American Physicians and Surgeons, Dr. V. C. Vaughan, professor of Hygiene at the University of Michigan, and major and brigade-surgeon, United States Volunteers, a member of the board which for the past eight months has been engaged in the investigation of the epidemics of typhoid fever occurring in various military camps, stated that one of the main causes of these disastrous outbreaks was to be found in the widespread disregard, by line officers, of the principles of common sanitation and ordinary cleanliness.

In his paper Dr. Vaughan graphically portrayed the shocking conditions personally observed by his board in its inspection of the camps of certain volunteer organizations — camps through the purlieus of which it was scarcely possible to walk without smearing the feet with human excrement; camps where latrines were tardily provided, and, if provided, in which their use was not enforced nor the maintenance of their cleanliness and sanitary condition apparently attempted. In many instances the company sink and kitchen were near neighbors, while kitchen refuse was habitually thrown on the surface of the ground to fester in the sun and furnish additional pabulum for the swarming flies.

The official literature of the Medical Department of the Army is rich in sanitary provisions, and, as sanitary inspectors, the medical officers appear to have fully and faithfully performed their duty. Unfortunately, however, the office of sanitary inspector carries with it no executive power, and in all matters pertaining to camp hygiene the official functions of the medical officer are purely advisory. He may recommend, but he has no power to enforce the changes which his special training teaches him are of vital importance to the health, welfare and efficiency of the military community.

With the rendering of his report and recommendations to higher authority his responsibility ceases, the matter comes under the discretion of line officers, and upon the necessarily imperfect knowledge of the latter with regard to sanitary matters the execution of the recommendations of the medical officer depends.

Whether the action of the commanding officer upon the sanitary suggestions submitted is or is not favorable depends largely upon his personal equation and upon the relations existing between himself and the surgeon. An egotistical commanding officer is prone to regard any recommendations of the sanitary inspector as unwarranted criticism of his methods of administration, in spite of the fact that army regulations require such action by the latter. Should unfriendly feeling exist between the two a commanding officer of petty nature may fail to favorably consider the recommendations of his surgeon, or so modify requirements as to destroy their practical utility. Against such action the medical officer has no redress. On the other hand, should cordial personal relations exist between the two, the sanitary recommendations are usually approved and executed, particularly if the commanding officer has had long military experience and thus gained a practical knowledge of the value of sanitation, even if he is uninformed as to the technique of the methods bringing about the desired result.

Volunteer troops are necessarily largely officered by men of little or no previous military experience, many of them with no previous knowledge of camp life, who are apt to consider that labor as useless which does not yield prompt and eminently positive results. With them, new to places and duties, matters of hygiene are brushed aside in favor of purely military instruction, and there is always an unwillingness on their part to require of their men, as yet somewhat raw and undisciplined, to perform the arduous and often disagreeable labors required by camp sanitation.

Among regular and volunteer officers the importance of hygiene in its relation to the efficiency of troops is dwarfed by their scanty knowledge of the subject — lack of co-operation in the efforts of the medical officer being largely due to the indifference born of ignorance among the only individuals capable of executing sanitary reforms.

The remedy for this state of things is twofold. First, medical inspectors might be charged with absolute responsibility for all matters of a sanitary nature and invested with such authority and powers as would enable them to carry out their plans without reference to higher and unprofessional authority. This condition of things, though eminently desirable from the standpoint of the military sanitarian, is totally at variance with the spirit of the military establishment at the present time, since it would endow the subordinate with powers which would in many instances remove his actions from the control of his commanding officer, and it is scarcely probable that any such anomalous condition would receive official sanction.

The second remedy is that of education of the line officer in military hygiene, and should be officially prescribed. Such training need not touch upon the minor points of the subject, but the line officer should be fully aware of the swift and certain impairment of military efficiency, often neutralizing the tactical education of their troops, which will inevitably follow errors in camp sanitation, and they should be shown how such sins of omission and commission may either be avoided or their effects mitigated.

For the officer of the National Guard the study of military hygiene should form an important part of his technical training, and officers of volunteers, prior to their appointment, should be required to demonstrate their fitness for the position sought by an examination in this and other subjects. For the instruction of officers of the line in the regular army military hygiene should be given a prominent place in the West Point curriculum. In 1893 an attempt by the surgeon-general to effect this change received the approval of the Secretary of War, but was defeated by the action of several members of the faculty of the Military Academy, who, offended that they had not been consulted in the matter, personally opposed the bill on the official grounds that the course at the Academy already severely taxed the energies of the cadets and could not be increased without detriment to the existing curriculum.

In view of the experience of last summer, as revealed by Dr. Vaughan, such an argument as the above should unhesitatingly be swept aside. Ample experience has shown that military hygiene and sanitation is at the foundation of military efficiency, and the time has come when the fact should be officially recognized by Congress in the establishment of a chair of military hygiene at West Point.

◆

MEDICAL NOTES.

The American Surgical Association. — At the recent meeting of the Association in Chicago, the following officers were elected for the ensuing year: President, Dr. Robert F. Weir, New York City; First Vice-President, Dr. Charles B. Nancrede, Ann Arbor, Michigan; Second Vice-President, Dr. Edmond Souchon, New Orleans, La.; Secretary, Dr. Herbert L. Burrell, Boston; Treasurer, Dr. George R. Fowler, Brooklyn, N. Y.; Recorder, Dr. De Forest Willard, Philadelphia; Member of the Council, Dr. W. W. Keen, Philadelphia.

Yellow Fever in New Orleans. — According to the reports in the daily press, the Louisiana State Board of Health gave notice on May 31st to the several other boards of health, in accordance with an agreement made this spring as to yellow fever cases, that an autopsy on Sunday showed that Miss Johanna Grillo had died of yellow fever. This case was regarded as suspicious, but not until after the autopsy could the character of the disease be determined with certainty. The Board of Health declares that there is no other case in New Orleans in the slightest degree suspicious, and says there should be no fear of any prevalence of the fever.

Christian Scientists and Diphtheria. — The following statement is attributed to the *Chicago Tribune:* "As the result of the fact that two cases of death from diphtheria in which the patients had been treated by Christian Science methods only have come within the last few days to the notice of the coroner's office, the health department has decided, it is stated, to take steps to compel those having charge of cases of contagious disease to provide medical attendance for them." It would seem to be necessary to go further than that in order to protect the community; as such action would place the burden of making the diagnosis of contagious diseases upon the Christian Scientists or the patient's family.

The Efficient Work of the Army Medical Department in the Philippines. — In an interesting report from Major Henry Hoyt, surgeon United States Volunteers, covering the period February 4th to 17th, the work in the field of the Medical Department in the Philippines is warmly commended. In the time covered by his report, Major Hoyt states that the casualty list in his division was 32 killed and 144 wounded. Of those wounded, he says that although many were severely injured in their limbs, not a single amputation was necessary. This he attributes to the efficiency of the "first-aid" packet, to the knowledge possessed by the men themselves in "first aid," and to the prompt service rendered in the field dressing stations. It was noted that of about 40 wounded Filipinos brought to his division hospital during the same period, the wounds were in nearly every case infected. Major Hoyt says that proof of the dangers which the medical force shares with the so-called combatants is shown by the case of Private John Gibbons, of the Hospital Corps, who was killed while carrying a wounded officer to the rear. In every instance the field dressing stations were pushed forward in proportion to the advance of the firing line and the Ambulance Corps and Hospital Corps men generally rendered prompt and efficient service.

Heroism of the Army Medical Corps. — Reports from Manila give accounts of the courage displayed on all sides by the medical officers and Hospital Corps men during the recent fighting with the Filipinos. Major G. F. Shiels, brigade surgeon, is described as having of his own accord remained at the front during action, giving aid to the wounded insurgents and later using a gun to good purpose himself during further fighting. The report states that he "conducted himself in a courageous and soldierly manner throughout both engagements." Captain Black, of the Ambulance Corps, recommends for consideration on account of courage in action, Privates Coleman, Dallery and Carter, Hospital Corps. These soldiers, with a few men of the Nebraska regiment, while conveying wounded to the rear, were attacked by a largely superior force of Filipinos dressed as *amigos*, or friendly natives, but, although at close range, they continued their duty and brought off the wounded under a heavy fire; to do which they had to cross an open field two hundred and fifty yards wide before cover could be reached.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, June 7, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 42, scarlet fever 32, measles 109, typhoid fever 9, small-pox 2.

An Appropriation for the Carney Hospital. — The Massachusetts Legislature has passed a bill appropriating $10,000 for the Carney Hospital.

More than a Centenarian. — Mrs. Ann Kendall, a colored woman who died in Boston June 1st, was reported to be one hundred and six years of age. She was born in Kingston, Jamaica, and is survived by a daughter seventy-five years of age.

The Floating Hospital. — The first trip of the Floating Hospital will be made on July 5th. The boat leaves the south side of Commercial Wharf at 9 a. m. The hospital has been equipped with an apparatus for drying and cooling the air of certain rooms where sick cases are cared for.

General Vaccination Recommended.— In view of the recent outbreak of small-pox in Boston, Swampscott, Salem and other Massachusetts cities, the Massachusetts State Board of Health recommends general vaccination as a protection. The United States Marine-Hospital Service has prepared a special report in which it states that there have been 7,418 cases of small-pox reported in this country since last December; of this number 355 were fatal. The free intercourse between cities and States leads to a possible danger which is not generally taken into account. Several cases have been reported recently in Maine, while in Ohio more than a thousand cases have been reported during the past year, and nearly four hundred since January 1st of this year.

Small-Pox in Swampscott and South Boston. — William A. Rust, the Lynn shoe worker who was reported sick with small-pox in Swampscott two weeks ago, died last week. An inmate of the same house with Rust, who was in his company when the disease first appeared, is now ill with varioloid. Two new cases of small-pox have been discovered in South Boston. Its origin is traced to a New England town.

The Maine Medical Association. — The forty-seventh annual meeting of this Association will be held at Bangor, on June 7th, 8th, and 9th. A full programme is offered. The annual oration will be delivered by Dr. Maurice H. Richardson, of Boston, on Thursday evening, June 8th, the subject being "Acute Abdominal Symptoms Requiring Immediate Surgical Intervention." The president of the Association is Dr. C. O. Hunt, of Portland, and the secretaries are Drs. Charles D. Smith, of Portland, and Hannibal Hamlin, of Orono.

NEW YORK.

The Outdoor Recreation League.—Last season the Outdoor Recreation League established the first free outdoor gymnasium in the city, known as the Hudson Bank Gymnasium and Playground, on the Hudson River, at 53d Street. On June 3d the second institution of the kind was opened by the League in the new Seward Park, which is situated down town in the crowded tenement district east of the Bowery. The area occupied by it is two acres in extent, one-half of which is devoted to the gymnasium proper, which includes a cinder track 750 feet in circumference, and the other half to a children's playground, in a portion of which free kindergartens, with a corps of eight teachers, will be conducted in large tents.

Opening of a New Hospital.—On Memorial Day the Free Hospital for the Destitute Sick, the handsome and commodious new addition to St. Vincent's Hospital, was formally opened. Archbishop Corrigan blessed the building, and addresses were made by Commissioner of Charities John W. Keller, John D. Crimmins, one of the trustees of the hospital, and Dr. Constantine J. MacGuire, of the staff of attending physicians. The building is a fire-proof brick structure, seven stories in height, with steel framework and flooring beams. It contains six wards for men, three for women, two for children, and one for accident cases, and a well-appointed operating-room. On the first floor there is a chapel with beautiful memorial windows, and on the top floor a spacious solarium; while the interior court-yard is made attractive by trees, grass-plats and a large fountain. With this additional building St. Vincent becomes one of the largest and finest hospitals in the city, and it is stated that it can now accommodate eleven hundred patients.

The Alumni of New York University. — At a meeting of the Alumni of the University of the City of New York, held June 3d, Dr. William J. Greanielle, of the class of 1890, was elected secretary of the association.

METEOROLOGICAL RECORD

For the week ending May 27th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...21	29.92	48	52	45	95	91	93	N.	N.	20	8	R.	R.	.11
M..22	30.17	48	52	45	69	72	70	N.E.	S.	8	7	C.	O.	
T...23	30.25	53	60	46	68	74	71	N.	E.	5	7	O.	O.	
W..24	30.28	58	69	48	64	41	52	S.W.	S.W.	5	14	C.	C.	
T...25	30.21	63	75	51	61	54	58	W.	S.W.	5	13	C.	C.	
F...26	30.12	66	81	51	63	58	60	W.	S.W.	12	16	C.	C.	
S...27	29.95	68	80	56	47	62	54	S.W.	S.W.	15	18	O.	O.	
☞	70.13		67	49			65							.11

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, May 27, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup
New York . .	3,438,899	1151	360	9.36	15.75	1.00	.36	3.15
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	378	96	12.22	11.18	1.30	4.42	4.42
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	203	58	7.35	11.76	.98	.49	2.45
Baltimore . .	506,389	187	49	3.18	6.89	1.06	.53	.53
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	96	31	20.80	9.36	13.52	62.4	—
Washington .	277,000	89	21	16.80	10.08	1.12	2.24	2.24
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	45	9	4.44	11.11	—	—	2.22
Nashville . .	87,754	31	10	9.69	6.46	6.46	—	—
Charleston . .	65,165	45	22	20.00	—	17.77	2.22	—
Worcester . .	108,240	26	11	7.70	15.40	—	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	19	8	15.18	—	—	—	5.26
Lowell . . .	88,641	39	10	7.12	15.36	—	—	—
Lynn	66,703	13	2	15.38	15.38	—	—	—
New Bedford .	66,340	23	9	8.70	13.05	4.35	—	—
Somerville . .	61,101	18	3	16.66	16.66	5.55	5.55	—
Lawrence . .	57,263	20	9	—	—	—	—	—
Springfield . .	56,501	9	1	—	11.11	—	—	—
Holyoke . . .	43,424	11	3	9.09	—	—	—	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem	36,883	11	3	—	—	—	—	—
Malden . . .	34,613	8	—	—	25.00	—	—	—
Chelsea . . .	33,468	6	2	16.66	—	—	—	16.66
Haverhill . .	32,022	19	3	15.78	15.78	—	—	5.26
Gloucester . .	30,589	5	1	40.00	—	—	—	—
Newton . . .	29,716	4	—	—	—	—	—	—
Fitchburg . .	29,438	4	1	25.00	25.00	—	—	—
Taunton . . .	28,167	11	1	—	—	—	—	—
Everett . . .	25,338	3	1	33.33	—	—	—	—
Quincy . . .	23,549	9	2	–	11.11	—	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	6	1	—	16.66	—	—	—
North Adams .	20,971	3	—	—	—	—	—	—
Chicopee . .	17,842	9	2	—	22.22	—	—	—
Medford . . .	16,511	6	1	—	16.66	—	—	—
Newburyport .	14,915	6	4	33.33	—	—	—	—
Melrose . . .	14,032	5	—	—	20.00	—	—	—

Deaths reported 2,530; under five years of age 763; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 244, consumption 322, acute lung diseases 313, diphtheria and croup 64, diarrheal diseases 46, typhoid fever 33, measles 26, scarlet fever 25, cerebro-spinal meningitis 22, whooping-cough 13, erysipelas 12, small-pox 3.

From measles New York 16, Washington 3, Lowell, Lynn and Newburyport 2 each, Pittsburg 1. From scarlet fever New York 17, Philadelphia 4, Boston 2, Pittsburg and Washington 1 each. From cerebro-spinal meningitis New York 7, Washington 6, Boston 3, Worcester and Gloucester 2 each, Everett and Amesbury 1 each. From whooping-cough Philadelphia 4, Cambridge and Haverhill 2 each, New York, Boston, Providence, Nashville and Somerville 1 each. From erysipelas New York 10, Boston and Holyoke 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending May 20th, the death-rate was 17.6. Deaths reported 3,842; acute diseases of the respiratory organs (London) 257, measles 109, whooping-cough 95, diphtheria 69, diarrhea 31, scarlet fever 29, fever 21.

The death-rates ranged from 9.8 in Croydon to 24.6 in Manchester; Birmingham 21.3, Bradford 18.8, Gateshead 14.2, Huddersfield 13.6, Leeds 16.6, Liverpool 23.9, London 16.3, Nottingham 16.1, Salford 21.3, Sheffield 16.3, West Ham 14.4.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING JUNE 1, 1899.

Bailhache, Preston, H., surgeon. Detailed to represent the Service at the meeting of the American Medical Association, Columbus, O., June 6–9, 1899. May 22, 1899.

Banks, C. E., surgeon. To proceed to New York, N. Y., for special temporary duty. May 22, 1899.

Wertenbaker, C. P., passed assistant surgeon. To proceed to Savannah, Ga., for special temporary duty. May 23, 1899.

Tabb, S. R., assistant surgeon. To proceed to Wilmington, N. C., for special temporary duty. May 23, 1899.

Anderson, J. F., assistant surgeon. Department letter of April 29, 1899, granting Assistant Surgeon Anderson thirty days' extension of sick leave from May 1st, amended so that said extension shall be for fourteen days from May 1st. May 22, 1899.

Corput, G. M., assistant surgeon. To report at Washington, D. C., for special temporary duty. May 25, 1899.

Gahn, Henry, hospital steward and chemist. To proceed to New York, N. Y., for special temporary duty. May 25, 1899.

Scott, E. B., hospital steward. To proceed to Wilmington, N. C., for special temporary duty. May 25, 1899.

APPOINTMENTS.

Dunlop Moore, of Pennsylvania, and **Halstead A. Stansfield**, of California, commissioned as assistant surgeons, May 31, 1899.

James C. Ballard, of Mississippi, to be acting assistant surgeon, for duty at Natchez, Miss. May 23, 1899.

(Continued in next issue.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 3, 1899.

C. G. Herndon, surgeon, ordered to Cleveland, O., temporarily, for recruiting duty at the branch hydrographic office.

F. Rogers, medical inspector, promoted to medical inspector.

SOCIETY NOTICE.

Massachusetts Medico-Legal Society.—The annual meeting will be held at the Medical Library, 19 Boylston Place, Boston, on Tuesday, June 13th, at 12 m.

The following papers will be read:

Dr. F. W. Draper: "A Case of Criminal Abortion with a 'Dying Declaration.'"

Dr. H. G. Blake: "A Case of Suspected Ptomaine Poisoning."

Dr. F. H. Baker: "Medico-Legal Autopsies."

Members of the medical profession are cordially invited.

Julian A. Mead, M.D., *Secretary.*

RECENT DEATHS.

William M. Burchard, M.D., died at his home in Montville, Conn., June 1st, aged fifty-four. He was a member of the Connecticut Medical Society and the New London Medical Society, and during President Harrison's Administration was a member of the New London Board of Medical Examiners.

Henry E. Crampton, M.D., treasurer of the New York Academy of Medicine, and for many years a prominent practitioner in New York, died at the residence of a relative in Glen Ridge, N. J., on May 28th. He was born April 10, 1837, in New York City and was graduated from the old New York Medical College in 1857. At the time of his death he was one of the vice-presidents of the Association for Improving the Condition of the Poor, in whose philanthropic work, especially as regards its medical and sanitary aspects, he had always been deeply interested.

John Ross Munro, M.D., of Highland Falls, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1868, died on May 27th. He was a native of Glasgow, Scotland.

Mr. H. B. Hewetson, an eminent English oculist, has died at the age of forty-nine years. He was the author of numerous scientific papers, being a member of the Zoölogical, Linnæan and Geographical Societies and a member of the Ornithologists' Union.

Theodor von Hessling, M.D., formerly professor of anatomy in the University of Munich, has died at the age of eighty-three years.

BOOKS AND PAMPHLETS RECEIVED.

A Lecture on the Causes and Treatment of Hare-lip, Delivered in the Post-Graduate Course, June, 1898. Intestinal Obstruction due to Bands, the Result of a Former Appendectomy and Complicated by a Volvulus of the Mesentery. By Francis J. Shepherd, M.D., C.M., Montreal. Reprints. 1899.

Materia Medica, Pharmacy, Pharmacology and Therapeutics. By W. Hale White, M.D., F.R.C.P., Physician to and Lecturer on Pharmacology and Therapeutics at Guy's Hospital, London; Examiner in Materia Medica to the University of London, and late Examiner in Materia Medica to the Conjoint Board of England; Author of a "Text-Book of General Therapeutics." Edited by Reynold W. Wilcox, M.A., M.D., LL.D., Professor of Medicine and Therapeutics at the New York Post-Graduate Medical School and Attending Physician to the Post-Graduate Hospital; Visiting Physician to St. Mark's Hospital; Fellow of the American and of the New York Academy of Medicine, etc. Fourth American edition, thoroughly revised. Philadelphia: P. Blakiston, Son & Co. 1898.

Addresses.

A CENTURY OF MEDICINE IN AMERICA.[1]

BY J. C. WILSON, M.D., PHILADELPHIA.

Mr. President, Members and Delegates, Honored Guests: — The duty of the hour is always the logical outcome of other duties previously done. This distinguished assembly, in whose presence, by your courtesy, I have the honor to stand, is but one of a long series of meetings of those who hold the idea higher than the act, the profession nobler than the art. The fables of the birth of Aphrodite and of Pallas Athene are deeper allegories that the school-boy suspects. To the poet the combing of a wave, and lo, upon the foam, the embodiment of all that is beautiful in nature; a flashing bolt, and at Jove's brow the incarnation of all that is pure and wise in spirit. But to the student there is no such instantaneous achievement. Beauty and wisdom do not take the world by storm. The forces of nature are at work through all time till Venus comes and eons pass away in dubious thought before Minerva stands forth. Progress is from point to point, by slow degrees and often with painful retracing of disappointed steps. Life is a relay race; those who are weary dropping out to give place to newcomers. When some goal is won, the last runners are too apt to think the victory theirs. No man's success is all his own. We are what those who have gone before have made us and the splendor of our time is the long result of theirs.

The most wonderful century of the world's history draws to a close. Not in all time has there been such a period. The diffusion of knowledge, man's power over nature, and organized human energy have yielded results that mark the latest as the most brilliant epoch of our civilization. But the advance has been by no means an even one. In those things that lend themselves most readily to the inductive method of investigation, to observation and experiment the progress has been greatest. Hence an era of brilliant material success. In things more elusive the doubts, uncertainties and perplexities of the past remain to harass us. Yet the great growth in knowledge of material things begets in the human heart a longing for a deeper knowledge in loftier matters. The inductive method is of ever wider application. May we not hope that as this century has been magnificent in physical advancement, the century that is to come may be glorious in intellectual and moral development.

Has medicine, that branch of human endeavor in which we are especially interested, kept progress with the times? Has the century done for it what it has done for other things? The question is not hard to answer. For medicine the changes of this year-hundred have been the awakening from the sleep of ages. The work of the early anatomists, the great discovery of Harvey, Auenbrugger's laborious revelation, Jenner's patient investigation, were stirrings in the slumber.

The dawn of the century was auspicious. Vaccination was widely practised and its value everywhere recognized. Corvisart rescued the "Inventum Novum" from oblivion. Lænnec invented the stethoscope and discovered auscultation. The methods were practically complete, but it took forty years and the influence of Skoda to make physical diagnosis a familiar art. The era of speculative medicine was fast drawing to a close. Fads and isms arose, as they will arise from time to time among the half-educated and the degenerate, but their influence has been with few exceptions shortlived and its reaction upon scientific medicine favorable. The microscope ceased to be a scientific toy and became an instrument of precision. New sciences ranged themselves as the handmaids of medicine. In 1858 Virchow issued the "Cellular Pathology as based upon Physiological and Pathological Histology." It was but a step onward to experimental physiology, physiologic chemistry and experimental therapeutics. In truth the "close and severe" methods had come and had come to stay. It was evident that these methods and these only could be successfully used in the search for truth. The fairy-tales of science had become the everyday handbook of the doctor. We had fully entered upon the era of experimental medicine. Ether and chloroform anesthesia for operative purposes robbed surgery of half its terrors and rendered possible operations previously impracticable. The germ theory of disease came into prominence as a working hypothesis. Lister made the astounding discovery of surgical cleanliness, and early in the last quarter of the century the new surgery replaced the old. Marvellous changes! Anesthesia had robbed surgery of half its terrors; an almost perfect antiseptic technic has taken away the rest. In fact there are those, chiefly among the gentler sex, for whom surgery appears to have no terrors whatever.

The obvious impossibility of the individual mastery of the medical sciences and of the art of medicine gave rise to the specialties. In truth the laboratories were the beginning of specialism, which became an imperative need, partly on account of the necessity of more limited fields of investigation; partly because of the requirements of a precise and extended technical skill. If the specialties have been multiplied somewhat beyond the needs of the profession or the people, and if isolation of thought and shortcomings of practice have come of their too narrow cultivation, these are errors which tend to correct themselves, and, despite its faults, specialism is a power in the medicine of our times both in promoting knowledge and in direct healing, the importance of which cannot be overestimated.

Clinical medicine, great as had been its advancement, began to lag in the progress. It fell behind surgery and for a time scarcely kept abreast of the minor specialties. The explanation was not far to seek. It was to be found in the complexity of the problems and in the greater number of unknown values, especially in causation. For a time this great branch of medicine waited for that new science which was to place it foremost among the specialties, to render possible the study of origins, to reveal the nature of infection, to set preventive medicine upon a sure foundation, to point the way to rational systems of therapeutics. The germ-theory of disease ceased to be a working hypothesis and became a demonstration. The science of bacteriology came into existence. Youngest of the biologic sciences, it has accomplished more for medicine in three decades than all the rest had been able to accomplish in three centuries. Bacteriology has done away with speculation in medicine forever, and has for all time established experimental research as the final court of appeal.

In counting up the gains in medicine during the century I must not overlook the progress in therapeutics. It is a common criticism of modern medicine that with all the advance in pathology and diagnosis, and above all in knowledge of the causation of disease, we have made but insignificant gains in the art of healing. It is asserted that we are doubly losers, since we have also cultivated a distrust for many of the remedies which our forefathers learned to rely upon as the result of their empiric employment; that we have discarded many things that were good and found few to take their place. The criticism is of the most superficial kind. It is true that we have thrown away a host of useless drugs. The pharmacopeia of the future, so far as concerns mere drugs, will be but a slender volume. But we have kept those that are useful and acquired the art of employing them with precision and effect. We have learned to turn over to the surgeon in the confident hope of speedy cure many cases of disease until recently left to perish slowly under the unreasoning administration of drugs. The list of such diseases is growing from day to day. Who will say that the brilliant successes of modern surgery do not mark an advance in therapeutics? But wholly within the field of internal medicine the progress is far from insignificant. I for one do not hesitate to say that the abandonment of useless drugs is a most important step in that progress. But there are other gains of a most positive kind. The list is a long one and I only remind you of the analgesic group, the greater number of them synthetic products of the most advanced chemistry, of the nitrites, the bromides of arsenic in pernicious anemia, the salicylates, and of the serum-therapy in diphtheria and of organotherapy in myxedema. Nor do we forget the systematic use of baths, gymnastics and massage, nor of climate, long-forgotten measures of treatment that modern scientific medicine gladly accepts from antiqity. But by far the most important gains lie in the direction of preventive medicine and prophylaxis. In the beginnings of disease — no, before the beginnings — the medicine of our day plays its most important therapeutic part. Disinfection means something; preventive inoculations, whether against cholera in swine or against diphtheria in man, are scientific measures; quarantine means no longer a senseless forty days' detention but very often the salvation of a people.

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[1] The Oration on Medicine at the Fiftieth Meeting of the American Medical Association, Columbus, Ohio, June 7, 1899.

But it is not what modern medicine has done in therapeutics that so much exalts it in our eyes as what it is in the sure way of doing in the future. The lines are laid straight for it. The problems are set before it. They are difficult and abound in unknown values. But, one after another, many of those disturbing quantities will receive an approximate valuation and in the solution of problems now being worked out lie therapeutic possibilities of the highest import. The aim of modern medicine and the object of modern therapeutics is not so much to cure disease as to prevent it. The human mind is now chiefly concerned in the study of origins. In every department of research, whether the natural sciences, criticism, history, even theology, the same method of inquiry is pursued. In the words of Allbutt, the analytical method is "leading to a revolution in our conception of therapeutics as of all these other studies; a revolution which as yet we have not fully understood. This revolutionary conception is that death is not to be driven away by the apothecary, not by any cunning compilation of drugs, but it is to be prevented by the subtle strategy which consists in knowing all the moves of the game." And he predicts that "the medicine of the future will consist in setting our wits to nature; in recognizing that when evils have befallen us there is no counsel, and that in the simple beginnings of things are the time and place to detect where stealthy nature, atom by atom, builds and unbuilds, feeds us or poisons us." Modern medicine is no longer content with trying to make some salvage out of the wreckage of disease, but is earnestly seeking for measures by which the storm can be avoided, the channels deepened, and the rocks upon which high hopes are wrecked beaconed.

The century is the most wonderful in history. To my thinking nothing in it is more wonderful than the advance in medicine; an advance which not only has covered the widest achievement, but has also brought us to the borders of the most abundant promise; an advance which is greater than its achievement and its promise, because it consists in a revolution in our conceptions of the purposes of our art and was only rendered possible by the final exchange of the empiric method for the scientific. All that is best in the older medicine is to be found in the new, but the new is something essentially different. The old was an art based upon empiricism, relying largely upon so-called specifics, and not altogether scornful of charms and magic. The new is an art based upon a group of correlated sciences and deriving its power from the forces of nature. But the new is the outcome of the old; for the empiric method is the gateway to science, and the accumulation of facts necessarily precedes generalizations in regard to them.

It is of interest to note the position of the United States in regard to modern medicine. It is no long time since our people were pushing westward over the wilderness, and a famous poet and story-writer has accused us of being some centuries behind Europe in learning and manners. Railroads and the telegraph are great civilizers, and the Postal Union a wonderful teacher. There is no wilderness now except that beyond the seas and "a few centuries" is a figure of speech. In medicine the world's knowledge is ours. The latest work of investigators in every field of research and in every country is quickly before us and we give something in return. Laveran discovered for us the malarial parasite, and Marchiafava, Golgi, and others of the Italian school elaborated his observations; but an American, the late Prof. J. K. Mitchell, had anticipated the discovery, being "the first to approach in a scientific spirit the nature of infective disease and particularly in malarial fever"; and Laveran's observations were early confirmed on this side the Atlantic by Councilman, Osler, Thayer and others. Roux and Behring gave to the world the treatment of diphtheria by antitoxin serum, but the uncertainties concerning its efficacy were settled by Welch's analysis of the statistics and the two collective investigations of the American Pediatric Society. Ernest Brand devised the method of treating enteric fever by systematic cold bathing and showed that by it the mortality is cut in half, but it remained for American practitioners to demonstrate that the plan is not only feasible in hospitals but also in private practice. Macewen and Horsley showed that cerebral tumors could not only be definitely localized but also that they could be successfully removed, but cranial surgery was carried to its full development and a perfect technic laid down by Keen. Here and there we have given more than we have received. We recall the contributions to neurology and especially the successful treatment of neurasthenia and hysteria by Mitchell, the second in the line of an illustrious medical family, and speak of intubation in grateful memory of the gentle O'Dwyer, and in surgery we are reminded that the New World has given something to the Old by the work of Senn, Murphy, Richardson, McBurney, my colleague Deaver, and by that in earlier times of the clear-minded Grosses, father and son, the brothers Atlee and the heroic McDowell. The instances of accord, response, co-endeavor between the workers in medicine on the opposite shores of the Atlantic could be indefinitely multiplied.

In the field of literature the conditions are the same. On the one hand the great weeklies of Berlin and Munich, the *Lancet* and the *British Medical;* on the other the journals of Boston and New York, the *Philadelphia Medical Journal*, and the *Journal of the American Medical Association.* It is impossible to speak here of individual monographs and treatises. But against such storehouses of medical lore as Ziemssen's Encyclopedia and Nothnagel in Germany, and Allbutt's System in England, may we not set Pepper's System, and that of Loomis and the Twentieth Century Practice? It is an exchange of courtesies, of products. It is a well-balanced reciprocity.

If America is a little behind in original research, she is very alert in the application of that which is serviceable. If her investigators are less laborious and less numerous, her practitioners excel in adaptability, tact and skill. Meetings of national societies such as this, and the national and international congresses are a strong force in the process of unification. One of the finest things in the medicine of our day is its solidarity. In the institutions where medicine is taught, and in the organization of the instruction we are making hopeful advancement. Much remains to be done, but the defects are chiefly in the direction of want of uniformity of requirement and of full co-operation among the several States, and are in a fair way of correction. An open-handed philanthropy has scattered among the great centres of population from the Atlantic seaboard to the Pacific slope commodious, well-appointed, fully-equipped hospitals, not at all inferior to the great hospitals of the Old World. Their foundations are less ancient, as must be in a young country, but their spirit is more plastic. Traditions are fine, but they sometimes fetter thought. To the noble-hearted non-medical managers of these institutions it is clearer than ever before that while the care of the sick poor is the primary object, it is by no means the whole object of a modern hospital. The instruction of the student, the training of the doctor, clinical and pathologic research, the accumulation of facts for immediate or future use in scientific medicine are secondary functions of essential importance. So it has come to pass that to the non-medical mind, as it has long been to the medical, the necessity of the set of laboratories, pathologic, bacteriologic, clinical is paramount.

The correlative fact that the number of the staff must be much greater in proportion to the number of the patients than formerly has also become apparent. So that by a process of evolution hospitals are taking a much larger part in the education of the doctor than ever before, even those in which a very conservative management is hostile to clinical instruction.

It is clear then not only that medicine has kept pace with the progress of the times, nay, more, that it has made advances even more wonderful than many other departments of thought, but also that in America the position of the profession compares favorably with that of any other country. Medicine with us is to-day one with the medicine of the world. Yet it is little more than 100 years since the country was without a medical profession in the sense in which the term is now used and was then used in the Old World.

This is not the time nor place to rehearse the history of medicine in the colonies. The subject is set forth in great detail in the writings of Beck, Clark, Bigelow, Ruschenberger, N. S. Davis and Billings. In 1760 the General Assembly of New York ordained that "no person should practise as a physician or surgeon in the City of New York before he had been examined in Physick and Surgery" under certain specified conditions, and prescribed a penalty of £5 for violations of this law. A similar exactment was passed in the colony of New Jersey in 1772. These were the only attempts to regulate the qualifications and practice of physicians by any of the colonial governments previous to the time of the Revolutionary War. The first institution for the teaching of medicine, the Medical School of the College of Philadelphia, begun in 1765, continued its usual courses of instruction until June 1, 1777, when all the departments of the college were closed in consequence of the occupation of the city by the British Army. In 1768 an effort was made to establish a medical school in connection with King's College in New York, which had been in operation for several years. The success which attended this effort was moderate and it is stated that in 1774 "about 25 persons attended the anatomic lectures, some of whom were students from the West Indies." During the War of the Revolution there was little time or opportunity for the cultivation of any art or profession save that of arms. Many of those who had been most active in the medical life of the colonies shared the toils and privations of the army as surgeons; others, as Warren and Mercer, assumed the responsibilities of active military careers. The military occupation of New York and Philadelphia necessitated the suspension of the medical schools for a period of many months. The feeble beginnings of professional organization in the colonies were arrested. When at the close of hostilities they were resumed it was with an earnestness that argued well for the future, but upon a scale commensurate with the limited resources of the exhausted colonists and the sparse population of a new country.

The Medical School in Philadelphia was reopened in 1778, and became, after some vicissitudes, the Medical Department of the University of Pennsylvania. Among those comprising the faculty we find the names of Shippen, Wistar, Kuhn, Rush and Barton. An attempt to revive the Medical Department of King's College in New York came to an unhappy issue by reason of a popular outbreak caused by the suspicion that some bodies had been stolen from the graveyard for dissection. It was not until 1792 that this medical school was reorganized with a faculty consisting, among others, of Post, Rogers and Bard. In 1782 some courses of lectures on the different branches of medicine were given in connection with Cambridge University, and in 1788 a medical faculty was established, at the head of which was Dr. John Warren, with Waterhouse and Dexter as associates. At the time of which I speak the classes were small, and the number of those who received the degree of

Doctor in Medicine few. The requirements for admission were low, and those for the degree not difficult. But in the absence of legislative requirements, in order to practise, save in the City of New York, and because the degree of Doctor in Medicine carried with it neither honor nor special privileges, comparatively few availed themselves of the opportunity to obtain it. Many of the more prominent men in the profession had received degrees in foreign universities, but among the ordinary physicians were many who had entered upon practice as apprentices or as bachelors of physic, or had picked up some knowledge of medicine and surgery in military hospitals or in service upon the field. There was a limited medical literature, of which Davis has given a list of titles, together with the statement that many of the productions "are characterized by a variety of learning, an accuracy of observation, and an originality of thought that would do credit to any age or country." But these were mostly of the nature of essays and dissertations, and the books in general use were European. The latter consisted of the writings of Sydenham, Boerhaave, van Sweiten, Mead and Huxham; Haller's Physiology; in anatomy, Chiselden, Cowper and Monro; Sharp's Surgery; Smallie on Midwifery, and Lewis's Materia Medica. The instruments and many of the drugs were imported. The best men of the time were trained abroad. Upon their return they brought with them learning and books, for which there was nothing to give in exchange save here and there a tract upon yellow fever or the indigenous flora. The buildings of the New York Hospital had been destroyed by fire before the war; the Pennsylvania Hospital was practically the only institution of the kind. Men practised medicine and did their best, but an organized profession cannot be said to have existed. Compared with the older countries, medicine was in a condition of chaos, from which it was struggling to emerge. Certainly it was far enough behind them.

It must be admitted that the rapid strides with which the medicine of the younger country has overtaken and is now keeping pace with the medicine of the world were largely due to the facilities of intercommunication that constitute one of the peculiarities of modern life. Knowledge travels far and fast. It has the wings of the light. It must be also conceded that such progress has been aided and accentuated in a remarkable manner by the master-spirits who, from time to time appearing upon the scene, seem to be charged with an especial mission, and whose presence marks eras in the course of human events. Easily and by far the greatest of these, *primus inter pares*, is Rush. Others among his contemporaries I have already referred to. Nor do I intend to enumerate a complete list. Permit me to name one here and there, sometimes a group, as fine examples of medical men who, to say the least, are not commonplace. It is easy for one who has read our medical history to recall John Morgan, Redman, Hosack, Drake (who wrote the "Diseases of the Mississippi Valley"), or that coterie of Louis's pupils, including Shattuck, Oliver Wendell Holmes and Gerhard, who brought back from France physical diagnosis, the distinctions among the fevers, and reasonable methods of clinical work; Jackson and Morton, and the controversies concerning ether; the group of men who, representing others, it is true, really effected the organization of the American Medical Association, whose officers were Knight, Bell, Delafield, Arnold, Stillé, Jones, of New Orleans, is to be mentioned among those whose writings have powerfully influenced the trend of medical thought in the United States, and Flint, and Otis and Woodward, to whose industry and ability we owe the "Medical and Surgical History of the War of the Rebellion"; and Billings and Fletcher, who have given to the medical world the "Index Catalogue of the Library of the Surgeon-General's Office of the United States Army," and that unique and most useful of current medical publications, the *Index Medicus.* I mention, with that emotion with which we speak of a companion newly passed away, John B. Hamilton, of whose skill as an organizer this Association has had abundant proof; and Pepper, a life of matchless energy and devotion to the widest human interests, whose rare gifts as a physician, abilities as a teacher, civic pride and high patriotism will place him, when the dispassionate history of our times comes to be written, among the great Americans and in the foremost rank of the citizens of that Commonwealth which reverently claims Franklin and Rush as her own.

It is not wholly to the ease with which knowledge is spread nor to the great men of the profession that we owe the advanced position of medicine in America to-day. Important as each of those factors is, it may well be questioned whether their combined influence could have impressed upon the art of medicine that peculiarity in which the profession of our country stands pre-eminent, and which is at once of the greatest practical value and of the richest promise for the future. That peculiarity is the prevalence of high ideals. All kinds of men engage in the pursuit of medicine from all kinds of motives. But to the necessity of a livelihood and to personal ambition the American doctor adds, and very often in the absence of those he cherishes, a sort of chivalric devotion to some principle allied to his calling but only indirectly bearing upon his everyday affairs. It may be a collateral science, or preventive medicine, or schemes for the welfare of the poor, or *belles lettres*, or medical libraries, or for himself a broader knowledge and a keener art, or toward his fellow-man a greater gift of usefulness. Such thoughts are solace in his toil and recreation in his hours of leisure; with widening opportunities and high examples he must have something more than his everyday work. Without some cherished ideal he cannot be content. This wholesome mental restlessness is peculiarly American. It comes of our physical restlessness. We lack repose because we abound in energy. Contentment means conservatism and conservatism points in the direction of stagnation. When we speak of stagnation we think of loneliness, of isolation.

The tendency which distinguishes American medicine is essentially opposed to isolation, to individualism. It exerts itself in the direction of a higher, more complete and more specialized organization of the profession. It is this tendency that has made the general fount of knowledge accessible to all members of the profession who care to share in it; that has given to the independent worker in whatever department an uplifting sense of companionship, of community of interest, of sympathy in a common cause. It is this that has brought into the life of the toiling practitioner in the monotony of his everyday duties and cares a saving consciousness of personal dignity and power.

To the physicians of Northern New Jersey must be ascribed the credit of having made the earliest attempt to promote the interests of the profession by means of organization. In the year 1766 a meeting was held at New Brunswick, attended by delegates from all parts of the State, and a permanent organization effected. The objects of the association as set forth in the preamble to the constitution were "mutual improvement, the advancement of the profession, the promotion of the public good, and the cultivation of harmony and friendship among the members." This society held regular meetings twice a year until the breaking out of the war. In 1781 the Massachusetts Medical Society was incorporated. Towards the close of 1786 the College of Physicians of Philadelphia was instituted. Other similar organizations followed from time to time until that memorable meeting of May 7, 1847, at which, by the election of Nathaniel Chapman as president; Jonathan Knight, Alexander H. Stevens, James Moultrie, and A. H. Buchanan, vice-presidents; Alfred Stillé and J. H. W. Dunbar, secretaries; and Isaac Hays, treasurer, was finally carried into effect the organization of the American Medical Association.

All honour to those who conceived the far-sighted plan. Every State, local and district society may be included within its scope. Every reputable physician in this great country may become eligible for membership. What a power for good is it not capable of wielding? How great this power is may be seen in the growing membership, in the earnest and advanced work of the sections, in the keen discussions, in the splendid journal which serves as the permanent record of its transactions, in the illustrious line of its presiding officers. But there are other manifestations of the power of the Association for good that are less obvious but scarcely less important. They are constantly and steadily increasing over the whole land. They consist in most vigorous growth and activity in the local societies, a higher standard of professional attainment among the members of the profession, a deeper sense of responsibility, a loftier conception of the duties and privileges of our calling. No man who comes within the influence of this far-reaching organization stands alone. He becomes aware that he is a member of a profession to which he owes duties and from which he derives honor and help. This unseen, widespread influence tells quite as powerfully in advancing the general interests of the profession as its splendid annual meetings. But we are less apt to think of it. We need have no concern about the power of the Association. As it has been in the past so will it be in the future, steadily augmenting. It has the intrinsic elements of strength found in all great and comprehensive organizations. What most interests us is how we may best use that power for the good of the profession and the people. We have been half a century gathering strength. Let us put it to some purpose. It is no part of my present duty to go into details, but it may be permitted to me to indicate certain matters in which the influence of the American Medical Association may be of importance. There are several organizations with specific purposes which hold their annual meetings at the same time and whose work is in harmony with ours. It is important that we should give these bodies our full support. This is especially the case with the Association of American Medical Colleges, to the recent action of which we are already committed.

In general, as regards the requirements for the degree, the American Medical Association should in my opinion exert an influence to secure uniformity in the requirements for admission, a systematic graded course, with uniform tests at the end of each year, and uniform requirements for graduation. With reference to written examinations, the question of the honor system should be persistently agitated. If that system can be carried out at many of the colleges, at West Point and Annapolis, and at the University of Virginia, why not in all our medical schools? Its general adoption would go far in determining a high standard of personal and professional honor.

It should exert its influence also to secure general uniformity in the examinations for the license to practise among the States, and a general reciprocity among those boards by which the licenses may be transferred.

It should strongly exert its influence in the direction of the regulation of the specialties and the requirement of evidence of clinical experience in general medicine as prerequisite to the practice of them.

It should exert its influence in the matter of expert testimony in courts of justice. This subject is a growing scandal. A change of practice is urgently necessary both in the interest of justice and that of the medical profession.

It should exert its influence to secure such legal enactments in the several States as will protect the people from the various forms of unorganized and organized quackery, and to the end that no license to practise medicine in any of the branches shall be granted to any applicant until such applicant has successfully passed an examination in anatomy, physiology, surgery, midwifery and the diagnosis of diseases; and that a stringent penalty shall be enforced against all persons who seek to practise upon the sick, injured or deformed, by any means or upon any pretext whatever, except in the case of accident or emergency, and then only for the purpose of immediate relief and assistance.

It should exert its influence to build up in the secular and religious press of the country a proper sense of responsibility in regard to lewd, indecent and criminal advertisements, thinly disguised as medical, and against the appearance in such publications and in certain so-called medical journals of advertisements of nostrums and cure-alls.

It should exert its influence to secure such legislation as will obtain uniform divorce laws for the whole country, and do away with the legal enormity of a man and woman being legally married in any State and living in adultery so soon as they have crossed its borders. The question is primarily one of morals, but it is also one of health.

It should exert its influence strongly in favor of proper rearrangement of the status of military and naval medical officers to the end that the efficiency of those branches of the public service may be increased and the recompense and the rank of the medical officers properly adjusted.

It should exert its influence to secure the dual appointment of surgeons and physicians to regiments and posts, since the work of the two is complementary and cannot in the present state of the art of medicine be properly performed in all its details by any one man, especially in active service; also to secure the establishment of clinical laboratories in connection with the military hospitals in the tropical stations with the detail of medical officers especially fitted by training and experience for the investigation of tropical diseases and conditions.

It should exert its influence to secure a national quarantine service with full jurisdiction over the seaboards and the lake borders, and over internal regions affected with general epidemics or endemic conditions not amenable to the control of the local authorities.

It should exert its influence to secure the appointment of a Secretaryship of Public Medicine, the portfolio of which should be assigned to a medical man, to the end that the President may be promptly and authoritatively advised concerning technical questions of vital importance to the welfare of the nation.

To many of you these suggestions seem utopian, impracticable. Not so. If we earnestly desire them they will come to pass. Their fulfilment rests with you and in your hands is the power of an Organized Profession.

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MEDICAL ASPECTS OF CRIME.[1]

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The limitation and treatment of crime is one of the great questions of the day. The closing hours of the nineteenth century are full of wonders. The progress in science, in literature and in art has been marvellous. Medicine and surgery have made mighty strides. The insane, the feeble-minded, the deaf, dumb and blind have received in these later years treatment that is scientific and successful. The care of the criminal is the one great question that baffles society, and great difficulties have arisen from the fact that the medical aspects of crime have not been sufficiently considered. Criminology of to-day is much in the same condition that psychiatry was when Pinel and Tuke appeared and wrought their memorable reforms, substituting patience and scientific treatment for brutality and chains. This transformation in the care of the insane was brought about by the medical profession, and it is our duty to-day with equal zeal and earnestness to consider this question of criminality, find out its etiology, and provide means for its cure. Already the pioneers, Gall, Lombroso, Benedikt, Ellis and a host of others, all physicians, have done a great work, the practical results of which are already manifest. They have established the fact that the habitual criminal is an abnormal man, the abnormality manifesting itself: (1) Physically in the criminal physiognomy, in stigmata of degeneration, in anomalies of the muscular, sensory, respiratory and circulatory system, and (2) psychically, in moral insensibility, lack of forethought, low grade of intelligence, vanity and egoism and emotional instability.

In approaching the study of this subject we are first surprised by the rapid increase in crime — rapid much beyond the ordinary increase in population. The census reports of our own country make the following exhibit:

Year.	Prisoners.	Ratio to population.
1850	6,737	1 in 3,442
1860	19,086	1 in 1,647
1870	32,901	1 in 1,171
1880	58,609	1 in 855
1890	83,329	1 in 757

These figures represent the prisoners that were incarcerated, and it has been estimated that only about one-third of them are thus disposed of. This being the case, the number of criminals in 1890 in the United States was about one-quarter of a million. The cost of maintenance, arrest and trial for them has been estimated at about $59,000,000. Now, these statistics, I may say, have been disputed by some criminologists, for the reason that they regard the census reports, prior to 1890, or possibly 1880, as unreliable. Even these doubters admit an increase in crime, objecting simply to the great increase that this table manifests. The statistics of the State of Pennsylvania confirm these national statistics.[2]

	1880	1890	Per cent. increase.
Population of State	4,282,891	5,248,574	22.5
Inmates of penal institutions	5,449	7,340	34.7
Defective classes	6,070	9,712	60
Sane in almshouses	6,648	6,905	3.8
Total	18,167	23,957	31.8

The same is more emphatically true in New York City. The population of that city has increased in the last ten years about 33⅓ per cent., while crime has increased more than 50 per cent. In Chicago the number of arrests for ten years has been as follows:

Year.	No. of arrests.	Year.	No. of arrests.
1884	39,434	1889	48,119
1885	40,998	1890	62,230
1886	44,505	1891	70,556
1887	46,505	1892	89,833
1888	50,432	1893	96,976

The consideration of these several reports cannot leave the least possible doubt in the mind of any one that crime is increasing throughout the United States in a vastly more rapid ratio than is the population. The two great etiologic factors in the causation of crime are criminal parentage and environment. The effects of these two agencies are strikingly illustrated in the history of the Jukes family, as related by Dugdale.[3] The ancestor of this family, born between 1720 and 1740, lived to an old age and left descendants who have been traced with varying completeness through five generations. The total number of his descendants is 1,200. While it includes a certain number of honest workers, it has been a family of criminals, prostitutes, vagabonds and paupers, costing the public treasury about a million and a quarter dollars.

Another of these remarkable exhibits is the tribe of Ben Ishmael, studied by McCullock.[4] He discovered and identified 1,750 descendants of this man living in Kentucky in 1790, who had been criminals and paupers, among whom 121 were prostitutes. In six generations 75 per cent. of the cases treated in the City Hospital in Indianapolis were of this man's offspring.

Professor Pellman, of Bonn University, has discovered and identified 709 descendants of Frau Ada Jurke, a notorious drunkard, who was born in 1740, and died in 1800. Of these 7 have been convicted of murder, 76 of other crimes, 144 were professional beggars, 61 lived on charity and 181 were prostitutes. This family has cost the German Government for maintenance, cost of courts, almshouses and prisons, one and a quarter millions of dollars.

Similar studies would bring to light hundreds of just such cases, these three being by no means a remarkable exception in the procreative capacity of criminals and in the effect of parentage and environment.

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[1] Address on State Medicine before the Fiftieth Annual Meeting of the American Medical Association, Columbus, O., June 6–9, 1889.— From advance sheets of the Journal of the American Medical Association.

[2] Boies: Prisoners and Paupers, p. 10. G. P. Putnam & Sons, 1893.

[3] The Jukes: A Study in Crime, Pauperism and Heredity. By R. L. Dugdale. G. P. Putnam & Sons, 1877.

[4] Boies: Prisoners and Paupers, p. 176. G. P. Putnam & Sons, 1893.

An important factor in the cause of crime is intemperance. Fully 50 per cent. of the criminals arrested in Chicago are inebriates, and the police reports of New York show about the same proportion. As Macdonald[5] has well expressed it, "The saloon is the place where the criminal finds his accomplices; it is the abode where they not only meditate their crimes, but where they spend the money obtained by crime. The saloon is the true home of the criminal, and sometimes the keeper plays as backer."

Ferri[6] has shown beyond question that in France crime increases and decreases with the more or less abundant vintage, and we may safely attribute, at least, some of the increase of criminality and pauperism in the United States to the increase of intemperance, and we may estimate that alcoholics are the direct or indirect cause of probably 75 per cent. of all the crime committed. None to-day, I think, will gainsay Morel's statement that alcoholism has produced a demoralized and brutalized class of wretched beings, characterized by an early deprivation of instincts, and by indulgence in the most immoral and dangerous actions.

The constant and rapid increase of the urban population is another etiologic factor. The recent growth of cities is one of the phenomena of our social system. When our Government was established a century ago, its first census showed only about 3.3 per cent. of the inhabitants of the country living in cities of 8,000 and over. The census of 1890 shows such an increase that 27.6 per cent. of our population is urban. None know better than physicians what this crowding together of people means; with the bad air, poor and insufficient food, impure water, children in the midst of want, misery, immorality and vice, it is no wonder that the increase in crime goes *pari passu* with the growth of a city.

The criminal laws and their unreasonable execution are another factor in the causation of crime. The code of to-day is largely the Roman code. In ancient Rome it did well because the death penalty was common. The Coliseum had to be furnished with material for the amusements of the citizens, and "to the lions" was a common sentence; and then Rome had her Tarpeian Rock from which the defectives could be hurled and thus disposed of before the state could be troubled by their presence. To-day, with the death penalty rarely enforced, and with no such cutting off of the supply of criminal material, the law contributes to its increase rather than to its diminution. One of the absurdities of the law is the frequent conviction of the same criminal, not only an absurd work, but an expensive and unprofitable one.

The case of Jane Cakebread of London, with her 269 convictions, is but an exaggeration of daily occurrences in our own courts. Jane Cakebread, like many of our own criminals, should have been convicted but once. Our jails are schools of crime. The delay of the law gives the children, sometimes arrested for trifling offences, weeks and months of tutelage under old and often incorrigible masters in crime, even before their guilt or innocence is established, and after conviction further instruction in the same arts, so that when they leave, after their brief period of restraint, they are experts and will do much damage to person or property before they are again sent up for further instruction.

Then, again, the laws are defective because they are directed against the crime and not the criminal, overlooking the important fact that the crime is an accident, and the criminal may be the product of a long line of etiologic factors, demanding for his cure not punishment but reformation. The law says that if two men commit the same crime their guilt is equal, and the same punishment must be inflicted on both, overlooking the possibility that the one may be a hereditary habitual criminal whose whole life has been a war against society, and who is utterly incapable of reformation, and that the other may be simply the victim of circumstances, whose life previously may have been pure and noble. To the one man the prison may be a haven of rest; to the other, a living tomb.

	Jaws.								Teeth.			
	Number examined.	V-shaped.	Partial V.	Semi V.	Saddle.	Partial saddle.	Semi-saddle.	Normal.	Irregular.	Tubercles of teeth.		Regular.
										Present.	Absent.	
Criminals at Pontiac, Ill.	465	75	71	3	66	63	16	171	123	13	552	342
Criminals at Elmira, N. Y.	1041	381	49	1	157	26	....	422	220	26	1015	821
Criminals at Joliet, Ill.	468	13	79	19	59	92	24	163	...	..	....	...
Prostitutes at Chicago Bridewell.	30	10	17	7	27	10	10	......	...	..	....	...
Insane at Dunning, Ill.	700	26	47	....	12	....	....	486	...	..	....	...
Insane at Kankakee, Ill.	613	69	107	29	89	105	61	163	...	..	....	...
Idiots, imbeciles.	1977	129	236	....	207	...	....	1095	...	..	....	...
Deaf and dumb.	1935	169	193	....	203	....	..	901	...	..	....	...
Blind.	207	7	9	....	11	....	....	105	...	..	....	...
Inebriates.*	514	1.5	24.4	0.3	9.3	15.2	7.7	25.4	...	..	....	...

No cases of arrested or excessive development. * Per cent.

The habitual criminal, who constitutes the great bulk of the class, is a biologic study, and his anatomic, physiologic and psychologic nature demands our most careful investigation, in order that we may determine the ways and the means to settle the various and vast questions to which he gives rise. There is a criminal physiognomy, by no means easy to describe, but the same, no matter whether seen in our jails or in the jails of any other country on the globe. Any physician, by looking at the face, without being able to describe its anatomic peculiarities, can reach conclusions, as Mandagazza writes, on five important problems: (1) The condition of health or of sickness; (2) the degree of beauty or of ugliness; (3) the moral worth; (4) the intellectual worth; (5) the race. The study of physiognomy, regarded as of such great importance by the physician of the last century, is too much neglected by the physician of to-day.

Prognathism is a prominent characteristic of the criminal face. The lower jaw is often remarkably developed. Manouvier found that while the average weight of the Parisian criminal skull is, if anything, below that of the ordinary Parisian, the jaw of the latter averages 80 grammes, and that of the former 94 grammes. The prominence of the zygoma has been noticed by many observers, and anomalies of the teeth and jaw are common. Talbot[7] has worked out the preceding table, which is interesting in this connection.

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[5] Macdonald: Criminology, p. 88. Funk and Wagnalls Co., 1893.
[6] Ferri: Criminal Sociology, p. 117, D. Appleton & Co., 1896.

The ear is a feature of great importance. It is so sensitive to vasomotor changes, to extremes of heat and cold and to varying emotional states, that it is an organ which frequently shows degeneracy. Talbot thus describes the normal ear: "It should have a gracefully curved outline, be nowhere pointed or irregular, having a well-defined helix, separated from the antihelix by a distinct scaphoid fossa, extending down nearly to the level of the antitragus; its roots to be lost in the concha before reaching the antihelix. The antihelix should not be unduly prominent, and should have a well-marked bifurcation at its upper extremity. The lobule should be shapely, not adherent, not too pendulous, and free from grooves extending from the scaphoid fossa. It should not average over two and a half inches in length, and one and a quarter in breadth."

The ears of criminals show many deformities, such as Darwinian tubercles, absence of helix, of antitragus, of lobule, and excessive development of antihelix and of the tragus, and the auriculo-temporal angle undergoes a gradual progression from below 90 in the normal, above 99 in criminals, up to above 100 among apes.

The criminal nose has been measured and studied with great care by Ottolenghi. He finds that the criminal nose in general is rectilinear, more rarely undulating, with horizontal base of medium length, rather large, and frequently deviating to one side. He has established the anatomic relationship between the criminals, insane persons, epileptics and monomaniacs.

Pallor of the skin is common among criminals. Ottolenghi has investigated wrinkles on the faces of 200 criminals as compared with 200 normal persons, and found that they are much more marked in the criminals than in the non-criminal, that they occur much earlier in life and are of greater prevalence about the nose and mouth, that is, about the least contemplative and more material parts of the face.

The beard in criminals is usually scanty; as against 1.5 per cent. of absence of beard in normal persons, Marrow found 13.9 per cent. in criminals, and a very large proportion as having scanty beards. On the contrary, the hair of the head is usually very abundant, often coarse and woolly.

The cranial capacity of criminals has been studied by many with diverse conclusions. The average size is probably about the same for the two classes. The cephalic indices are frequently an exaggeration of those of the race to which the criminal belongs. The auricular angles, which depend on the form of the cranium, give interesting results, as determined by Quatrafag,[8] Hamy, and confirmed by others:

	Nasal orbital angle. Degs.	Frontal angle. Degs.	Parietal angle. Degs.	Occipital angle. Degs.	Angle of cerebellum. Degs.	Total cerebral angle. Degs.
Gorilla	61	35	58	....	....	....
Chimpanzee	59.5	35	54	19	43	108
Microcephalics	52.5	41.2	59.3	36.5	35.7	137
Idiots (not microcephalic)	47.5	44	62.5	38.3	32.3	144.8
New Caledonians { Men	....	49	63	36	30	148
New Caledonians { Women	....	52	61	32	27	145
African negroes	43.3	51.4	61.7	36.6	35.1	149.7
French assassins (22 in No.)	51.8	50.9	67.1	40.9	29.9	158.9
Modern Parisians { Men	50.3	54.6	59.7	40.1	30.6	154.4
Modern Parisians { Women	48.5	55.4	59.8	37.7	30.1	152.9

This table shows a diminished volume in frontal territory. This I have demonstrated to my own satisfaction by numerous confirmatory observations.

Dr. Corre has arranged the following table that gives some interesting facial characteristics:

FACE.

	NORMAL MEN.			CRIMINALS.								
	TOPINARD.			ORCHANZI.	CORRE.							LOMBROSO.
	Parisians.	Italians.	Negroes.	Assassins.	Violation.	Murder under sectional influences.	Murder under diverse influences.	Murder and theft.	Murder and suicide.	Murder premeditated.	Average.	Criminals in general.
Total length	128 (?)	....	124.0	....	135.5	131.0	132.2	138.0	133.0	140.0	....	....
Simple length	87.7	86.0	....	89.0	90.0	87.6	90.4	86.0	92.0	92.6	89.7	92.0
Bizygomatic, breadth,	132.2	....	130.0	133.6	131.0	133.3	132.8	135.0	132.0	133.0	132.7	....
Indices:*												
Facial	65.9	....	68.6	65.3	68.6	66.2	68.0	63.6	69.6	69.6	67.0	....
Nasal	46.8	....	....	45.6	....	....	....	....	....	....	....	....
Orbital	83.7	....	....	88.4	....	....	....	....	....	....	....	....
Palatal	74.7	....	....	81.5	....	....	.. .	....	....	....	....	....

* Facial index expresses relation of maximum breadth to simple length of face. Nasal index expresses relation of maximum breadth to maximum length of nose. Orbital index expresses relation of vertical diameter of the base of orbit to its horizontal diameter. Palatal index expresses relation of width to length of palatal vault.

Macdonald[9] has gathered together the following interesting facts in craniology: (1) Frequency of the median (or metopic) frontal suture. This character appears with brachycephalic heads and may be regarded as indicating inferiority; (2) the parietal or parieto-occipital sutures grow together earlier. Thus the parietal or occipito-parietal sutures are soon effaced, so the parieto-frontal and temporal; (3) the notched sutures are the simplest. This anomaly (as an interparietal bone in Peruvians and negroes) is considered by Anouchino as a sign of inferiority; it is normal in certain animals and constant in embryonic life; (4) the supernumerary or Wormian bones are frequent in the region of the median posterior fontanelle and of the lateral posterior fontanelles; (5) other characters are the development of the superciliary ridges, with the effacement or even frequent depression of the intermediary protuberance; the development of the mastoid apophyses. These characters are correlative with the great development of the temporo-parietal region, which in turn is related to the development of the jaw; (6) the backward direction of the plane of the occipital depression, as in inferior races, is more frequent in criminals.

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[7] Talbot: Degeneracy, Its Causes, p. 257. Charles Scribner's Sons, 1898.

[8] Macdonald: Criminology, p. 49. Funk and Wagnalls Co., 1893.

[9] Loc. cit., p. 52.

Anomalies of the skull in criminals have been noted by many observers. Ferri[10] has prepared the following interesting table, comparing homicides with soldiers:

Persons in whom I detected	Homicides sentenced.		Soldiers — 711.
	To penal servitude — 346.	To imprisonment — 363.	
	Per cent.	Per cent.	Per cent.
No anomaly	11.9	8.2	37
One or two anomalies. .	47.2	56.6	51
Three or four anomalies .	33.9	32.6	11
Five or six anomalies. .	6.7	2.3	0
Seven or more anomalies. .	.3	.3	0

The brain weight of the criminal does not differ materially from that of the non-criminal. The potentiality of the brain does not depend so much on its size and weight as on its structure. The brain of Gambetta was very small, but very elaborately convoluted, so that it doubtless contained more and better neurons than that of the average person; one of the heaviest brains on record is that of a brick-layer who could neither read nor write. Flesch, out of fifty brains of criminals, did not find one without anomalies. From an examination of twenty-eight brains he found alterations in the meninges to the extent of 50 per cent. in the way of adhesions, various forms of meningitis, hemorrhage, atrophy and atheroma; these observations have met with abundant confirmation.

Benedikt, one of the most thorough and conscientious workers in this field of criminal pathology, found in an examination of nineteen brains of criminals a confluence of fissures. If we imagine the fissures to be water-courses, it might be said that a floating body in any one of them could enter almost all the others. While this type is not necessarily criminal and while the criminal may have another type of brain, yet this is a type of low organization, and absence of brain substance because of the absence of connecting gyri. Benedikt also emphasizes the fissures which he terms the external orbital, very constant in apes, not commonly distinct in the human brain, but rarely absent in the criminal brain.

Another interesting anomaly noted by this observer is that the frontal lobe is sometimes divided into four convolutions instead of three, which he considers an evidence of reversion to the carnivorous type. Professor Benedikt has found other anomalies in brain structure in criminals. In a recent communication he writes: "As we know not the special psychologic values of these anatomic anomalies for the intellect, for the morality, for the esthetic sense and for the will, we must not be hasty with our conclusions, and principally with their application to individual cases or to special individual qualities. I insist always that from exceptional and atypic forms of the skull, as well as of the brain, we can generally deduce only the right of suspect of physiologic anomaly."

The feet of the criminal frequently shows a tendency to revert to the flat foot of the lower races, and this is usually associated with a low instep.

The thyroid glands of the inmates of the Elmira and Pontiac reformatories were examined by Dr. Talbot, who has given me the following figures:

	Number examined.	Normal.	Excessive.	Deficient.
Elmira	1045	106	909	36
Pontiac	465	145	183	137

Bono, in studying the eyesight of criminals, found 60 per cent. of 221 young criminals color-blind. Biliakow, who made similar investigations on a hundred murderers, found 50 per cent of them color-blind.

Tactile, temperature and pain sense are rarely normal in criminals. They are usually much diminished, especially pain sense. Anomalies of patellar tendon reflex are common; they are either exaggerated or very frequently absent.

In fifty autopsies Flesch found 20 per cent. which showed affections of the heart so grave as to be the cause of death. On calculating accidental affections of the pericardium and endocardium the rate was 50 per cent. In this respect the criminal resembles the insane. Many of the manifestations of insanity are due to cardiovascular disturbances, and this might reasonably be expected, when we remember that the blood supply of the brain is much more extensive than that of any other organ not concerned in blood making or blood purification.

The practice of tattooing is very common among criminals, and this, I take it, is remarkable, for one would suppose that among a class whose identity for their own sake should be concealed as much as possible such a practice would not exist at all.

On the psychic side of the criminal's character we find moral insensibility; a lack of forethought; a low grade of intelligence, vanity, egotism and emotional insanity.

The next important aspect of this question is the treatment; this should be based on etiology, to be scientific, and as criminal parentage and environment are the two great causative factors, the treatment should be directed against them. We should stop the propagation of crime. We should make it impossible for there to be any more Jukes, Ben Ishmael or Jurkes families, and to do this marriage should be regulated. There should be no possibility under the law for these people to marry and propagate their kind. Those who oppose the regulation of marriage contend that it would simply multiply prostitution, but multiplying prostitution does not necessarily mean, fortunately, promoting the propagation of criminals; for while the criminal man may have and does have remarkable virility, yet the prostitute rarely has the capacity of propagation. Very early in her career, by a wonderful conservatism in nature, her maternal passages become diseased to such an extent as to make conception almost impossible or very rare.

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[10] Criminal Sociology, p. 12. D. Appleton & Co., 1896.

The operation proposed by Dr. Ochsner,[11] consisting in a resection of the vasa deferentia, does not mutilate the person; it does not destroy his sexual power, but it does prevent his power of propagation, and it is an operation attended with very little risk to life, and in my judgment it may be made a most useful agent in preventing an increase in criminals. Castration has been proposed by some, but the operation is vastly more dangerous. It is a great mutilation, and destroys sexual power, and for these several reasons is by no means as useful an operation as the one proposed above.

The children of these degenerates should be taken in charge by the courts and placed at the very earliest possible age, certainly not later than seven years, in a favorable environment, and by this means the great bulk of them might be made useful citizens. Alcoholism is a very important and exceedingly difficult etiologic factor to dispose of. The saloon is such a powerful factor in our political system that it seems to be impossible to have legislators enact laws that will properly regulate this great traffic. We see no way to accomplish any positive results except as physicians spreading information among the people as to the baneful influence of intemperance, and so educating the old and the young that the powerful influence of the great factor in politics may be neutralized. We need to-day legislation for inebriates; authority to place them in prolonged confinement during which they may undergo such treatment as may be necessary for their cure, and we certainly need some legislation by which the traffic in alcoholics may be diminished, and by which the quality of the liquor furnished may be improved. But the best way out of it is not by prohibition at this time, surely, but it may be by a high-license system. There should be some remedy provided against the constant increase in urban population. Some method should be provided for the restoration of the equilibrium, some way by which the unproductive citizen might be transported to the country and made productive.

The last etiologic factor — the laws and the unreasonable manner of their execution — demands such changes that those who are concerned in the sentencing of criminals should know something about their biologic condition, and surely the ordinary juryman cannot possibly possess this knowledge. It would seem best, therefore, that the determination of this question should not rest with the ordinary juryman; that all sentences should be indeterminate; that the criminal should be sent to a prison or reformatory not for any specific time, but until he is reformed or cured, precisely as the patient is sent to a hospital. A person who has committed his first offence should not be permitted to associate with hardened criminals; trials should be speedy and prompt. The pardoning power should be taken out of the hands of governors of States and placed under the control of a board of pardons, whose members shall be skilled in a criminal anthropology. For criminal minor children there should be reform schools, where, through a protracted period, these children should be educated by manual training, and taught some useful occupation that may be to them the means of earning an honorable livelihood, and when the time comes for their discharge, they should be furnished with the means by which they may establish themselves in the occupation for which they have been trained. This is not an untried proposition, but is to-day in practice in Russia. There should be reformatories for the older criminals who are capable of reformation, and these also should be taught not only the rudiments of an English education, but useful arts, and their confinement should be until they are able to withstand temptation and earn an honest living, and when released from the care of the reformatory they, too, should be provided with a reasonable capital with which to take a start in life. And, lastly, for those who are incapable of reformation there should be penitentiaries for their life-long incarceration, and these should be made as near self-sustaining as possible by having the prisoners employed in useful occupation.

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Original Article.

THE CARE OF THE HANDS FOR THOSE WHO PRACTISE SURGERY.[1]

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By the aid of moist and dry heat we are able to obtain perfect sterilization of sheets, towels, dressings, instruments, gauze sponges, and suture materials. The hands, which come more closely in contact with the fresh wound than any of these except the suture materials, we have succeeded in completely sterilizing in only a certain proportion of cases. The most successful results obtained from experiments conducted by competent bacteriologists with nascent chlorine gas, alcohol and permanganate of potash and oxalic acid, the most approved sterilizing agents, show entire absence of germs from the finger tips in from 87 to 95 per cent. The less successful results show percentages much below these figures.

Keeping the fingers out of the wound as much as possible and the use of rubber gloves, now becoming more and more frequent, will, in a measure, do away with the danger of hand contamination of wounds, but there will always be very nice plastic operations, and operations requiring the most highly trained tactile sense, where the fingers must be put in the wound and gloves will be a handicap. Gloves are proving to be a boon to the surgeon in another way and that is in lessening the danger of inoculating himself. Who has not spent an anxious forty-eight hours wondering whether he was destined to see signs of septicemia from some needle prick or cut received at a septic operation? What wonder that many hospital surgeons are now wearing rubber gloves to operate upon all septic cases?

Assuming that gloves will not come into general use for all sorts of surgery for some time to come, if they ever do, and bearing in mind that the practice of surgery, and more especially of the major operations of surgery, is no longer limited to specialists or the few, it may not be out of place to say something as to the care of the hands.

The general practitioner must of necessity soil his hands many times a day and oftentimes with infective pus. He may be called upon to attend a woman in labor or to do an abdominal operation at any time.

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[11] Ochsner: Surgical Treatment of Habitual Criminals, Journal of the American Medical Association, April 22, 1899.

[1] Read before the Obstetrical Society of Boston, March 21, 1899.

Can he render his hands aseptic by immersing them in the solutions of permanganate of potash and oxalic acid commonly used hereabouts? The bacteriological tests would seem to prove conclusively that he cannot be sure of asepsis unless his hands are relatively free from septic matter before using the solutions. To avoid danger to his patients three courses are open to him: He may wear gloves when handling septic cases, wear gloves when operating, or, lastly, keep his hands all the time relatively aseptic by cleansing them thoroughly as soon as they are contaminated. It is chiefly to urge the desirability of adopting the last course of procedure and to call attention anew to the chlorine process of disinfection that this paper is written.

In my early operative experience, before the days of rigid asepsis, I often had occasion to note that when blood was allowed to dry into the skin of the hands in the course of a prolonged plastic operation, that after a very considerable washing at the close of the operation it was possible to detect specks of blood around and under the nails and in the creases of the skin of the fingers. These specks could often be seen for as long a period as three days, in spite of repeated washings. What are we to think as to the probable number of bacteria that may lurk about such hands if the unaided eye can detect abundant traces of their culture media? It would seem to be advisable then to rinse the hands frequently in the course of an operation to prevent the drying on of the blood or septic matter.

If one bears in mind that washing soda (caustic soda, carbonate of soda) destroys all animal matter extremely readily, and that if used in moderation it will not injure the skin, it is plain that all blood or septic matter may be removed from the hands immediately after they are soiled. A few crystals of soda in warm water in a basin with a not too stiff nail-brush will cleanse the hands in five minutes, at all events so that there is no visible contamination, and will do many times more towards removing septic material than many washings with soap, water and antiseptics after the septic material has dried in.

Therefore, I say, it is nearly as important to wash well after operating as it is before. In the liberation of the germs dried into the skin of the fingers of the surgeon and his assistant by soaking and manipulation we see a partial explanation of the greater liability to sepsis in prolonged operations. We have all seen the busy surgeon at the close of a tedious operation, his lunch hour long gone by, patients awaiting him, make a very hurried washing of the hands, draw on his gloves and be off. He does not stop to think that those gloves are from that moment a source of sepsis, nor how difficult it will be for him to get his hands clean when he has the leisure to wash them carefully.

If it is necessary for the surgeon to soak his hands in septic matter for a long period of time he should scrub them for a correspondingly long period after he is through operating, and, on the other hand, if he barely touches something septic his washing need not be as thorough, for it seems reasonable to suppose that unless the material is especially adhesive it will come off as easily as it was put on.

It goes without saying that the nails should be carefully trimmed daily and the ends smoothed with a file.

Small wounds in the skin of the hands are best treated by covering the wound as soon as possible after the injury is received with flexible collodion. To do this successfully the skin about the wound is sponged with alcohol on a piece of absorbent cotton as soon as the bleeding has stopped. This serves to dry the surface and to partially sterilize it. A drop of collodion is allowed to fall on the cut, and on top of it is put a bit of absorbent cotton a little larger than the wound to be covered. Several coats of collodion are necessary. A dressing of this sort will go through several days of hard washing without coming off and the wound, not being irritated and infected by constant contact with foreign substances, heals by first intention.

If, on the contrary, a cut is neglected until it has suppurated its management is much more difficult. It cannot be rendered relatively aseptic, and we must bear in mind the possibility of a collodion dressing coming off during an operation. Collodion will not adhere to wet skin, and even with the use of alcohol and ether a scratch received after the hands are thoroughly wet cannot be successfully covered with collodion. Therefore, in the case of suppurating wounds, even if as small as a hangnail, in the case of scratches, cuts and needle pricks received in the course of an operation, and when the wound is a large one, a rubber glove should be worn while operating.

The gloves made of pure gum, quite thin and fitting the hands snugly, are the ones I prefer. They may be boiled in a one-per-cent solution of washing soda for five minutes, or in plain water for half an hour before and after using, without injuring the rubber. White cotton gloves such as waiters wear, or thin silk or lisle-thread gloves paraffined, are a partial protection against sepsis in hospital operating and whenever there is doubt as to the previous condition of cleanliness of an assistant's hands. They are not reliable, however, and I prefer rubber gloves. One of the great benefits conferred by the rubber glove is the protection it affords from sepsis from the hands of the assistant. The operator having the responsibility knows of the relative cleanliness of his own hands, but of his assistant, unless carefully trained over a long period of time, he has reason to be skeptical. On this account many operators have limited the number of assistants, so that they work short-handed. With rubber gloves one may have as many assistants as may be necessary without fear of danger.

It is of the greatest importance for the surgeon to avoid any occupation which tends to blister or injure the skin of his hands. A thick skin, which comes from hard manual labor, is not only more difficult to sterilize because of its deeper furrows and wrinkles but it has less tactile sense. To protect against scratches and bruises and general infection the surgeon should wear street gloves as much as possible.

When it comes to preparing the hands for an operation whether gloves are to be worn or not my plan is as follows: After a preliminary washing with soap and water the nails are cleaned with a sterilized steel nail-file. The hands and forearms are scrubbed for five minutes with Ivory Soap and hot water and a nail-brush, the water being changed several times. Green soap is too strong for my skin. It is well to remember that the skin of the hands is much tougher than the skin of the forearms, and that the skin of the inside of the forearm is very delicate. Also that the danger in the form of germs lurks in the hands, more particularly about the nails, and not, as a rule, in the skin of the forearms, which is seldom exposed to infection. Therefore the scrubbing should be mostly of the hands and finger tips. It is a common occurrence to see the house officers in the hospitals with dermatitis of the forearms and hands from too vigorous scrubbing with a too stiff nail-brush and from the effect on the skin of the strong solutions of permanganate and oxalic.

It is plain that one must adapt the nail-brush to the skin to be scrubbed, bearing in mind, however, that an absolutely soft brush is of no use whatever. A delicate skin needs a softer brush, and a delicate, thin skin has fewer and shallower wrinkles in it, lurking-places for septic germs. A dermatitis precludes all scrubbing and, besides, offers many foci for inoculation. If rubber gloves and a long-sleeved sterile gown are to be worn it is not necessary to prepare the forearms, but it is always safer to prepare the hands carefully because of the liability of pricking or tearing the gloves in the course of the operation.

In this connection it may be mentioned that Zweifel uses rubber gloves having no finger tips, each finger being covered by a separate cot of thin rubber. As the ends of the fingers of rubber gloves are especially liable to be pricked or torn by needles and instruments, a separate cot for each finger should prove to be a great saving in expense.

After rinsing the hands and forearms in warm water they are treated with chlorinated lime and washing soda as advocated and practised by Drs. Robert F. Weir and L. A. Stimson, of New York. Dr. Weir published an elaborate paper on this subject in the *Medical Record* for April 3, 1897, and many of the facts here given are from that paper.

The process depends on the germicidal action of nascent chlorine gas, which is liberated from the Labarraque's solution formed by the action of carbonate of soda and water on chlorinated lime. Labarraque's solution (Liquor Sodæ Chloratæ of the Pharmacopœia) is described as "An aqueous solution of several chlorine compounds of sodium containing at least 2.6 per cent., by weight, of available chlorine." It may be used instead of washing soda and chlorinated lime, but unless freshly made is uncertain in the amount of chlorine it contains. Weir experimented with a fortified Labarraque's solution containing ten per cent. of chlorine but found it too harsh for the hands, although he obtained sterile cultures in all his tests.

Chlorinated lime (called also bleaching powder, and, incorrectly, chloride of lime) is air-slaked lime impregnated with chlorine gas. It should contain thirty-five per cent. of available chlorine. The ordinary bleaching powder contains from twenty-five to forty per cent.

Chlorine gas is a very active germicide. It has been proved by the concurrent results of numerous experimenters that chlorine, if present in the proportion of one part in one hundred in the atmosphere of a room, is able to destroy disease germs, provided that the air and the objects are moist, and that the exposure continues for upwards of an hour. The experiments of Duggan show that the hypochlorites as derived from chlorinated lime are also very active germicides, one part to four hundred being capable of destroying moist germs in two minutes, and six parts to ten thousand killing the spores of the anthrax bacillus in six hours. A half of one per cent. of the hypochlorites in solution is said to be sufficient to destroy the spores of most bacteria almost instantly.

In the formation of Labarraque's solution carbonate of soda and water act on chlorinated lime to form sodium hypochlorite and sodium chloride with an excess of sodium carbonate, besides liberating chlorine gas. The excess of soda removes from the skin the fat and the superficial layers of epithelium with their bacteria, and the chlorine and the hypochlorites destroy the bacteria.

Chlorine was first used as a hand disinfectant in practical surgical work by Kümmel of Hamburg in 1885. He used chlorine water. Weir has used chlorine in some form, either chlorine water (U. S. P.), Larbarraque's solution, or chlorinated lime and soda, since 1892 and it has been the recognized method of sterilizing the hands at the New York Hospital for several years and is now in pretty general use in New York.

I personally have used this method since May, 1897, and have found it much superior to the permanganate and oxalic acid solutions. The skin of the hands is left soft and not slippery, as it is after the treatment with the latter, and not rough, as it is after the use of alcohol or corrosive. The hands do not chap and the general comfort of having them in good condition is not to be lightly estimated. Chlorinated lime is also a deodorant as well as a disinfectant and will remove from the hands the odor of fetid pus, feces and iodoform.

Chlorinated lime and washing soda in crystals can be procured of any grocer and are cheap. The lime which comes in small, quarter of a pound pasteboard or zinc boxes is very convenient as one box furnishes sufficient for the sterilization of several pairs of hands. After a box has once been opened the lime quickly loses its chlorine, probably by taking oxygen from the air, and is useless. It is important to beware of the zinc boxes with perforated tops sold in many of the grocery stores, because in these the air having free access there is next to no chlorine in the lime. The commercial chlorinated lime put up in hermetically sealed pasteboard boxes has been assayed by a competent chemist and found to contain from 30 to 35 per cent. of available chlorine. Part of the outer layers were deficient in chlorine, to be sure, but some of the boxes assaying 30 per cent. were over a year old. In this connection it is to be mentioned that it is well to buy the chlorinated lime of the grocer rather than the druggist, as the latter is apt to have small sales, and to keep his goods a long time.

The soda crystals are more convenient for use if finely broken up — not powdered. B carbonate of soda, cooking soda, will not do, neither will effloresced carbonate of soda, that is, crystals which have been exposed to the air and have been reduced to a white powder by the loss of their water of crystallization.

The sterilization of the hands is effected as follows: A tablespoonful of the crystals of soda is placed in the hollow of one hand. It is covered with half a tablespoonful of chlorinated lime, and water enough added to make a thin paste. In the making of Labarraque's solution twice as much soda as of lime is used. In a recent communication from Dr. Weir he advises using soda two-thirds, and lime one-third. The paste is spread over the hands and rubbed well into the skin of the finger tips and worked under the nails with the nails of the other hand. Then it is spread over the forearms. When the water is first added the chemical reaction set up causes the evolution of heat, and a sensation of warmth is felt in the arms and hands. This is followed in a few minutes by a cooling sensation and when this is noticed, in from three to five minutes, the process is completed and the paste is rinsed off with warm water.

The efficacy of this method of treating the hands is attested by the bacteriological tests employed by Dr. Weir. Forty-two tests gave forty sterile results, or ninety-five per cent. of successful results. These figures are to be compared with a series of thirty-one tests made by the same observer under the same conditions with permanganate of potash (1 to 16) and oxalic acid. In these, twenty-two were sterile, or seventy per cent. Howard Kelly, in a series of fifty experiments with permanganate and oxalic got germ free results in forty-four, or eighty-eight per cent., a somewhat better showing, but still not as good as the results in the experiments with lime and soda.

Some operators object to the chlorine process because of the odor of the chlorinated lime, others because of a fear that caustic soda will affect the skin injuriously. One very soon gets accustomed to the odor of the lime, so that it is not disagreeable, and the fear as to the injurious effect of the soda on the skin can be quickly dispelled by making trial of the process. It is possible, to be sure, to make the skin very sore by prolonged scrubbing with washing soda, especially if a new and stiff nail-brush of vegetable fibre is used, but this is not the way in which it is advised to use the soda. I have repeatedly used the lime and soda three and four times in a day without in any way irritating my skin, which, by the way, is thinner than the average. Permanganate and oxalic used once a day for several days in succession are sure to set up a dermatitis.

The permanganate and oxalic method has one advantage over all other methods of disinfecting the hands and that is, that it cannot well be slighted. When the hands are once dyed a deep brown color they must be decolorized, and in the process sterilized, and thus the patient is protected from the surgeon who hasn't an aseptic conscience. But as such surgeons have no just right to operate and, fortunately, are becoming scarcer every day, this property of the permanganate and oxalic will soon cease to be an advantage.

I have no bacteriological tests of my own to present in support of the lime and soda method but from a clinical experience of its use of over a year and a half I am unqualifiedly in favor of it.

In closing I should like to say once more that the hands should be always kept clean, relatively aseptic, and that it is nearly as important to wash the hands after an operation as it is before.

Clinical Department.

TWO CASES OF INFANTILE BLADDER TREATED BY GRADUAL DISTENTION.[1]

BY GEORGE HAVEN, M.D., BOSTON.

INCONTINENCE of urine is very frequent in children, but usually does not persist after the latter part of childhood. Little is known regarding the cause in the earlier years, but it is commonly attributed to overacidity of the urine, habit, debility, etc.

The treatment of incontinence in the early years of childhood is unsatisfactory, and is directed, as a rule, to reducing irritation at the neck of the bladder, and to general hygienic principles. The few cases which persist after puberty have been the opprobria of the physicians, for the reason that in few of these cases has the size of the bladder been taken into account. It is very fair to suppose that in a majority of these cases where the health of the patient is all that can be desired, and where the urine is normal, a contracted bladder space is responsible for the unpleasant condition. The normal capacity of the bladder is hard to determine, but various observers place the amount which the bladder should hold at between twelve and sixteen ounces, and under pressure at from fifteen to twenty ounces. Bladders have ruptured in the cadaver under a pressure exerted by from a quart to three pints of water.

The two cases which I have to report occurred in girls of eighteen years of age. Incontinence had been present from birth, and the bed had been wet almost every night. Their condition was pitiful, as they were unable to visit, go to the theatre, or spend a night in a bed unprotected by a rubber blanket.

CASE I. Miss R., age seventeen and a half years, had passed urine in bed every night from birth, and was unable to retain it longer than one hour during the day. Treatment was begun the 29th of March, 1890, and was continued until August 30th of the same year. She was seen every other day, and the bladder was distended by injecting into it a four-per-cent. solution of boracic acid to the point of great physical discomfort. The bladder at first held eight ounces under pressure. On May 8th nineteen ounces were injected, and on May 21st twenty ounces were introduced. This treatment was continued, and on the fourth of June, 1892, she reported that she could hold her urine from five to six hours during the day, and almost always during the night. A later report from her is most satisfactory, as she is perfectly well, having no trouble by day or night.

CASE II. Miss C., eighteen years old, was referred to me by Dr. T. M. Rotch on the 19th of November, 1898. She had wet her bed constantly from her earliest years, and was somewhat depressed by her condition. The bladder held about three and a half ounces of water, and six ounces caused distinct pain and discomfort. The treatment consisted of injecting a four-per-cent. solution of boracic acid into the bladder until the discomfort was so great that no more could be held. It was retained in the beginning from ten to fifteen minutes, and later from twenty to thirty minutes. At first the maximum amount was not over eight ounces. The bladder was distended every other day, and at the time of writing the patient has had sixteen days of immunity from incontinence, and the bladder holds about twenty ounces under pressure.

The only instruments needed are a male catheter cut down to about five inches, a piece of rubber tubing to connect it with the end of a Davidson syringe, and a solution of boracic acid. The resistance of the bulb to pressure is a very good guide to the pressure in the bladder.

The treatment of contracted or infantile bladders by gradual distention was, I believe, first spoken of by Dr. Sims the younger, and he has reported one or two cases in the *American Journal of Obstetrics* with very favorable results. Cases of infantile bladder are rare, possibly because they are very often overlooked, and the condition remains unrelieved, although treated by drugs, etc. It is a pathological condition, and fortunately, as the bladder is elastic, can be overcome by dilatation.

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[1] Read before the Obstetrical Society of Boston, March 21, 1899.

I have no record regarding the internal appearance of the bladder in the first case. In the second case the bladder was absolutely normal.

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Medical Progress.

REPORT ON PROGRESS IN PHYSIOLOGICAL CHEMISTRY.

BY H. F. HEWES, M.D., BOSTON.

(Concluded from No. 22, p. 524.)

THE FORMATION OF ALLANTOIN AS THE RESULT OF NUCLEIN METABOLISM.

Of the amount of nitrogen contained in the nuclein, rich substances, as calf's thymus, ingested by man, Weintraud found that a trace only (one-fifth to one-fourth per cent.) appears in the urine in the form of uric acid. A part, perhaps the greater part, is transformed to urea. There can be no questions from the investigations of Weintraud, Frerichs, and others that large amounts of uric acid are thus further oxidized in the system.

A part also appears in the urine in the original form of xanthin bases, xanthin, hypoxanthin, etc.

Heretofore these substances, urea, uric acid and the xanthin or alloxur bases, have been considered as the only important nitrogenous end products of the metabolism of nuclein in the animal body. Minkowski,[28] however, in some very recent investigations has shown that still another end product from this substance may appear in the urine.

In the urine of dogs fed with a substance rich in nuclein (calf's thymus) this observer found as a constant appearance, besides the above-mentioned nitrogenous products, still another organic nitrogenous substance, which upon analysis proved to be allantoin. This allantoin is an oxidation product of uric acid. It has been found in the urine of mammals, even of man, by Salkowski and others. But, as a rule, it has been entirely overlooked in investigations of the nitrogenous excretions, the nitrogen not found as uric acid or alloxur bases being all computed as urea. These observations of Minkowski's show that in dogs with nuclein feeding this allantoin appears in large amounts in the urine, while the uric-acid excretion is but moderately increased.

In men, under the same conditions of nuclein feeding, Minkowski found a markedly increased uric-acid excretion and no allantoin. Dogs fed with allantoin show a marked increase of this substance in the urine. Men fed with allantoin show no allantoin in the urine. The substance is here probably oxidized to urea.

This observation of Minkowski's is of great importance in the investigations of this question of nuclein metabolism. The increased allantoin excretion apparently has the same significance in dogs under nuclein feeding that the increased uric acid has in man. Allantoin is not an important element in the normal nitrogenous excretions of man, but may be found to be so in pathological conditions.

THE CONSTITUTION OF THE SIMPLEST PROTEIDS.

Of the three classes of organic compounds which enter into the constitution of living substance, the fats, carbohydrates and proteids, two only, the fats and carbohydrates, have up to the present time been thoroughly understood as regards their chemical constitution and the method of their formation. The determination of the constitution of the third, the proteids, has been one of the most difficult problems of physiological chemistry. The investigations of Kossel[29] during the last few years have, however, done much to solve this question, and will in all probability when completed place our understanding of the nature of these proteids upon a level with that of the fats and carbohydrates.

Among the decomposition products of proteids and proteid substances are some certain basic decomposition products which are common to all proteids. We can assume therefore that these substances form the nucleus of the proteid molecule, about which the various proteids are built up, or at least that there is a definite atom complex in this combination of ultimate constituents which forms this nucleus. To determine the constitution of this nucleus we must investigate those proteid compounds in which these common constitutents, the basic products, are present in their greatest purity. Such simple proteids Kossel has found in the protamines, compounds obtained by him, from the spermatozoa of the salmon, sturgeon, and herring. These protamines are constituents of the nuclei of these sperm cells, being combined with nucleinic acid to form the chromatin of the nuclei.

According to Kossel, clupein, the protamin obtained from the herring sperm, has the empirical formula $C_{30}H_{57}N_{17}O_6$.

The atom complex of protamin is present in all proteids. The protamin contained in these proteids is the source of the common basic decomposition products which represent the nucleus of proteid substance. Thus Kossel in investigating the constitution of this simplest proteid, protamin, finds that upon decomposition it yields three definite basic products, which he names the hexon bases. These are: lysin, $C_6H_{14}N_2O_2$; histidin, $C_6H_9N_3O_2$; arginin, $C_6H_{14}N_4O_2$. The protamin from the herring sperm, clupein, contains one molecule of lysin, one molecule of histidin, and three molecules of arginin. This gives a formula of $C_{30}H_{65}N_{17}O_{10}$ for the protamin, or the empirical formula of clupein plus four molecules of water $(C_{30}H_{57}N_{17}O_6 + {}_4H_2O)$.

If we accept Kossel's premises that the atom complex of protamin is a constituent of all proteids, these investigations lead us to conclude in regard to the nucleus of the proteid molecule, or the simplest proteid, *first*, that it is some base-yielding combination of three hexon bases, histidin, arginin and a base of the chemical grouping of lysin; *second*, that it gives the biuret reaction; *third*, that it is split up by the action of trypsin.

Upon this nucleus the various proteid compounds are formed. The first group consists of the simplest proteids, as protamin, which contains the base-yielding group alone. In the second group we have this nucleus with the addition of monoamido acids of the aliphatic series, leucin, amido-valerianic acid, etc. In the third group we have the sulphur-free proteids, as the proteids of silk. In the fourth, the sulphur compounds, etc.

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[28] Minkowski: Archiv f. exp. Pathologie und Pharmakologie, Bd. xli, H. vi, December, 1898. Untersuchungen zur Physiologie und Pathologie der Harnsäure bei Saugethieren.

[29] A. Kossel: Zeitschr. f. phys. Chemie, 1898, vol. xxv, p. 165, and vol. xxii, p. 176.

This investigation of Kossel's reveals some striking similarities in the structural methods of the proteids and carbohydrates.

Thus as by hydrolysis of the higher polysaccharides we get finally the simple hexoses, so by hydrolysis of the higher protamines, as protone (protamine-peptone), we get the simple hexons.

In the series of these simplest proteid constituents, the hexons (if we add leucin to our group of hexon bases), we have a perfect series in which six carbon atoms are combined with increasing numbers of nitrogen atoms. Thus

Leucin, $C_6H_{13}NO_2$,
Lysin, $C_6H_{14}N_2O_2$,
Histidin, $C_6H_9N_3O_2$,
Arginin, $C_6H_{14}N_4O_2$.

This plan is similar to that of the grouping of most carbohydrates where groups of six carbon atoms serve as the unit of formation. A further investigation of the subject will doubtless throw much light upon the fundamental relations of these two classes of substances.

CHLORIDE METABOLISM IN PNEUMONIA AND ACUTE FEVERS.[80]

This research confirms the generally accepted observation that during an attack of croupous pneumonia the chlorides in the urine are greatly diminished and may entirely disappear. There is a true retention of about two grammes per diem in the body. This is succeeded by an excessive secretion of chlorides, beginning one to two days after the crisis. The degree of diminution varies, but has no relation, as far as the author could determine, to the intensity of the fever, the extent of lung surface apparently involved, or the concomitant albuminuria. Abundance of chlorides would negative the diagnosis of pneumonia, but decrease of chlorides in the urine may occur in other diseases, with an associated acute febrile condition, as typhus and acute rheumatism. In malaria the chlorides are increased, probably from increased arterial pressure in the kidney during the pyrexial stage of that disease. The absorption of chlorides goes on normally in acute fevers; no vicarious excretion save a slight increase of chlorine salts in the sputum occurs. All views upon the cause of the retention of chlorides are merely speculative.

THE BEHAVIOR OF PHOSPHORUS-CONTAINING PROTEIDS IN METABOLISM.[81]

Phosphorus is introduced to the body in the form of inorganic salts, the phosphates, and in the form of organic phosphorus compounds, as the nucleo-albumin of the cell nuclei of cellular tissues used as food. It has been an open question from which of these sources the tissues draw their supply of phosphorus, whether from a combination of the phosphate phosphorus with phosphorus-free proteids, or from the organic phosphorus compounds. *A priori* we should expect nature to employ the latter method, avoiding the synthesis. But there are experiments which prove that the first or synthetical method is employed in certain conditions. It does not follow from these results, however, that the second method is not utilized also, or even that it is not preferred where possible.

Steinitz has lately reported a series of investigations upon the subject which demonstrate that this second method is utilized. The author proved conclusively that the exclusive ingestion of organic phosphorus compounds (proteids containing phosphorus) leads to the laying down of phosphorus in the tissues. Also that more phosphorus is accumulated in the tissues from a given amount of phosphorus thus combined than from the same amount given as inorganic phosphates and built up with free proteids in the body. Animals were fed with proteids rich in phosphorus, as casein and vitellin — no inorganic phosphates being included in the food. Full analyses of the intake and output in the urine and feces were made. Control experiments were made with myosin obtained almost free from phosphorus. More phosphorus was retained under the casein or vitellin feeding than under the myosin, or under the feeding with phosphorus-free proteids plus inorganic phosphates.

THE DEPOSIT OF IRON IN THE LIVER AND SPLEEN IN MALARIA.[82]

Some observations of Dutton upon the iron content of the liver and spleen of two cases of malaria are of interest in showing the enormous increase of iron which may occur in these organs in this disease. The following are the results compared with those obtained by Quincke in the normal.

	Milligrammes iron per 100 grammes of organs.	
	Liver.	Spleen.
Healthy case 1 . .	30–40	253
Healthy case 2 . .	81	144
Malarial case 1 . .	208	1,135
Malarial case 2 . .	440	1,325

FORMATION OF ANIMAL FAT.

Lummert[83] has made some experiments to determine the quantity and nature of the fat elaborated by animals from carbohydrates, when fed solely upon the latter and proteid foods from which all fat was excluded. As the results of extended researches indicate that animals are not capable of elaborating fat from proteids, it is clear that all the fat formed upon the above diet must be derived from the carbohydrates. Each animal was starved to deprive the fat cells of their contents, then fed upon flesh, rice-starch, casein and meat extract. Ducks and geese increased in weight upon this diet, but formed very little adipose tissue. Dogs, on the other hand, produced large quantities of fat, which upon analysis gave values showing the fats formed to consist of tri-glycerides of palmitic, stearic and oleic acids, mixed in proportions similar to those characteristic of other natural fats.

URIC-ACID CRYSTALS.

Ebstein[84] stated that after treating crystals of uric acid or urinary gravel with dilute alkali the pigment is removed and the crystals retain their original form and power of double refraction. These crystals give no proteid reaction. Moritz and Mendelssohn, however, claim that the crystals have a stroma of substance of a proteid nature.

Ebstein has reinvestigated the subject. His investi-

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[30] Hutchison: Journal of Pathology and Bacteriology, 1898, vol. 5, p. 406.

[31] F. Steinitz: Pflüger's Archiv, 1898, vol. lxxii, pp. 75–104.

[32] J. Dutton: Journal of Pathology and Bacteriology, 1898, vol. v, pp. 331–339.

[33] Lummert: Pflügers Archiv, 1898, 71, 176–208.

[34] Schreiber: Virch. Archiv, 1898, 153, p. 147.

gation confirms the results of Moritz, that after dissolving out the uric acid with a solution of lysidine and tannic acid, a "shadow" of the crystal remains which is optically inactive. The so-called shadow, however, gave none of the proteid reactions. It can be obtained from uric acid artificially crystallized from an albuminous liquid. After purification of the uric acid by repeated recrystallization, this does not occur.

PRESENCE OF ORGANIC CHLORINE IN THE URINE.

The question as to the existence of chlorine in the urine in the form of an organic compound, and not therefore being directly precipitated by the nitrate of silver in the quantitative tests for chlorine, as well as in the form of chlorides, has been much investigated and discussed.

Vitali [35] demonstrates in his investigations, which appear to be free from sources of error, that small amounts of chlorine in organic combination exist in urine. The nature of the organic compound was not determined.

ORGANIC PHOSPHORUS IN URINE.

Several observers have determined similar facts in regard to the phosphorus in urine, namely, that all the phosphorus is not combined as phosphoric acid, but that there are organic compounds like glycero-phosphates present.

Oertel [36] in his investigations first estimates the total phosphorus as phosphate by fusing the dry residue of the urine with potassium hydroxide and nitrate, then the organic phosphorus is similarly estimated, after precipitating the inorganic phosphates with calcium chloride and ammonia. The results of the investigations show that of a day's urine content of total phosphates of two grammes, 0.05 gramme comes from the organic phosphates.

In this same connection, Jolly [37] has determined that a part of the metallic phosphates in the urine is held in such intimate association with certain nitrogen compounds, that it is not precipitated by the ammoniacal magnesium mixture used in the test for phosphates.

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Reports of Societies.

THE INTERNATIONAL TUBERCULOSIS CONGRESS IN BERLIN.

(Concluded from No. 23, p. 559.)

The various representative speakers who opened the proceedings of the Congress were brief but eloquent, and were extremely well received. Their short addresses in German, French and English emphasized the cosmopolitan character of the Congress at the outset, and were the best evidence of the world-wide interest the question of the prevention of tuberculosis has aroused. In addition to the speakers previously referred to, Maragliano, who spoke in German, represented Italy, and Kurz von Dubrow, Austria. Hungary was represented by Professor Koranyi, and Russia by Bertenson. For the foreign delegates, of whom there was an extremely large number, seats were reserved at the federal council tables, which stand on a sort of rostrum. The introductory addresses were delivered in the official alphabetical order of the name of the state, thus, the representative of the United States of America spoke first. After him came Professor Brouardel, who spoke in French; his congratulations to Germany on the fact that her best men in science were still living were cordially received. England was well served by Prof. Sir Thomas Grainger Stewart, who spoke as follows:

Your Imperial Majesty, Mr. President, my Lords, Ladies and Gentlemen: I feel it a great honor that I should be called upon to speak on behalf of the representatives of my country on this occasion, although I am well aware that there are some who might much more adequately have discharged the duty. When one thinks among others of my friend Sir Hermann Weber, who, although a German by birth, has won such distinction among us that he has received the honor of knighthood at the hands of our most gracious Queen, of whom our whole empire thinks with such affection, respect and gratitude to-day — when one thinks of him one feels that he might well have been asked to speak our congratulations, but I am assured that he has declined to undertake the duty, and so I obey the call of the committee. I do so the more willingly because of the close links which have long connected the University which I represent and the great University of Berlin. It has for very many years been customary for graduates of Edinburgh to come to this city in order to sit at the feet of the great leaders of medicine here; and so forty years ago it was my privilege, after studying at home under Goodsir and Syme and Simpson and Christian and Hughes Bennett, to come here and enjoy the instructions of the great masters of Berlin. Even then we all listened with delight to the teaching of Virchow, of von Graefe, of Schönlein, of Traube, of von Langenbeck, and of others whose fame was in all lands. There were great men in Berlin in those days; but I return to it with like pleasure now, for there is no need to dwell merely on the praises of the past. I am not one who is prepared to take up the attitude of those who

Klagten wie alles besser
Gewesen zu unserer Zeit.

No; with men like our President, von Leyden, and Koch, and so many more, and with my old master, Virchow, to whom I owe so much, still in the midst, I can turn here with new hope of instruction and suggestion in regard to the mighty war to which the world is awaking against tuberculosis, the most deadly enemy of our race. In the name, then, of England and Scotland and Ireland and the British Empire, I desire to offer our respectful congratulations on the auspicious opening of the Congress, and we pledge ourselves that no effort shall be wanting among us to bear our part in the great campaign on which the whole world is entering. In our country as here we are profoundly in earnest, and as here the highest in the land are lending their influence and giving their help, so with us, not merely the members of our profession, but H. R. H. the Prince of Wales, and leading statesmen and philanthropists are cordially co-operating in this great crusade. One fact I should desire to mention is that in many parts of our island the open-air treatment of consumption is being carried out. Even in Edinburgh, where we are not unfamiliar with rain and mist and east wind, the open-air treatment is carried out in the Victoria Hospital as it is on the beautiful slopes of the Taunus, and with results which appear as satisfactory as those of Dr. Dettweiler and the other workers in German sanatoria. Again I wish for the Congress the most eminent success.

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[35] Vitali: L'Orosi, 1897, 20, pp. 114 and 145.
[36] Oertel: Zeit. physiol. Chem., 1898, 26, p. 123.
[37] Compte rend., 1898, 127, p. 118.

His speech was most cordially received and Professor Hirschberg afterwards remarked that Prof. Grainger Stewart had taught the Germans by his speech to realize how well they understood English; in fact the Congress was cosmopolitan if not, as some sticklers for accuracy have argued, strictly international. One result has been that, though there was but one official language — German — there was much friendly mutilation of various languages. Science has had a chequered career. In ancient days it was a garden pastime of Greek philosophers, in the Middle Ages it endured persecution and martyrdom, to-day it is recognized in high places, and has at its shrine wealth and rank, princes and emperors. If this means anything, does it not mean this, that the world is beginning to realize the brightest light which is offered for the guidance of suffering and toiling humanity is largely derived from the laboratories of science? The acme of the triumph of medical science was attained on Friday, when the Kaiser sent the Congress a telegram. The Kaiser's telegrams are historic, and this one was read to the assembled company standing. Along with good wishes for the success of the work of the Congress it expressed the hope that the Congress might help to suppress that terrible scourge, tuberculosis.

On Wednesday evening the Burgomaster gave a reception to the members of the Congress and their friends, which was largely attended, and this was followed by a promenade concert in the Exhibition Gardens.

THURSDAY, MAY 25th.

On Thursday the business of the Congress began punctually at nine o'clock, Prof. B. Fränkel, of Berlin, being in the chair. Perhaps the two most important papers of the day were those by Prof. C. Fränckel, of Halle, on

THE MODE OF INFECTION IN TUBERCULOSIS,

and that by Professor Virchow on

THE PREVENTION OF TUBERCULOSIS AS REGARDS ARTICLES OF FOOD.

SECTION II. — ETIOLOGY.

Flügge (Breslau) introduced the subject by an address on the relation of the tubercle bacillus to tuberculosis. After a historic survey of the research connected with the subject, he affirmed that there was no longer any room for doubting the view that the tubercle bacillus is the only direct cause of all the different kinds of human tuberculosis, as well as of animal (especially bovine) tuberculosis. Two chief objections had been made to Koch's theory: (1) That the expectoration of consumptives does not always contain tubercle bacilli; and (2) that bacilli found to be acid-proof in the staining process are sometimes found in non-tuberculous organs. But the first objection was answered by the experience that the bacilli perished very speedily outside the organism, and the acid-proof bacilli of the second objection were by no means identical with tubercle bacilli, from which they differed in biological and staining properties. Tubercle bacilli were parasites which did not flourish outside the animal organism, and which required an artificial nutritive medium for their development. In such cultivations they underwent morphological changes, and lost virulence more or less speedily. Thus there might be non-virulent tubercle bacilli, which had no infective power; but it would be unjustifiable to make this fact responsible for doubts as to the connection of cause and effect between the bacilli and the disease.

Prof. C. Fränckel, of Halle, said that since Koch's great discovery of twenty years ago, many — though not all — the problems connected with the subject had been solved. It was known now that the tubercle bacillus did not flourish outside the animal organism. From it, therefore, all sources of infection arose. The meat and milk of tuberculous cattle, the secretions of tuberculous lesions or mucous membranes, and, above all, the sputum of consumptives, spread the bacilli. Each animal and each human being, in the secretions of which living tubercle bacilli could be found, gives occasion for the spread of the disease. But this fact should not cause groundless fears, for it was only where the tuberculous germ was in open communication with the outer world that there was any danger to healthy persons. There was none, for instance, in cases either of peritoneal or of meningeal tuberculosis, nor even in cases of phthisis in the first stages, that is, without penetration into the ramifications of the bronchi. Even where this was the case air quietly expired was free from bacilli. It was only when the contents of the cavities were emptied by coughing that tubercle bacilli were ejected in tiny masses or drops of expectorant material. But these bacilli had no great power of resistance outside the organism; sunlight soon destroyed them; putrefaction in six or seven weeks; desiccation in six to ten months. They were only found in the immediate surroundings of phthisical patients; when their producer was removed they disappear. The supposed ubiquity, therefore, as had been conclusively proved by Cornet, does not exist.

Mixed Infection of Phthisis.

Professor Pfeiffer (Berlin) said that tuberculosis, especially of the lungs, rarely remained without complication for any length of time. Generally other bacteria — chiefly streptococci — joined their action to that of the tubercle bacilli. Their mode of entrance into the lungs was generally from the nose or the upper air passages. Such mixed infections gave the clinical configuration known as "consumption," and they caused the so-called "hectic fever." Probably the poisonous metabolic products of the streptococci produced the fever. As such persons were, to a certain extent, sources of danger to cases of uncomplicated lung tuberculosis, it was advisable in sanatoria to separate patients with fever from those without fever.

Heredity, Immunity and Disposition.

Professor Löffler (Greifswald) observed that tuberculosis might heal spontaneously. Congenital tuberculosis was extremely rare; in all such cases tuberculous disease of the mother's generative organs had been found. Tuberculosis of the father had no part in the hereditary transmission of the disease. There was no proof as yet of immunity to the disease, nor of congenital or hereditary disposition to it; but it was very probable that other diseases of the respiratory or digestive organs, as well as disturbances of nutrition, favored tuberculous infection.

The discussion was opened by Professor Birch-

Hirschfeld (Leipzig) with remarks on the first stage of phthisis. His post-mortem examination of 32 cases of latent primary lung tuberculosis showed that in 28 of the cases the disease had its primary origin in the mucous membrane of one of the medium-sized bronchi.

M. Lannelongue (Paris) gave an account of his animal experiments in connection with traumatism and tuberculosis. They supported the view that in scientific experiment, as in clinical experience, it was rare for the tuberculous process to be localized at the spot of a traumatic lesion.

Professer Brieger (Breslau) discussed "hypertrophy" of the tonsils, which, he said, was wrongly considered as a symptom of scrofula, but which was capable of producing the chief and most typical symptoms of scrofulosis. Under the appearance of hypertrophy of the tonsils, however, tuberculosis might — though rarely — conceal itself. Latent tuberculosis of the tonsils was not of much importance in relation to the development of lung tuberculosis, but was etiologically important for tuberculosis of neighboring organs, such as the middle ear.

M. Courmont (Lyons) gave an account of his researches with the "agglutination" method, using homogeneous cultures of the Koch bacillus. Of 186 tuberculous cases, he obtained the agglutination reaction in all but 10, these being advanced cases (cavities and fever). He concluded that the agglutination method gives excellent results in the diagnosis of latent and masked cases.

Dr. Hesse (Dresden) described a new modification of nutrient agar-agar.

Dr. Max Wolff (Berlin) described animal experiments for the purpose of determining the heredity of tuberculosis. Only one descendant of the infected animals, 60 in number, was found to be tuberculous.

M. Courmont (Lyons) gave an account of two typical tuberculous cases (human) in which the bacillus of Koch was not present, but a bacillus very similar, though by no means identical. He described the growth, staining qualities, etc., of the bacillus.

In reply, **Professor Flügge** (Breslau) acknowledged that it was sometimes extremely difficult to find the bacilli of Koch, but declared his conviction that they were present in every case of tuberculosis.

SECTION III. — PROPHYLAXIS.

General Measures for the Prevention of Phthisis.

Dr. Roth (Potsdam) expressed the opinion that, since tuberculosis was an infectious disease, the sanitary police should carry out preventive measures. The chief danger to be guarded against was inhalation of the expectoration of patients. The knowledge of this danger should be spread and popularized as largely as possible, and the masses should be instructed by every available means to recognize the first symptoms of consumption and to take proper precautions. In sanatoria he recommended the use of spittoon bottles made of strong material, which should be burnt and replaced by new ones every day.

Prevention of Infantile Tuberculosis.

Professor Heubner (Berlin) observed that tuberculosis was not congenital. Among the 800 infants of his clinic, none of those under a year old were tuberculous, but 26 of those from three to four years of age were infected. Infantile tuberculosis was, in the great majority of cases, acquired by inhalation, therefore children should be carefully guarded against contact with tuberculous patients. Children of tuberculous parents acquired the disease more readily than others, and the greatest care should be taken to strengthen them to resistance by open-air treatment, careful feeding, cold baths, etc.

Marriage.

Professor Kirchner (Berlin) discussed the dangers which attend the marriage of tuberculous persons. Such marriages were dangerous for the patient, for the healthy husband or wife, and for the children. The danger was greater among the poor (crowded dwellings, etc.) than among the well-to-do. Public opinion should be influenced to prevent (1) the marriage of youthful persons who from appearance and family history seemed inclined to tuberculosis; (2) the marriage of tuberculous patients, unlesss two years had elapsed since symptoms of phthisis had been observed. Married patients should be carefully taught that they were a danger to the other members of the family, and instructed in all the means at disposal for mimimizing such danger.

Houses, Workshops, and Public Vehicles.

Professor Rubner (Berlin) dealt with the prophylaxis of tuberculosis in dwellings, workrooms, and public traffic. The hygienic defects of poor people's dwellings were, he said, well known, and they could only be mended by building regulations, improved legislation as to house building, and by the appointment of house inspectors. In workrooms, factories, etc., greater precautions against the breathing of dust, etc., should be exacted by law. Medical inspectors should be careful to have all tuberculous persons excluded from mills, workrooms, etc., thus protecting the other work-people from infection. As regards public traffic the public should be requested by placards, etc., not to spit on the floors of omnibuses, railway carriages, etc., and all public conveyances, especially sleeping-cars, should be most carefully cleaned after use.

Hospitals.

Von Leube (Würzburg) in discussing prophylaxis in hospitals, said that the most delicate cleanliness was necessary. The patients should expectorate into special spittoons, and when coughing should always hold a pad of cotton wool (afterwards burnt) before the mouth. Servants should wear muslin veils or masks while making the beds, cleaning the floors, etc. Though it was an open question whether the sweat contained tubercle bacilli, doctors and nurses should take the precaution of disinfecting their hands after touching tuberculous patients. Where proper attention was given to prophylactic measures, it was not strictly necessary to isolate tuberculous patients in general hospitals. But of course where they could conveniently be separated from the other patients it was advisable to do so. The airiest, lightest wards should be chosen as "phthisis wards," and there should be verandas to enable the patients to lie in the air.

The Prevention of Tuberculosis from Articles of Food.

Professor Virchow said the chief spreaders of the disease were cattle by their meat and by their milk, then pigs, and, lastly, poultry. The existing German regulations for the examination of meat in slaughter houses would suffice if made general. As regards the introduction of live cattle from other countries, the animals should be subjected to the tuberculin test. The greatest danger lay in milk. Cow's milk might contain bacilli, or they might find their way into the milk from the udder, which was sometimes studded with foci. The only rational remedy for this enormous danger would be the destruction of tuberculous cattle. But as this was not feasible at present, the danger must be minimized by boiling or sterilizing milk. Pigs were more subject to tuberculosis than had been supposed. Its chief seat was the lymph glands in the wall of the neck (scrofula), but these parts could be excised if proper care be taken. The danger from poultry was not great, as their tuberculosis is not identical with human tuberculosis. Nevertheless, he considered that tuberculous poultry should be destroyed. In conclusion, Virchow disputed the dogma of congenital or inherited tuberculosis on the strength of his own pathological examinations. The existence of tuberculosis in unborn or new-born infants has never yet been conclusively proved. Infection took place after birth — it may be in the first days of life.

Other Papers.

Time being short, a motion to close this section without a discussion was carried. Thus a number of papers had to be passed over unread, of each of which, however, a short synopsis has been published in the *Journal* of the Congress. Among these was one by Dr. Hambleton (England) on the Prevention of Pulmonary Tuberculosis, recommending systematic physical exercises, and especially development of the chest. Another by Dr. Donohue (Syracuse, New York) on Prophylaxis, in which he stated that tuberculosis cuts off 12,000 inhabitants of the State of New York yearly, and that infected milk had a great share in disseminating the disease. Another by Dr. Obermuller (Berlin) on the Tubercle Bacillus in Milk and Butter, in which he disclosed a really appalling state of things connected with the ordinary breakfast table, as a large percentage of the milk and butter samples examined (taken from various sources) were found infected with tubercle bacilli. Another paper was by Dr. Maar (Auspach) on Bovine Tuberculosis and the Hygiene of the Stable in Relation to Human Tuberculosis.

SECTION IV. — THERAPEUTICS.

Curability of Pulmonary Tuberculosis.

In introducing this subject Professor Curschmann (Leipzig) said that complete cures, in the strict histological sense, were very rare. Cessation of the process, with formation of scars and obliteration of the attacked part of the bronchial tree was more frequent. Such cases might be called cures in a clinical sense. A still larger proportion of cases attained what might be called a "relative cure," that is, a lingering continuation of the process with fairly good general health. There had been undoubtedly great improvement in the results achieved of late years. This was due to the physical and dietetic system of treatment now widely used. The lung sanatoria gave excellent results — on the average about 20 per cent. of the patients showed permanent improvement. Of course, the earlier the stage of the disease and the smaller the area attacked, the greater the chance of cure. Therefore early diagnosis, especially of "latent" forms, was of the greatest importance. Climate had not the influence on recovery formerly attributed to it. The chance was favorable everywhere where the air was pure and the temparature not too changeable. The old theory of "immune zones" was no longer tenable. As regards mixed infection, experience was far too small to make it possible to speak with certainty of chances of success.

The Medicinal Treatment of Tuberculosis.

Professor Kobert (Rostock) said that experience had fully proved that there was no real specific against pulmonary tuberculosis; and, further, that in miliary tuberculosis and galloping consumption there was no known therapeutic method which could save the patient. Early cases of phthisis could be dealt with so successfully by the Brehmer (open-air) method where drugs were not required. In surgical cases (with the exception of those in which the lung was involved) iodine gave the best results. As to the use of drugs generally, it could only be said that cases must be treated according to their individual character. The narcotics — above all codein — were of great use in laryngeal cases. In emaciation and cachexia, artificial food, stomachics, and creasoted cod-liver oil were valuable. Febrifuges, such as pyramidon, should be employed in cases in which rest in bed and hydropathy did not succeed in lowering the temperature, and inhalations of essential oils (for instance, turpentine) in cases of putrid expectoration. In intestinal tuberculosis opiates and astringents do good service. The much-praised remedies — oil of camphor, cinnamonic acid, etc. — were not specifics, but acted favorably by exciting leucocytosis.

Treatment of Pulmonary Tuberculosis with Tuberculin and Similar Remedies.

Professor Brieger (Berlin), who spoke next, began by affirming that Koch's tuberculin preparations (the old and the new) must be considered specifics. They acted only on tuberculous processes and not on secondary infections, and experience had proved that early stages of the disease were frequently influenced favorably by tuberculin. Where this was not the case it was probable that the failure was due to the dose used being insufficient. Even cases complicated by secondary infection, as, for example, phthisis, were improved, and sometimes brought to a standstill, by tuberculin. Hence tuberculin should be used in lung sanatoria. As a diagnostic both in man and animals the old tuberculin was of the greatest value.

Climatic Therapeutics, including Sea Voyages.

Sir Hermann Weber[4] (London) read the paper on this subject.

The Hygienic and Dietetic Treatment of Pulmonary Tuberculosis and Sanitarium Treatment.

Dr. Dettweiler (Falkenstein) said that the treatment consisted essentially in a permanent air and rest cure, day and night, carried out with scrupulous care, and adapted to the state of each patient and the stage of the disease; in hardening the skin by proper application of air, water, and massage; in gymnastics, etc., in a system of feeding adapted to each individual case; in overfeeding to a certain extent, and the careful use of alcohol; in attention to the hygienic of the clothing and dwelling; in disinfection; in treatment of expectoration and cough. Great care should be exercised in the selection of the the directing physician of a sanitorium. Where all these desiderata were fulfilled patients need not leave their own country, but could be successfully treated in all climates not subject to extremes of cold and heat.

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[4] See page 552 of the Journal, No. 23.

In the discussion which followed **Professor Von Schroetter** (Vienna) exhibited two patients cured of severe laryngeal tuberculosis, one of whom had been under observation since 1890, and the other since 1885. They had both undergone tracheotomy. Both had been cured by the hygienic dietetic method, combined with remedies.

Dr. Sinclair Coghill (England) spoke on the rational treatment of cachexia.

Professor Winternitz (Vienna) recommended hydropathy as the most effective weapon in the fight against tuberculosis. The water used must be the freshest and coldest at disposal, as lukewarm water was much more trying than cold. Among 400 cases treated by him by hydropathy he had obtained improvement in almost 80 per cent.; in chronic cases, arrest and relative cure.

Dr. Landerer (Stuttgart) was convinced of the efficacy of cinnamon-acid injected either subcutaneously or intravenously. His experience extended over seventeen years, and embraced 110 cases, with 57 cures and 26 improvements.

An assistant of Professor Maragliano (Genoa) read some experimental contributions to the hygienic-dietetic treatment.

Dr. von Schweinitz (Washington) gave an account of experiments on animals with immunizing serum.

Professor Cervello (Palermo) recommended inhalation of formaldehyde vapor, which he had found extremely efficacious in assisting the natural healing process.

Dr. Maillart (Geneva) related the favorable result achieved in the Geneva Hospital during the winter of 1898–99 by the air cure.

Dr. Dimitripol (Bucharest) spoke of the treatment of nodular pulmonary consumption.

Dr. Petruschky (Dantzig) of treatment by Koch's tuberculin.

Dr. de la Camp (Hamburg) of body weight as the chief factor in compiling the statistics of cures and improvements.

Dr. Sarfert (Berlin) pleaded for the admission of surgical cases to sanatoria, as such cases were the greatest source of danger to families. He considered that operating-rooms should be provided in all sanatoria.

Dr. Egger (Basel) recommended the establishment of colonies in high altitudes, where needy patients might find paid employment, as high altitude was eminently favorable for the cure of tuberculosis.

SECTION V. — THE SANATORIA QUESTION.

Monument to Brehmer.

At the opening of this section **Professor Liebreich** (Berlin) rose to state that the Balneological Society, over which he presides, had decided to erect a monument to Brehmer, the originator of the sanatorium movement and founder of the modern open-air treatment. He proposed that delegates of the Congress should join the Committee of the movement. The proposal being unanimously accepted, the **Duke of Ratibor**, president of the Organizing Committee of the Congress, made a short speech welcoming Professor Liebreich's proposal.

The Congress and the Working Classes.

The business of the section was then opened by **Herr Gaebel** (Berlin), president of the Imperial Insurance Department, who said that the sanatoria movement was intended chiefly for the benefit of the masses — the working population. But it was not enough to build sanatoria; it was even more important to interest the nation in these endeavors, and to enlighten the masses on the subject of the disease. It was satisfactory, therefore, to know that numerous working-men delegates were taking part in the meeting.

The Development of the Sanatoria Movement.

Professor von Leyden (Berlin) gave an address, in which he traced the history of the cause from 1880, when Hogt, of Berne, made the first proposals for united effort. The next pioneers were Goldschmit, of Reichenhall, and Dettweiler, and then von Leyden himself, who treated the subject publicly in 1888. In 1892 the People's Sanatorium in Falkenstein was opened. Then the Imperial Insurance Department joined the movement, and erected a sanatorium for insured persons in the Harz Mountains. In 1896 the Berlin-Bradenbug Sanatoria Society was formed, and began to build the sanatorium at Belzig. The Red Cross Societies came into action at the same time, and the Grabowsee Sanatorium was their creation. Finally these separate endeavors were united by the foundation of the Central Committee for the erection of sanatoria for pulmonary tuberculosis, of which Prince Hohenlohe, the Imperial Chancellor, is president. At the present moment there were thirty-three people's sanatoria in Germany, either in full action, or approaching completion. Branch societies watched over the families of the patients and negotiated with a view to finding work for discharged patients. But the greatest enterprise of the Central Committee had been the calling of the present Congress.

Financial Considerations.

Landesrath Meyer (Berlin) observed that modern science having proved that lung sanatoria were of the greatest value in the cure of pulmonary tuberculosis, the need for their establishment had become so great that it could not be satisfied by the isolated action of philanthropic societies. In the long run the mainspring of such undertakings must ever be a legitimate vested interest. To secure health and working power for their sick was strongly in the interest of (*a*) employers who wished to secure and preserve valuable workers; (*b*) sick clubs who had a financial stake in the quick restoration to health of their subscribers; and (*c*) the incapacitation and old-age insurance department, and the insurance societies, trades unions, etc., which had to pay out annuities to all those who were incapacitated from work by the disease. The State itself had the deepest interest in the movement, which was an aid towards raising the health standard, and thus the prosperity of the nation. By united action on the scale indicated, it will become possible to maintain at least one sufficiently large sanatorium in every province of Prussia.

Dr. R. Friedeberg (Berlin), medical adviser to the Berlin Sick Clubs' Central Committee, spoke of the work to be done by sick clubs in the sanatoria movement. The classes to which the sick club members belonged were ravaged by consumption. Almost fifty per cent. of the deaths and as many incapacitations from work were caused by the disease. A sufficient number of sanatoria ought to be built to obviate the long period of waiting for a free bed. It is of the utmost importance that the masses should be enlightened as to the dangers of tuberculosis, and taught the rudiments of hygiene. He proposed that popular lectures on such subjects should be held at sick clubs' meetings, hygienic tracts distributed, and similar measures taken to disseminate information. He urged further that a yearly examination of every sick-club member should be made obligatory, and that sputum examinations should be free of charge in all the Provincial State laboratories.

The Planning of Sanatoria.

Herr Schmeiden (Berlin), State Architect, who discussed the plans of sanatoria, said that a people's sanatorium should be for one sex, and for one class only. The situation should be sheltered and sunny, with wooded neighborhood, without dust, smoke or soot. That is to say, there should be no factories, etc., in the neighborhood. There should be a good and plentiful water supply, and a good system of drainage. The building height should not exceed two stories above the ground floor. The kitchen should be placed in a separate part of the building, and the washhouse in a building of its own. Bedrooms should not be used as living rooms. The minimum of air space should be thirty cubic metres per bed. Single rooms should be provided for ten per cent. of the inmates. The baths should not be in the cellar, but in warm, dry rooms. The walls, floors, and ceilings should be faced with impervious material easy to clean. Central heating, electric lighting, taps with pure drinking water should be provided, as well as arrangements for getting rid of sputum, and for sterilizing the clothes before being sent to the laundry.

Staff-Surgeon Schulzen (Berlin), who discussed the arrangement of sanatoria, advocated the pavilion system. In summer Doecker's movable barracks were useful for extension. The bedrooms should contain two to four beds, but a small number of single rooms should be provided. Meals should be taken in common, under the supervision of nurses. The nurses should be educated ladies. The average cost, counting 110 beds in a sanatorium, should amount to about three marks (3s.) a day. The results obtained in sanatoria, so far, were good, but the time had been too short to permit a final opinion to be formed. The results would be improved (1) by the more careful selection of patients, and exclusion of those in a late stage; (2) by extending the duration of the treatment; and (3) by the establishment of convalescent homes, where patients could, after their discharge from the sanatoria, take up work under favorable conditions. Directors of sanatoria should remain in communication with patients after their discharge, should receive yearly reports from them, etc, and should send in the results to a central office, where statistical lists would be made out. It is only by such co-operation and continued collaboration that genuine results can be reached.

The Families of Patients in Sanatoria.

Staff-Surgeon Pannwitz (Berlin) said that as absence of mental worry was a *sine quâ non* for the success of the treatment the patient's mind must be set at rest on the subject of his family's well-being, and his own chances of getting work when restored to health. These are ramifications of the great movement for which State organization cannot suffice, and in which the assistance of philanthropic societies will be of the greatest value.

The discussion was opened by Dr. Rufenacht Walters (England), who said that in England the open-air and hygienic dietetic treatment of consumption was not new, as it had been practised there for a long time. The modern movement for the establishment of people's lung sanatoria had taken root in England too, and before long such sanatoria would be erected. At present consumptive patients were received into (1) general hospitals, (2) special hospitals for chronic diseases, (3) convalescent hospitals, and (4) homes for consumptives.

Dr. Halbach (Bremen) recommended decentralisation, and the formation of local groups to organize the joint work of the State and of philanthropic societies.

Dr. Mayer (Frankenthal) contended that sick clubs should have the right to refuse membership to all persons who, being found tuberculous or inclined to tuberculosis, were employed in work likely to cause tuberculosis.

Professor Ewald (Berlin) said that the struggle with tuberculosis meant not only treatment of the disease, but also effective prophylaxis. Children's sanatoria at the seaside are the best safeguards, as twenty years' experience had proved them to be successful in conquering the initial stage of consumption and glandular disease. The erection of more such children's sanatoria was therefore earnestly desirable.

Dr. Salomon (Berlin) and Professor Baginsky (Berlin) shared Ewald's views on seaside sanatoria for children, and gave some details of the arrangements in existing institutions in Norderney, Wykon, Föhr, Zoppot, and Neufähr.

Dr. Sanchez-Rozal (Valencia) gave an account of the sanatorium near Valencia erected by national subscription for the free treatment of needy consumptives. Ten beds were to be reserved for German patients.

Dr. Weicker (Görbersdorf) read statistics of the 1,800 patients discharged from his people's sanatorium during the last four years, showing that the percentage of those able to work had increased from year to year. He pleaded for the organization of statistical lists on a uniform plan with the Imperial Insurance Department at the central office.

Dr. Predöhl (Hamburg) expressed the opinion, founded on the experience of 2,000 cases, that patients in the latter stages of tuberculosis should not be admitted to the sanatoria.

Dr. Reiche (Hamburg) gave figures to prove the good results obtained by the Hanseatic sanatoria; sixty-per-cent. of the patients discharged were able to take up work.

Professor Brouardel (Paris) said that in Paris the hospitals could not take in the number of consumptives who asked for admission. Generally more than half of these were obliged to wait — for months sometimes — before they could be admitted.

Dr. Cortezzo (Spain) recommended the Spanish seacoast, Dr. Vollmer (Kreuznach) spoke of the brine-bath sanatoria for children, and Dr. Vaughn (England) of English sanatoria.

Dr. Hohe (München) pleaded for the erection of hospitals for the middle classes.

Moharrem-Bey (Egypt) proposed the erection of international consumption hospitals, and offered the whole of his pecuniary resources in aid of the project.

Herr Goldschmidt (Berlin) affirmed that the trades unions acquiesced in the objects of the Congress.

CONCLUDING CEREMONIES.

At the end of this discussion the Duke of Ratibor made a short speech, in the course of which he thanked the Imperial Chancellor and all his co-workers for their indefatigable efforts, the usual votes of thanks followed, and after a "Hoch!" for the German Emperor and Empress, the Congress was officially closed.

ENTERTAINMENTS.

In the afternoon the Chancellor, Prince Hohenlohe, gave a garden party in the beautiful and historic grounds of his official residence, which was largely attended by the foreign delegates and members with their lady friends. Many distinguished Germans were present, and one of the Guards' bands provided most excellent music.

In the evening at the Kaiser's invitation a large number of the delegates, members and ladies went to the opera. The house was filled with a brilliant assembly of men and women. Many of the men wore uniforms, orders and decorations, and the large contingent of officers from the German Army Medical Service were conspicuous in their blue uniforms, gold lace collars and epaulets. A veteran brigade-surgeon from the Indian Medical Service who was among the guests remarked that the British Army Medical Corps might well take a lesson in the matter of smart uniforms from our German friends. Wagner's opera, "The Meistersingers," was played.

On Friday evening Professor and Frau von Leyden gave a brilliant reception in their beautiful house, to which a certain number of those taking a prominent part in the affairs of the Congress, as well as a number of the foreign delegates, were invited. Among the guests were Prince zu Hohenlohe, the Imperial Chancellor; Count Posadowski, Minister of the Interior; General Von Gossler, Minister of War; the Duke of Ratibor, and other eminent men and women, including the ambassadors of the United States, England, France, Russia, Austria, Hungary and Italy, and the Swedish minister. The reception had a semi-official character.

THE BRITISH AND COLONIAL DELEGATES.

Sir Herbert Maxwell stated that he was much interested in the comments of one of the Canadian delegates on the Congress and its object. This delegate said that the modern discoveries and doctrines with regard to tuberculosis as an indoor and infectious disease had enabled him to understand the incidence of phthisis among the inhabitants of the western part of Canada, where the people were not thick on the ground, and where the life would on the face of it appear to be a healthy one. The confined life of the Canadian winter, largely spent in almost entirely closed huts and houses, offered every condition for the development and spread of the disease; and so it happened that, when phthisis was once introduced into a family, it only too frequently spread among them.

THE JAPANESE DELEGATES.

Japan was largely represented at the Congress. Dr. Hayashikawa, one of the delegates, stated that Professor Kitasato, who studied for seven years with Koch, and who while with him largely contributed to the discovery of the tetanus bacillus, now has an excellent laboratory and hospital at Tokio. In the laboratory every branch of bacteriology is studied, but especially attention is devoted to leprosy. There are several other bacteriologists in Tokio, of which Ogata, Professor at the Tokio University, is the best known. Tuberculosis occurs in man and beast in Japan, but is not apparently as common among infants and children as in Europe. Cow's milk in Japan is invariably boiled before consumption. Scrofula and meningitis are believed to be more common than tabes mesenterica in children, but statistics are not numerous or very reliable. There are at present one hundred Japanese students studying medicine in Berlin, and in the Tokio University the only two European professors are German.

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THE OBSTETRICAL SOCIETY OF BOSTON.

MALCOLM STORER, M.D., SECRETARY.

Meeting of March 21, 1899, the President, Dr. Alfred Worcester, in the chair.

Dr. G. Haven reported

TWO CASES OF INFANTILE SMALL BLADDER TREATED BY DILATATION.[1]

Dr. T. M. Rotch: It is desirable that this class of cases should be recognized and treated after the manner that Dr. Haven has described. In the second case the usual forms of treatment had been tried thoroughly without any success. At one time I myself believed in dilating the urethra in cases of incontinence, as Simon suggested, and that was done in this case, naturally without any effect, as it did not reach the underlying cause. In early life action is of course largely reflex, and the function of controlling reflex action is a late development, and accordingly the best results would be obtained in these cases if treatment is deferred until after puberty. This second case, however, was not conspicuous for nervous hyper-irritability, and in her case treatment, if undertaken earlier, would probably have been equally successful.

Dr. J. R. Chadwick: I should like a little information as to the pathology of such bladders. The normal bladder does not contract, it merely collapses under abdominal pressure. I have, however, felt the diseased bladder contract down to a hard, pear-shaped mass. In dilating these small bladders I rather question your causing an actual growth of new tissue. I should be inclined to think that such bladders had never been fully distended, and that you distend them up to the normal.

Dr. Haven thought that there was an actual increase in size. In reply to a question, he stated that there was incontinence only when the bladder was full, and then an imperative dribbling.

Dr. F. H. Davenport: I have never seen cases like this in young women. The incontinence so often seen in older women I have supposed generally due to irritability of the neck of the bladder, due to previous cystitis. I should think, however, that many of those cases also might be helped by this over-stretching.

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[1] See page 577 of the Journal.

Dr. G. J. Engelmann: I should regard these cases in young girls as being a sequel to the infantile incontinence, the bladder not developing from the lack of the usual distention. In older women I have seen rebellion against the injection of the usual amounts of fluid come on after lesions of one kind or another — after a dilatation of the urethra, for instance.

Dr. J. G. Blake: I also am inclined to regard the condition as a persistence of the undilated condition we see associated with the incontinence of children. The treatment Dr. Haven advocates is certainly ingenious and seems the most promising one I have yet heard of.

Dr. Haven: During each treatment, which lasts from ten to fifteen minutes at first, and later from fifteen to thirty, there is really great pain, which, however, ceases the instant the treatment is interrupted. I should regard this pain as too great to expect a child of tender years to stand, and for that reason as well as for those Dr. Rotch has suggested would regard the treatment as best applicable to patients who have reached puberty.

Dr. Engelmann: I have been much interested in Dr. Rotch's statement as regards reflexes in children. Contrary to his experience, mine has been to see, perhaps, more striking examples of reflex action in young boys than in young girls.

Dr. Rotch: Of course this treatment is applicable only to somewhat rare cases. The vast majority of cases of incontinence get well of themselves, with or without treatment.

Dr. Chadwick spoke of a case in which the attempt to dilate an adult bladder which was the seat of previous inflammation was followed by very untoward results.

Dr. A. Worcester: We are indeed fortunate in hearing of a new treatment which is so thoroughly in line with natural processes; we can compare this condition to many others which are known to us where the trouble is due to lack of development. It does not seem to me at all extraordinary that by exercise we could be able to cause a muscle to develop as it was intended by nature. The problem would be a quite different one if it were the question of dilating a normal bladder. I agree with Dr. Blake, that this is a notable communication and one that certainly opens up new fields for investigation.

Dr. W. L. Burrage read a paper entitled

THE CARE OF THE HANDS FOR THOSE WHO PRACTISE SURGERY.[2]

Dr. Davenport: I abandoned the use of permanganate two years ago, and have come to depend upon alcohol with perfectly satisfactory results both as regards the patient and the condition of my own skin.

Dr. C. M. Green: I agree cordially with the reader's statement of the importance of washing the hands after an operation to avoid anything drying upon the skin. Personally I prefer lysol, as it removes blood, etc., so completely.

Dr. F. B. Harrington: I have used the nascent chlorine largely during the last two years, but have finally given it up for various reasons, but chiefly on account of the odor of chlorine, which is most persistent, and profoundly offensive to me, more so even than carbolic acid. Furthermore, it is not as easy to treat the patient's skin immediately before operation with the chlorine as it is with the permanganate and oxalic solutions, and personally I prefer the effect of the permanganate on the hands. Lately I have been using the rubber gloves entirely; they have many advantages, and their expense is slight, as they can be used several times. I do not approve of the cotton gloves, as, under many conditions, they would carry pus even more readily than the fingers.

Dr. F. A. Higgins: The kid street gloves we habitually wear are a constant source of infection if once any septic material has been introduced into them on our hands, and for this reason the use of the rubber gloves during operations appeals to me very strongly.

Dr. M. Storer: Even if rubber gloves are to be worn the hands must be disinfected quite as carefully, for the gloves are very liable to become injured during the operation, and, from their interference with the operator's tactile sense, he may find it necessary to remove them at a critical period. As to the cotton gloves, Döderlein has shown by careful experiments that while of course they are sterile enough at first, if used for any length of time in a bloody operation they will afford actually more cultures than can be obtained from the bare hands, as the wet gloves pick up any stray bacteria with wonderful facility. Accordingly it is my custom when wearing cotton gloves to remove them after fifteen or twenty minutes, and either put on a fresh pair or trust to the bare hands. I have tried the nascent chlorine to a certain extent, but thus far have preferred the permanganate, which does not trouble my hands; and if the oxalic is washed off with corrosive and the hands then rinsed in salt solution I think the permanganate treatment leaves the hands quite as little slippery as does the chlorinated soda. The statistics, however, that Dr. Burrage has quoted and his own experience with the chlorine will lead me to try it further.

Dr. Burrage: As regards lysol, which I was one of the first to use in Boston, if not its introducer here, I can only say that I still like it very much and use it continually. Objection to the odor of the chlorine is of course a personal matter. I myself do not dislike it at all.

Dr. J. B. Swift reported the following

CASE OF PORRO'S OPERATION.

The question of choice between the operation of symphyseotomy and Cæsarean section has been discussed several times by this society. I am in a position to give evidence from the patient's point of view, having recently delivered by Cæsarean section the patient, upon whom I did symphyseotomy two and one-half years ago. She thinks Cæsarean section should always be done, because it saves the woman so much pain and discomfort, and the convalescence is so much easier. I did a utero-ovarian amputation or Porro's operation this time, and there has been absolutely no shock or discomfort of any kind. Both mother and child have done as well as any case of normal labor which I ever attended. In the *British Medical Journal* of February 18, 1899, Balfour reports a case of symphyseotomy, followed by a normal labor two years later, in which a permanent enlargement in size of the pelvis remained after a symphyseotomy. In my case there was no change in the size of the pelvis. When the patient came to me early in her last pregnancy the pelvic measurements were the same as at the time the symphyseotomy was done. I watched her carefully through the pregnancy, taking the measurements every month, and there was no change. At seven and a half months the head could not be pushed through the brim. According to the measurements, the true conjugate was estimated to be 8 cm. At the operation I measured the true conjugate inside the pelvis, and found it to be exactly 8 cm. The child's head measured: bitemporals, 9 cm.; biparietal, 10 cm; sub-occipito bregmatic, 10 cm.; occipito-frontal, 12 cm.

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[2] See page 574 of the Journal.

In the previous operation upon this woman there was a question whether she was not already septic and I accordingly chose symphyseotomy. Here that question did not arise and I chose the Cæsarean section as being preferable. The patient is spared all pain — even the pains of labor — and has much less discomfort following the operation. I did the Porro operation because the woman had by this time had her full share — one craniotomy, one symphyseotomy and now a Cæsarean section.

Dr. Edward Reynolds: After an experience of eight Cæsarean sections and two symphyseotomies I find myself holding the same view as does Dr. Swift, that the Cæsarean section is preferable on account of its ease, comfort, and completeness, both to the operator and the patient. Symphyseotomy is safer in cases of stress, when the woman is in bad condition. While the mortality of Cæsarean section in proper hands is but a very small fraction, it is dangerous in difficult cases. My rule is, when the circumstances are favorable choose the Cæsarean section, when unfavorable choose the symphyseotomy with all its possible subsequent disadvantages.

Dr. Reynolds then demonstrated his

INSTRUMENT TO DILATE THE CERVIX DURING LABOR.

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NEW YORK NEUROLOGICAL SOCIETY.

(Concluded from No. 22, p. 528.)

Stated meeting, February 7, 1899, Joseph Collins, M.D., Vice-President, in the chair.

THE RELATION OF INFANTILE SPINAL PARALYSIS TO SPINAL DISEASES OF LATER LIFE.

Dr. William Hirsch read this paper. He said that various theories had been propounded to explain the relation between the infantile paralysis and the later disease. Charcot had expressed the opinion that there existed in some individuals a certain vulnerability of the ganglion cells of the anterior horns which in some period of life might give rise to a poliomyelitis anterior, and at another period cause progressive muscular atrophy. Another view was, that the old scar produced by the inflammatory process in the gray matter of the anterior horns formed a latent, but permanent, inflammatory focus, which might be rekindled at any time. But the very varying clinical aspects presented by the nine cases on record would seem opposed to such a theory.

The following case had come under his own observation: A tailor, forty-five years of age, had presented himself in October, 1895. He denied having had syphilis, and gave a good family history. He had been in perfect health up to three years before, when his left leg had become stiff and weak. This steadily grew worse, and, after a time, the right leg became similarly affected. There were no sensory symptoms at this time, or disturbances of the functions of the bladder or rectum. There was an atrophic condition of some of the muscles of the trunk and upper extremities. There was also fibrillation of the muscles of the trunk and shoulder, and diminished excitability in the deltoid and supraspinatus. There was no atrophy in the lower extremities. The tendon reflexes of the lower extremities were considerably increased. Abdominal clonus often came on spontaneously, to the great annoyance of the patient. The reflexes of the upper extremities were not increased. The muscular sense was not impaired. Speech was not at all affected. There was no nystagmus, and the reaction of the pupils to light and accommodation was normal. The deltoid muscle had almost disappeared, and the biceps and triceps and pectoral muscles were greatly wasted. According to the statement of the patient, this condition of the muscles had existed since childhood. Apparently, when about two years old he had had an attack of infantile paralysis, which had left behind the condition of the left upper extremity. The case had been presented by him to this Society on October 1, 1895, and he had then maintained that the lesion was apparently in the left anterior horn of the cervical cord. The diagnosis then had been amyotrophic lateral sclerosis. The spastic condition of the lower extremities had become gradually worse after that time, so that since January, 1897, walking had been impossible, and since last March it had been necessary to remain in bed. The lower limbs were exceedingly rigid, and he suffered much from shooting pains. The paralysis of both upper extremities became more intense, until these extremities could be moved but little. Sensation remained perfectly normal. In April he experienced some dysphagia, and within a month could not swallow any food. He died on April 14, 1897. The autopsy was made a few hours later, the brain and spinal cord being the parts examined. The central convolutions were of the same size on both sides. Coarse sections of the medulla oblongata showed nothing abnormal macroscopically. The brain, medulla and cord were hardened in five-per-cent. formalin solution, and serial sections made throughout the cord. The left anterior horn of the second cervical segment showed marked shrinkage, and there were scarcely any ganglionic cells left here. On the right side the ganglionic cells were present, but were atrophied, and in a chromophilic condition. There was a proliferation of the blood-vessels in the gray substance, and the perivascular spaces were enlarged. This condition of the blood-vessels and perivascular spaces was found throughout the cord. In the third and fourth cervical segments there was a proliferation of connective tissue, starting from the left anterior horn and extending into the white substance. In the fifth cervical segment the left anterior horn was considerably smaller than the right, and the gray matter was more vascular. The proliferation of connective tissue was more marked here than in the previous segments. The farther downward the examination was made the more extensive was this connective-tissue proliferation on the left side, and the proliferation of blood-vessels. The same condition of connective-tissue proliferation existed to a lesser degree on the right side. Below the second segment no normal ganglion cells were found in the left side until the eighth segment was reached. On the right side all of the ganglionic cells of this segment appeared normal. On the left side were to be seen groups of muscle cells, but in an atrophied state, except those corresponding to the outer group of the upper extremity nucleus. At the sixth dorsal segment the entire gray and white substance was destroyed by connective tissue, so that the specimen looked like one taken from a case of transverse myelitis, except that the peripheral zone had remained intact. The blood-vessels were numerous and the perivascular spaces enlarged. Emboli and small hemorrhages into the cord were frequently observed. At the eleventh and twelfth dorsal segments the cord became more nearly normal, but the fan-like proliferation of connective tissue was still visible in the left horn. In the first lumbar segment all of the muscle cells were present, but they were more or less atrophic. At the third lumbar segment the fan-like proliferation disappeared, and the white substance became entirely normal. In the fourth lumbar segment no cells were found in the left anterior horn. Examining the cord from the second cervical segment upward, it was found that the connective-tissue proliferation involved especially the pyramidal tract. The cell layers of the cortex, over all parts of the brain, had been carefully examined, and found to be perfectly normal. Nothing abnormal was found in the optic thalamus or the corpus striatum.

The microscopical examination, Dr. Hirsch said, therefore confirmed the diagnosis made at the time of presenting the patient to the society. The clinical course of the disease had certainly been in favor of this diagnosis, giving, as it did, the three stages described by Charcot, namely, (1) atrophy; (2) rigidity with muscular contractures, and (3) bulbar symptoms. However, the pathological findings did not support the diagnosis of amyotrophic lateral sclerosis. This must be looked upon as a systemic disease — a primary degeneration of the motor neurons. Was this case, then, a neuron disease, or was it an example of some other pathological process in which the neurons had become affected secondarily? He was disposed to accept the latter view, and his reasons were: (1) That the connective-tissue degeneration and the enormous proliferation of the blood-vessels did not indicate degeneration of the neurons; (2) the topography of the inflammatory process — the spreading in all directions without regard to systems, and especially shown in the dorsal region, and (3) the atrophy of the ganglionic cells, which was not in proportion to the changes in the surrounding tissue. The case was apparently one of interstitial myelitis, probably of vascular origin. Recent investigations in cases of infantile paralysis, he thought, had made it clear that the disease was not a systemic one, but a specific inflammatory process. The anterior horns were affected because of the abundant blood supply of these parts. The atrophy of the cells was dependent upon the distribution of the smaller branches of the central vessels. As to the question of the relation between infantile paralysis and the later affection, Dr. Hirsch said that the theory of the old scar of the infantile palsy forming a latent inflammatory focus seemed to apply to the case just reported by him. It did not seem necessary to assume that there had been a new infection to explain the rekindling of this inflammation. In his case the fact that the cortical cells were normal gave weight to the statement that the case was not one of systemic disease, but a local inflammatory process, that is, a myelitis.

Dr. Edward D. Fisher said that he certainly agreed with the reader of the paper that it was not a case of amyotrophic lateral sclerosis. The point had been very clearly brought out that many cases formerly diagnosticated as systemic diseases were really various forms of diffuse myelitis. Many cases of poliomyelitis were met with which extended over a long period, and yet they did not give rise to the condition found in the case just reported, hence the direct relation of the inflammatory condition to the original poliomyelitis could not be definitely established. It would seem fair to assume that some irritation might be the cause of it. The theory of Strümpell, that there was a virus which could remain latent for many years and then exert its influence, seemed to him very far-fetched. He would like to ask whether there was any direct connection between the bulbar symptoms and the spinal symptoms which were present primarily. The clinical picture of poliomyelitis was almost perfect, so that no other diagnosis could be expected under the circumstances. The paper was an exceedingly valuable contribution to neurology.

Dr. Leszynsky said that he had had under observation for eight years a lady of forty-eight, who during her childhood had had a poliomyelitis. This had left her with an incompletely paralyzed limb. Some years later she had developed loss of power in both lower extremities, and when first seen by him, some years ago, there had been all of the signs of a progressive chronic poliomyelitis in both lower extremities. It had progressed, although very slowly, since that time. This seemed to indicate the possibility of a direct relationship between the old lesion and the later one, but this was the only case of the kind that he had ever encountered.

Dr. George W. Jacoby asked if cases of encephalitis occurred at all, or frequently, in later life after cerebral hemorrhage in childhood. He had seen one such case, in which an encephalitis occurred in an adult who had had a cerebral hemorrhage in childhood. There seemed to be an analogy between this and the case reported in the paper, and he would like to hear further along this line.

Dr. Joseph Collins said that it did not seem to him that there was any relation between the poliomyelitis and the diffuse myelitis occurring later in life in Dr. Hirsch's case. He could not imagine how the previous scar could have anything to do with starting the later inflammation, from which the patient died. According to clinical experience, with the bare exception of keloid, scars were not the starting-point of such pathological processes. The whole thing seemed to him a mere coincidence. In spite of the great care exercised in the examination, he had not been convinced that any definite relation between the two diseases had been demonstrated. It was naturally very gratifying to him that Dr. Hirsch's study had confirmed his own observations regarding the allocation of function of the posterior group of cells in the eighth dorsal segment. The explanation offered by the reader of the paper for not having found changes in the

Rolandic cortex also seemed very plausible and trustworthy. He certainly agreed with Dr. Fisher, that it was ridiculous to suppose that a scar could lock up a poison for half a lifetime, and then allow it to come out and produce disease.

Dr. Hirsch closed the discussion. Regarding the connection of the bulbar symptoms and the spinal cord symptoms, and the relation between the infantile spinal paralysis and the later disease, he said that he had quoted theories largely, but it seemed to be an actual fact that the pathologic process started from where the so-called scar of the poliomyelitis had been. This had been proved both by the clinical symptoms and the pathological findings. The fan-like proliferation of connective tissue into the pyramidal tract accounted for the rigidity of the limbs at the beginning of the later disease. The order of development of the symptoms seemed to be the origin of the later disease from the left anterior horn. Strümpell had compared the "scar" to a tubercular focus — evidently not an absurd comparison. He had found the report of a case of infantile poliomyelitis in which encephalitis occurred in later life.

Recent Literature.

Materia Medica for Nurses. By Emily A. M. Stoney, late Superintendent of Training School for Nurses, Carney Hospital, So. Boston, Mass. Philadelphia: W. B. Saunders. 1899.

This is a book of three hundred pages divided into three parts. Part I is devoted to general considerations and the classification of drugs, Part II to materia medica, and Part III to poison emergencies, mineral waters, weights and measures, confinement table, dose diet and abbreviations. To this is appended a glossary and an index. The book is thoroughly practical, up to date, and is just the sort of a book which a nurse would find useful and a doctor would wish his nurse to possess.

Text-Book of Anatomy, Physiology and Hygiene. By E. Franklin Smith, M.D. Lectures on Anatomy, Physiology and Hygiene, New York Preparatory School, etc., pp. xvii + 198. New York: William R. Jenkins. 1898.

This little book of one hundred and ninety-eight text-pages is written as a guide to students who propose to pass examinations required by the New York law before entering upon certain professions. The scope of the book is comprehensive, as its title implies, and its substance, of necessity, superficial. The author claims that it is needed — an opinion in which he must stand practically alone. Owing to certain demands made by public schools for elementary text-books the number has increased out of all proportion to their actual need. With the advance of knowledge they seem to grow more and more trivial, and we certainly take no radical position when we maintain that the knowledge of anatomy, physiology and hygiene which can be compressed into a volume of one hundred and ninety-eight pages is better left unwritten.

The book is amply illustrated, and has a glossary of technical terms and a good index.

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THE PROPOSED SCHOOL OF COMPARATIVE MEDICINE AT HARVARD UNIVERSITY.

During the last few years medical science has progressed in two directions: it has become both broader and deeper. With the clear recognition of the germ-theory of disease, with the growth of the science of anatomy, which must include development, and with the general broadening of the medical horizon in all special branches, it has become more and more apparent that we cannot accomplish results of importance without a constant appeal to the lower animals. It is quite contrary to the spirit of the time to attack the problems which medicine now offers by a consideration of the latest product of evolution alone. We absolutely require both in the study of disease and in that which the purely theoretical side of medicine offers, to include the preliminary steps as well. Medicine as an art will no doubt pursue its course to the end, with man as its subject, but medicine as a science has entered upon a broader field, in which every aid to its further advance must be systematically utilized. The most important means is comparative study carried on not as an end in itself but as an aid to those broad biological conceptions which it should be the aim of scientific men to foster. It goes without saying that comparative studies have been prosecuted for many years in all great educational institutions, and that much of our knowledge of the human organism, both in normal and diseased conditions, depends upon this work, and is likely to, in increasing degree, as time goes on. Medicine must, therefore, broaden its scope far beyond the consideration of man alone, if it is to stand, as it should, at the head of the biological sciences.

With this growth in breadth there must also be a corresponding growth in depth, which again is sufficiently apparent, if we look about us. Specialism is the objective demonstration of this fact. Men are coming to recognize that diffuseness and thoroughness are inconsistent terms, and that in the practice of medicine, as well as in the investigation of its problems, the field must be curtailed so far as the individual is concerned, if the body of scientific fact is to be enlarged. Hence we see men devoting themselves to one subject to the exclusion of others, with a resultant gain in knowledge. The specialist who deserves the name must now be an investigator; to maintain his position he must advance knowledge in his chosen field, and he must view his subject from every standpoint. Hence, from this side, we see the justification for, and necessity of, comparative study. The special student of any organ or set of organs requires the knowledge which such study gives.

These general facts have, no doubt, long been recognized, but no organized attempt toward the broader development herein suggested has been carried out by any educational institution. It is, therefore, with great interest that we note the proposed enlargement of medical instruction, which is now under discussion, as a department of Harvard University. The plan has been suggested of adding to the departments hitherto existing, another which will be known as the "School of Comparative Medicine," and whose main function it will be to promote research in a broad and systematic way. The advocates of the plan maintain that the great need of medical instruction, using the term in its most general sense, is the broadening and deepening influence which such an establishment would give. Certain of their arguments are as follow: In the first place, it is urged that the demands of a liberal medical training require that students who so desire may have an opportunity to prosecute their studies in a systematic and coherent manner after receiving the degree of Doctor of Medicine. As at present organized the graduate courses of the Medical School do not fill this need, inasmuch as they lack coherence. A man may take an advanced course in a great variety of subjects, but no provision is made for him to take up a number of related subjects leading to a common end, under the supervision of a highly-trained specialist. The *system* is lacking. The new scheme proposes to provide just this lack, by instituting what will be a true graduate school, with laboratories, equipment and service for carrying out the most highly detailed research work. The dignity of investigation for its own sake will be thereby more clearly appreciated, and properly qualified men will be encouraged to enter such a school in order to prepare themselves for better service as teachers later on, and incidentally to receive a higher degree, indicative of the successful accomplishment of a systematic piece of research work of high excellence. In other words, such a school would correspond very closely with the graduate school associated with the Academic Faculty. While standing in the closest relation to, it would in no sense conflict with, schools already existing; it would merely be the post-graduate department in a broadly organized scheme of medical instruction, giving a higher degree exactly in the same sense that the graduate department of the college proper gives its higher degrees. The idea, if carried out, would consolidate all medical branches under one faculty, each department maintaining its identity, giving its distinctive degree and controlled by its separate administrative board. The departments under the new organization would, therefore, be medical, dental, veterinary and post-graduate, the latter to be known technically as the School of Comparative Medicine. The alliance, for example, of the medical with the post-graduate department would be of the closest, yet with no hampering of the independence of each. The opportunity of individual development would be enhanced rather than curtailed, owing to the stimulus which each would supply the other.

So far as we are able to learn, these are the main arguments of the adherents of the new plan. They point out further the benefits likely to accrue to the community through the study on a large scale of the great therapeutic and prophylactic problems of the present day, in properly equipped laboratories and hospitals designed for experimental research on the lower animals, and the study of their diseases.

To any broad-minded person the comprehensive scheme outlined above must appeal as an extremely high ideal of medical education. The insistence upon research as an end, the training of highly-cultivated scientific investigators, and the study of the problems of etiology and prevention in the completest way, are all reasons of weight for the establishment of such a school.

No doubt the matter presents a more difficult phase when the questions of detail, and ways and means arise. These are matters about which we have no definite information and which we have no desire to discuss. It is, however, usually true that if a plan commends itself to all, the details are not impossible of arrangement. In any case, the general scheme of consolidated medical teaching with the maximum of independence for the various departments concerned commends itself to us as a rational and feasible method of promoting the best interests of medical education.

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THE ANNUAL REPORT OF THE MASSACHUSETTS GENERAL HOSPITAL.

THE Massachusetts Hospital being one of the oldest and most widely known hospitals, as well as one of the best conducted in the country, its reports are always of more than ordinary interest. The profession and hospital managers are glad to be informed as to what has been done there and how it has been done. The report for the year 1898 is the eighty-fifth annual report. The year has been a prosperous one. The funds have been increased by legacies, bequests and donations in the very handsome sum of $913,834. In the General Hospital the total number of patients treated was 5,053, an increase of 711 over the preceding year, and the average number in the hospital was 253 as against 235; the increase has been mainly in the paying patients. The average cost per week has fallen from $14.03 to $13.16. The public has been given a slight increase of free-patient service, but the hospital has gained an increase of 27.73 per cent. in returns from paying patients, and this result was reached in spite of the strain and expense put upon the hospital by the large number of sick soldiers taken there on their return from the war, for whose care nothing has yet been received from the National Government. The number of out-patients treated was 28,741, and the average daily attendance 294; a slight decrease from the preceding year. This may perhaps be due to an increased vigilance in regard to well-to do applicants.

The surgical tables show that 219 cases of appendicitis were operated on during the year, of which 201 were during an attack, with the result of 30 deaths, or about 15 per cent.; 18 were operated on between the attacks, with no deaths. The medical tables show a great increase in typhoid fever and malaria cases, largely due to the soldiers from Santiago, Puerto Rico and the Southern camps. On the other hand, the number of patients with cerebro-spinal meningitis fell from 32 to 14, giving evidence of the subsidence of the epidemic which has been prevailing for some time in Massachusetts.

One innovation of some importance was adopted by the trustees. On June 3d, in accordance with the recommendation of the visiting physicians and surgeons of the General Hospital, it was

"*Voted:* That the seniors in the Out-Patient Department for diseases of the skin, of the nervous system, of the throat, and of the eye be regarded as members of the visiting staff, so far as that recognition confers the right to attend and vote at the meetings of the staff which are called to consider general questions of hospital policy."

We understand that this step was carefully considered before it was taken, and its being taken shows that the trustees were convinced of its desirability under the existing conditions — conditions which are not the same in other hospitals. At the Massachusetts Hospital these departments had no representation whatever in hospital management. It is gratifying to know, however, that action was taken by the trustees in *accordance with the recommendation of the visiting physicians and surgeons.*

The preservation of a courteous consideration for each other and of a mutual regard for respective duties and responsibilities on the part of a board of trustees and of a hospital staff, is of vital importance in hospital as in other corporate management.

The clinical-pathological laboratory has completed the second year of its existence. The director makes a separate report, and shows the important relation which this laboratory has assumed towards the practical clinical work of the hospital as well as its contributions to abstract medical problems. The building has proved eminently satisfactory. Such a department amply justifies its existence, but causes wonder that it was not sooner regarded as indispensable.

The superintendent of the McLean Hospital states that the average duration of illness from the beginning of attack in all cases recovered was 8.11 months, and the average duration of their residence in the hospital was 4.87 months. The percentage of recoveries on all admissions, for the year 1898, was 20.5.

The voluntary cases admitted during the year numbered 62, 32 men and 30 women, four less than one-half of all admissions.

The results of the third year's work in the new hospital at Waverley show that it is attaining a normal condition as to the numbers admitted and discharged; the daily average of patients, being increased to 154, was nearly equal to the full capacity of the hospital.

A lady who desired her name to remain undisclosed has given $27,000 as the nucleus of a fund for the building and maintenance of a chapel on the grounds of the McLean Hospital to be known as "The Samuel Eliot Memorial Chapel."

Dr. Samuel Eliot died September 14, 1898. The Board of Trustees resolve that: "His constant and faithful service as trustee of the hospital for thirty-two years, during the last twenty-four of which he filled the position of chairman of the Board, has ever commanded their confidence and respect, while his patient attention to details and his unvarying courtesy of manner have won their admiration and our love. No little of the successful development and enlargement of the work of the institutions under the charge of the Board has been due to his watchful oversight and ever jealous care for their best interests."

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MEDICAL NOTES.

New Officers of the American Orthopedic Association. — At the executive session, held June 2d at the New York Academy of Medicine, the following were elected as officers of the Association for the ensuing year: President, H. M. Sherman, of San Francisco; First Vice-President, R. Tunstall Taylor, of Baltimore; Second Vice-President, A. R. Shands, of Washington, D.C.; Treasurer, E. G. Brackett, of Boston; Secretary, John Ridlon, of Chicago.

Revocation of the Right to Practise Medicine. — The Supreme Court of Iowa recently rendered a decision declaring that the State Board of Medical Examiners possessed the right to revoke the license of any physician whom it considers incompetent to practise medicine.

Discontinuance of the "Index Medicus." — The *Index Medicus* has at last been discontinued owing to lack of support on the part of the medical profession. Its loss will be severely felt wherever medical research is carried on, and is greatly to be regretted. The American Medical Association, through its trustees and the editor of its *Journal*, may undertake the editing and publishing of the *Index*.

The Faculty of the University of Pennsylvania. — The medical faculty of the University of Pennsylvania, we learn from *Science*, has made nominations as follows: Dr. James Tyson, professor of clinical medicine, to the chair of medicine, vacant by the death of the late Dr. Pepper; Dr. John H. Musser and Dr. Alfred Stangel, to be professors of clinical medicine; Dr. Judson Daland, Dr. M. Howard Fussell, Dr. John K. Mitchell and Dr. Frederick A. Packard to be assistant professors of medicine, and Dr. G. Davis to be assistant professor of applied anatomy.

Resolutions regarding Opticians. — The following resolutions presented by Dr. Louis J. Lautenbach, of Philadelphia, Pa., and supported and seconded by Dr. S. S. Towler, of Marionville, Pa., were unanimously adopted by the Medical Society of the State of Pennsylvania, on Wednesday, May 17, 1899, at Johnstown, Pa.: *Resolved*, that it is the opinion of the Medical Society of the State of Pennsylvania, that opticians are not qualified by their training, or are they legally qualified, to perform the work of the oculist, and they should not be the consultants of regular physicians. Further it is *Resolved*, that all physicians are requested to call their brother physicians in consultation, thus discountenancing the growing pretences and assurances of the optician and his brother, the graduate optician, or, as he is beginning now to call himself, the "Ophthalmotrician."

Death of Mr. Lawson Tait. — Mr. Lawson Tait died in London, June 13th. He was in his fifty-fifth year.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, June 14, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 38, scarlet fever 17, measles 85, typhoid fever 6, small-pox 1.

Boston Society of Medical Sciences. — A meeting of the Boston Society of Medical Sciences was held June 6, 1899, at which the following communications were made: Dr. F. P. Denny described a new spore-producing bacillus, which was non-pathogenic, and yet showed a distinct clump reaction. Drs. W. T. Porter and H. G. Beyer gave the results of their experiments in the relation of the depressor nerve to the vasomotor centre. Dr. Theobald Smith spoke on the relation of dextrose to the toxin production of the diphtheria bacillus. Dr. Allen Cleghorn described a further series of experiments to those already reported to the Society on the physiological actions of extracts of the sympathetic ganglia, in which he was able to demonstrate that injection of the extract increased the flow of blood. Dr. A. Matthews read a paper on the "Origin of Fibrinogen," in which he concluded that fibrinogen is probably added to the blood from the disintegration of leucocytes in the passage of the blood through the intestinal walls.

The Bacilli in Telephone Transmitters. — Dr. Hibbert W. Hill, bacteriologist to the Boston Board of Health, has examined cultures taken from the transmitters on some of the most frequently-used public telephones in Boston, and found no pathogenic bacteria, merely the "hay bacillus" and one or two other harmless varieties. It is now in order for New York papers to express their surprise at the absence of the "bean bacillus."

The West End Nursery and Infants' Hospital. — This deserving charity has outgrown its present accommodations, and as it is dependent for its support upon subscriptions and contributions the Board of Directors have issued an appeal for subscriptions for a permanent endowment fund, from the income of which the current expenses could be met.

The Dalton Scholarship. — The appointments for the Dalton Scholarship connected with the Massachusetts General Hospital for the next school year are Frank J. Geib and Henry W. Smith.

Scarlet Fever, Measles, Etc. — A small epidemic of scarlet fever in a school district in Somerville has resulted in the closing of eight rooms in a schoolhouse in that city for the remainder of the term. More than seventy-five cases of measles have been reported to the Board of Health of West Medford, Mass., and the disease has markedly diminished the attendance at the public schools. The disease is said to have been started by two volunteers of the Fifth Massachusetts Regiment, who brought it from the South.

Small-Pox in Chelsea, Mass., and Elsewhere. — Three cases of small-pox have been discovered in a family in Chelsea. The disease appeared four weeks ago, attacking the father of the family, but he and a son passed through it without calling a physician. The severe type of the disease in the third case, a daughter, resulted in a physician being called to the family for the first time. The family have been quarantined and will be removed to a temporary isolation hospital which is to be erected on the foundation of the pest-house which was burned a few years ago. The origin of these cases is unknown. In Fall River two more cases of small-pox have appeared in the same district in which the previous cases occurred. There are now thirty-two patients in the isolation hospital. In South Boston the mother of the two boys who were sent to Gallop's Island last week has been found to be suffering from a mild attack of the disease and moved to the island.

Statistics of Cremation. — The following statistics of the progress of cremation in this country were given at a recent meeting of the New England Cremation Society, by John Storer Cobb, one of the founders of the Society. The first organized attempt at cremation in this country was in New York in 1874, and the first crematory was erected, privately, in Washington, Pa., in 1876. It was not until 1885 that New

York finally erected a crematory. From that time until 1897, others were erected in different parts of the country until the total number reached twenty-five, of which the one in Middletown, Conn., has not been put to use, and the one in Washington, Pa., has gone out of use. More than one-half of these crematories are connected with cemeteries. Undertakers control three. From 1884 to 1898 there were 8,883 bodies cremated at these crematories, of which 1,699 were cremated last year. There has been a slow but steady increase. There have been but 1,664 cremations in the British Isles.

Graduation of Nurses at Long Island Hospital. — The first class in the two years' course of the Long Island Hospital Training School for Nurses was graduated with appropriate exercises on June 12th. Seventeen nurses were graduated. The exercises were held in the afternoon and evening in the chapel, and addresses were made by Dr. Abner Post, president of the visiting staff, Dr. E. W. Taylor, secretary of the staff, and others.

NEW YORK.

Mortality due to the Heat. — The period of extreme heat, occurring so early in the season, was very fatal in its results. On Tuesday, June 6th, there was a large number of prostrations in the streets and five deaths were reported from the direct effects of the heat. On Wednesday, the 8th, there were twenty-nine deaths; on Thursday, the 9th, sixteen deaths, and on Friday, when the high temperature moderated, one death. Twenty were infants of one year or under, and most of the others were in elderly persons. While the extra summer corps of inspectors has not yet been appointed, the president of the Board of Health has ordered a special inspection of the tenement districts by the regular sanitary force of the department with a view to the prevention of overcrowding and the removal, as far as possible, of all causes tending to increase the mortality during the hot weather.

Commencement at Columbia. — The one hundred and forty-fifth annual commencement of Columbia University was held in the gymnasium building on June 7th. There were 470 graduates from the various departments, and 140 of these were from the College of Physicians and Surgeons, the candidates for the degree of M.D. being presented by Prof. John G. Curtis. Among the honorary degrees conferred was that of Master of Science on Dr. Edward L. Trudeau. Dr. Augustus J. Lartigan has been appointed tutor in pathology, and Dr. Oliver S. Strong, assistant in histology. It is announced that a gift of $5,000 has been made by Charles H. Seuff to the Department of Zoölogy in Columbia, the sum to be used in paying the expenses of an expedition to the Nile for purposes of research.

The German Hospital in Brooklyn and its Benefactor. — The completion of the German Hospital in Brooklyn was celebrated on the night of June 2d, with an entertainment in Arion Hall. The guest of honor on this occasion was to have been John Hein, who was one of the originators of the institution and had contributed $30,000 towards the erection of the building; but early in the evening word was received that he had just died. A life-long invalid himself Mr. Hein, although not wealthy, had for years devoted himself to the relief of suffering humanity, and among his benefactions was a gift of $15,000 to the German Hospital in Manhattan.

A Magic Healer Justly Sentenced. — On June 5th Mrs. Mary Müller, the "magic healer," through whose negligence the amputation of the child Dora Kranz's leg was rendered necessary, was found guilty in the Court of Special Sessions, Brooklyn, of practising medicine without being a legally qualified physician, and sentenced to five months' imprisonment in the Kings County Penitentiary. In the case of Mrs. Charlotte Barguet, of Mount Vernon, for whose death the Christian Scientist, Mrs. Clarence Fowler, and the two children of the deceased were held responsible by the coroner's jury, the grand jury of Westchester County declined to bring an indictment against the accused.

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ARMY NOTES.

The Army Canteen. — In view of the activity of certain temperance organizations in opposition to the army canteen system the War Department has desided to call for a personal expression of opinion as to the merits of this system from each officer and non-commissioned officer of the army, in order to make a thorough presentation of the case at the next session of Congress. Through a recent decision of the Attorney-General with reference to a law which the total abstinence element succeeded in passing in the closing days of the last Congress the army canteen is still in operation, civilians being now employed therein, instead of soldiers, as formerly.

Embalmers Employed on Transports. — In deference to the feelings of the friends and relatives of such soldiers as may hereafter die while *en route* between the United States and the new territorial acquisitions and to avoid the necessity of burial of the remains at sea, the War Department has recently made arrangements to permanently attach a professional embalmer to each army transport. The embalmers will be civilians, employees directly under the control of the quartermaster-general.

The Army Ration. — The first of a series of reports called for by the War Department with reference to the advisability of any changes in the ration in view of the tropical service in which troops are now engaged has just been received at Washington. In spite of the criticism of the army ration from outside sources, the board convened by General Otis, at Manila, recommends no change whatever in the existing field and travel rations. The garrison ration is modified to a slight extent, the board recommending that fresh beef be issued eight days and bacon two days; with canned salmon one day in lieu of beef, if desired. The daily ration of fresh beef and flour is recommended to be reduced to sixteen ounces of each, two ounces of rice and two of dried fruit to be issued in lieu of beef and two ounces of oatmeal to replace the reduction in the flour component. No savings in these latter articles are to be permitted. The board recommends that the issue of beans, rice, fresh vegetables, coffee and tea be continued as at present, but advises the increase of the sugar allowance by one-fourth. The allowance of vinegar is recommended to be reduced one-half, with the substitution of pickles.

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Correspondence.

[Special Correspondence.]

THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

Columbus, Ohio, June 10, 1899.

Mr. Editor: — The American Medical Association Meeting of 1899 is now an affair of history — and good history! We doubt if there has heretofore been one in which the essential elements of progress have been more distinctly marked. The Association has clearly become the gravitational centre controlling the conserving or unitizing forces of American medicine, and is fast becoming conscious both of its duty and power. The many American physicians who have heretofore been indifferent are one by one, and in increasing numbers, dropping their aloofness and suspicion, and, recognizing its destiny to dominate, are joining the Association and attending its meetings. The number registered at Columbus last week was about 1,700, not, as a New York contemporary gives it, "nearly 3,000." But it is character rather than numbers that inspires us with hopefulness. Even in such a matter as personal ethics and dignity there was a most noteworthy absence of what has previously been an altogether too conspicuous presence of the guzzlers and "all-nighters." There were even strange stories of "*Nothing stronger than lemonade, please, this year!*" and the banquets, even that of the so-called American medical editors, were free from stories in which the delight in witless filth has too decidedly been the astonishing element of attractiveness. There is plainly to be an end of the "dry-smoker" and the roysterer, and let us hope, also, of the schemer and the self-advertiser! If a man wishes office hereafter, he and his friends must go about it with a subtlety that will tax the best powers of that expert, the medical politician. Better wisdom would it be if he and his friends should not "go about it" in any way whatsoever. As was the case this year, so it will probably be hereafter — the way not to get office is to scheme for it.

We have never known a meeting so completely free from controversy and wrangling in the general sessions. The business was conducted with remarkable smoothness and speed. This was largely due to the efficient work of the most praiseworthy Executive Committee, in which measures were first threshed out and the winnowed wheat only brought for disposal to the general body. Two or three resolutions are worthy of special mention, particularly the recommendations of the Philadelphia delegation in reference to a reorganization of the Army Medical Department. The labors of the Philadelphia Committee for several weeks had resulted in most carefully considered and prudent conclusions, and it is certain that if Congress can be prevailed upon to listen to the advice of the American medical profession as represented by the unanimous vote at Columbus, we shall see the medical branches of the service dignified, rendered effective, and the scandals, morbidity, and mortality recently too manifest prevented from ever again occurring. A second measure of great value, introduced by Dr. Gould at the suggestion of the Associated Alumnæ of Trained Nurses, was also unanimously endorsed by the Association. Its object is to provide for an organized and efficient department of trained nurses for the army hospitals. What physician, either for himself (if sick) or his patient, would choose a man instead of a trained woman for a nurse? The essential features of the bill (No. 5353) introduced by Mr. Burrows in the Senate, with whatever amendments may be suggested by the good judgment of the Associated Alumnæ of Trained Nurses in consultations with the surgeon-general and other officers, was endorsed by the Pennsylvania delegation, the Executive Committee, and in the general session, without a dissenting voice. We sincerely hope it may soon become law.

The proposition that the Association take upon itself the editing and publishing of the *Index Medicus* was referred to the trustees, who in conjunction with the efficient and able editor of the *Association Journal* have taken it under serious consideration. We heartily hope they may find it possible to carry on the work so necessary to professional progress.

So far as the Association itself is concerned, the most important measure of reform was that brought about by the recommendation of the Executive Committee in reference to abuses and overcrowding of the section programmes. This year, under the ideal presidency of Dr. Billings, of Chicago, the Medical Section published as a part of its programme authors' abstracts of the papers to be read. Henceforth this is to become the rule of all sections; the number of papers to be admitted to the programme is also to be limited. In this way we trust that those old sinners who get their names on programmes with little intention of writing the proposed papers, and less of reading them, may have their agraphia and aphonia preceded by a desirable *intentional* tremor and paralysis.

There has never been such solid and earnest section-work as at this meeting. No exophthalmic discovery was launched at the heads of the profession — and none at the open-mouthed laity — but there was a remarkable amount of downright scientific working the matter out, a hearty co-operation and comparison of results of many different men — all arguing a better professional spirit and a steadier progress than all the new-discovery folks combined will ever achieve.

The announcement that the next meeting will be held at Atlantic City brought delight to the heat-exhausted members.

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METEOROLOGICAL RECORD

For the week ending June 3d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...28	30.00	60	72	49	73	87	80	W.	N.E.	7	10	O.	O.	
M..29	30.17	52	56	49	75	83	79	N.E.	S.	10	12	O.	F.	
T...30	29.94	66	82	50	86	52	69	S.W.	W.	12	10	O.	C.	
W..31	29.93	74	86	62	47	48	48	S.W.	S.W.	12	10	C.	C.	
T... 1	29.84	76	88	64	60	65	62	S.W.	S.W.	10	9	C.	C.	
F... 2	29.87	73	83	63	75	51	63	N.W.	W.	5	4	O.	C.	.03
S... 3	30.05	70	75	65	54	42	48	N.E.	E.	2	12	F.	C.	
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* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, June 3, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup	Cerebro spinal men.
New York	3,438,899	1202	440	13.32	17.46	1.71	5.14	1.17
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	220	75	6.75	13.40	—	1.80	1.35
Baltimore	506,389	179	40	9.35	5.50	1.10	1.10	1.35
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	—	—	—	—	—	—	—
Washington	277,000	97	29	14.42	11.33	3.09	2.06	8.24
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	49	8	8.16	16.32	2.04	—	2.01
Nashville	87,754	40	14	15.00	7.50	7.50	2.50	2.50
Charleston	65,165	—	—	—	—	—	—	—
Worcester	108,240	37	13	24.30	2.70	—	5.40	10.80
Fall River	95,919	—	—	—	—	—	—	—
Cambridge	89,724	28	12	14.01	17.55	3.51	7.02	—
Lowell	88,641	45	18	15.55	15.55	2.22	—	—
Lynn	66,703	—	—	—	—	—	—	—
New Bedford	66,340	19	7	15.78	21.04	—	5.26	—
Somerville	61,101	12	4	8.33	16.66	—	—	—
Lawrence	57,263	24	17	—	12.48	—	—	—
Springfield	56,501	15	5	—	26.66	—	—	—
Holyoke	43,424	6	2	—	—	—	—	—
Brockton	37,278	—	—	—	—	—	—	—
Salem	36,883	16	4	6.25	—	—	—	—
Malden	34,613	16	—	6.25	12.50	—	—	—
Chelsea	33,468	6	2	—	16.66	—	—	—
Haverhill	32,022	7	—	14.28	—	—	—	—
Gloucester	30,589	3	1	—	—	—	—	—
Newton	29,716	13	—	7.69	23.07	—	—	—
Fitchburg	29,438	4	1	—	—	—	—	—
Taunton	28,167	13	3	—	15.38	—	—	—
Everett	25,338	7	—	—	—	—	—	—
Quincy	23,549	10	6	20.00	10.00	—	10.00	—
Pittsfield	22,643	5	1	—	20.00	—	—	—
Waltham	21,812	7	1	—	—	—	—	—
North Adams	20,971	3	—	—	—	—	—	—
Chicopee	17,842	8	5	—	12.50	—	—	—
Medford	16,511	—	—	—	—	—	—	—
Newburyport	14,915	—	—	—	—	—	—	—
Melrose	14,032	5	2	—	40.00	—	—	—

Deaths reported 2,097; under five years of age 705; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 124, acute lung diseases 300, consumption 247, diphtheria and croup 74, cerebro-spinal meningitis 41, diarrheal diseases 31, scarlet fever 26, measles 25, whooping-cough 14, erysipelas 13, typhoid fever 10, small-pox 2.

From scarlet fever New York 14, Boston 4, Worcester and New Bedford 2 each, Providence, Lowell, Salem and Newton 1 each. From measles New York 19, Lowell 5, Cambridge 1. From whooping-cough New York 11, Boston 2, Somerville 1. From erysipelas New York 9, Baltimore 3, Boston and Quincy 1 each. From typhoid fever New York 5, Boston, Baltimore, Washington, Providence and Nashville 1 each. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending May 27th, the death-rate was 16.0. Deaths reported 3,496; acute diseases of the respiratory organs (London) 256, measles 119, whooping-cough 84, diphtheria 59, diarrhea 41, scarlet fever 27, fever 16.

The death-rates ranged from 10.8 in Gateshead to 21.4 in Manchester; Birmingham 14.4, Bradford 16.1, Cardiff 11.2, Huddersfield 11.1, Hull 17.6, Leeds 15.3, Leicester 14.6, Liverpool 20.8, London 15.7, Newcastle-on-Tyne 16.9, Nottingham 17.4, Portsmouth 19.6, Salford 17.4, Sheffield 17.4, Sunderland 17.1, Swansea 13.6, West Ham 10.4, Wolverhampton 18.2.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 9, 1899.

C. A. **Crawford**, assistant surgeon, detached from the "Peoria" when put out of commission and ordered to the "Wabash."

H. B. **Fitts**, surgeon, detached from the Naval Hospital, Portsmouth, N. H., and ordered to the Marine Barracks, Sitka, Alaska.

C. M. **DeValin**, passed assistant surgeon, ordered to the Naval Hospital, Portsmouth, N. H.

C. J. **Decker**, surgeon, promoted to surgeon from December 12, 1898.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING JUNE 8, 1899.

Murray, R. D., surgeon. Leave of absence granted by Bureau letter of May 11, 1899, temporarily suspended and directed to proceed to New Orleans, La., for special temporary duty. May 31, 1899.

Carter, H. R , surgeon. To rejoin station at New Orleans, La. May 31, 1899.

Cumming, H. S., assistant surgeon. Leave of absence for twenty-seven days granted by Bureau letter of May 18, 1899, revoked from June 1, 1899. May 31, 1899.

Von Ezdorf, R. H., assistant surgeon. To rejoin station at New Orleans. La. May 31, 1899.

Fricks, L. D., assistant surgeon. Upon being relieved from temporary duty at Savannah, Ga., to report to commanding officer, South Atlantic Quarantine Station, for duty and assignment to quarters. May 29, 1899.

Hunter, S. B., acting assistant surgeon. Granted leave of absence for three days from June 7, 1899. June 1, 1899.

Wasdin, Eugene, surgeon. To proceed to Washington, D. C., to render report as member of a commission detailed by the President, for the scientific investigation of the cause of yellow fever. June 3, 1899.

Geddings, H. D., passed assistant surgeon. To proceed to Washington, D. C., to render report as member of a commission detailed by the President, for the scientific investigation of the cause of yellow fever. June 3, 1899.

Corput, G. M.. assistant surgeon. To proceed to Macon, Ga., for special temporary duty. June 3, 1899.

Gahn, Henry, hospital steward and chemist. To proceed to New York, N. Y., for special temporary duty. June 8, 1899.

Newbern, Walter, hospital steward. To proceed to the Tortugas Quarantine Station and report to medical officer in temporary charge, for duty and assignment to quarters. June 8, 1899.

PROMOTIONS.

McIntosh, W. P., passed assistant surgeon. Commissioned as surgeon, May 20, 1899.

Thomas, A. R., assistant surgeon. Commissioned as passed assistant surgeon, May 16, 1899.

Wickes, H. W., assistant surgeon. Commissioned as passed assistant surgeon, May 16, 1899.

Cumming, H. S., assistant surgeon. Commissioned as passed assistant surgeon, May 16, 1899.

APPOINTMENT.

A. W. **Slaughter**, of Wisconsin, to be acting assistant surgeon, for duty at Green Bay, Wis. May 29, 1899.

RECENT DEATHS.

Ezra R. Pulling, M.D., of New York, died on May 5th. He was the son of Dr. Josiah Pulling, of Galway, and was born in Saratoga County, N. Y., in February, 1828. He was graduated from the College of Physicians and Surgeons, New York, in 1853. During the Civil War he served as a surgeon in the army.

Lawrence Swan Woodhull, M.D., a descendant of General Woodhull, of Revolutionary fame, died in Brooklyn, N. Y., on June 9th, of pulmonary tuberculosis. He was born at Huntington, L. I., the summer home of his parents, and was in the twenty-sixth year of his age. He was graduated from the Long Island College Hospital in 1896.

BOOKS AND PAMPHLETS RECEIVED.

The Neuropathic Origin of Stuttering. By W. Scheppegrell, A. M., M.D., New Orleans, La. Reprint. 1899.

The Debt of the Public to the Medical Profession. By W. W. Keen, M.D., LL.D., Philadelphia. Reprint. 1899.

Epilepsy; State Institutions for Epileptics. By William Francis Drewry, M.D., Petersburg, Va. Reprint. 1899.

Some Reflections upon Cellular Physiology and Pathology. By Augustus A. Eshner, M.D., Philadelphia. Reprint. 1899.

Fourth Annual Report of the Metropolitan Water Board, January 1, 1899. Boston: Wright & Potter, State Printers. 1899.

Hernia. Clinical Lecture delivered at the New York Post-graduate Medical School. By W. B. DeGarmo, M D., New York. Reprint. 1899.

Surgical Anatomy of Hernia; Observations Thereon, with Results of Fifty Dissections. By Raymond Custer Turck, M.D., Chicago. Reprint. 1899.

Report of the Commissioner of Education for the year 1896–97. Volume II, containing Parts II and III. Washington: Government Printing Office. 1899.

Acetosoluble Albumin in the Urine: A Brief Review of the Literature on the Subject and a Report of Two Cases. By W. M. L. Coplin, M.D., Philadelphia. Reprint. 1899.

Original Articles.

AN EXPERIMENTAL RESEARCH INDICATING THAT PARAXANTHIN-POISONING IS NOT THE CAUSE OF EPILEPSY OR MIGRAINE.[1]

BY FRANZ PFAFF, M.D., BOSTON,
WITH INTRODUCTION BY JAMES J. PUTNAM, M.D., BOSTON.

Toxemic theories to account for the outbreak of functional nervous disorders have long exerted a fascination, proportionate alike to our sense of the inadequacy of other sorts of explanations, and to our growing recognition of the fact that it is to physiological chemistry that we must look for the next great step toward the solution of many of these mysteries. This fact will readily justify renewed discussion of the interesting theory proposed by Dr. Rachford, in 1895, to account for migraine and migrainous epilepsy, and other paroxysmal affections of the nervous system.

Dr. Rachford stated, as will be remembered, that he had found the urines passed immediately after such attacks as these to contain relatively large amounts of paraxanthin, which in normal urine is present only in minute proportions, and that these specimens showed a greatly increased toxicity when injected into mice.

The literature of the subject, so far as these particular observations are concerned, is not large. Dr. Rachford himself has published several papers,[2] and reference has been made to his observations by various writers at home and abroad, but, so far as I know, no control experiments have hitherto been reported.

The matter seemed of such importance that Dr. Pfaff agreed, nearly two years ago, at my request, to repeat Rachford's experiments, using specimens furnished by my private and hospital patients.

The analyses proved to be tedious and troublesome, usually requiring, as Dr. Pfaff will state, three months or more for completion, and it is partly owing to this fact and partly to the difficulty of obtaining suitable cases, especially of typical migraine, that we can offer but a small aggregate number of observations. Nevertheless, it is justifiable to base conclusions upon them, because the results obtained were satisfactory in the sense of being uniform.

Fourteen specimens of urine, of not less than four litres each, from four cases of migraine and ten of epilepsy[3] have been analyzed, each specimen representing the quantity passed during and immediately after an attack, the latter being collected until it made up the four litres. The epileptic patients were of different ages — young, middle-aged and elderly — and the case of one of the latter was of the sort that Rachford specifically refers to as important, that, namely, where epilepsy supervenes on typical migraine.

For the sake of comparison and in order to collect paraxanthin, five thousand litres of essentially normal urine were obtained by Dr. Pfaff from prisoners in the Suffolk Jail, and a large quantity from patients in the Massachusetts General Hospital.

The experiments did not confirm Dr. Rachford's conclusions as regards paraxanthin, and did suggest another possible cause of the toxic symptoms which he observed in the guinea-pig and mice experiments.

We wish to express our appreciation of Dr. Rachford's courtesy in aiding in the research by suggestions and by sending us one of his final fluids.

Whatever may be the conclusion in regard to the particular point here at issue, the only way in which the truth can be arrived at is by investigating each new lead that suggests itself, and then by comparing our results.

Unfortunately, even when toxic substances are found in the excretions in association with attacks of nervous symptoms, it cannot be confidently asserted that we have to deal with a cause rather than with an effect of the outbreak or of the outbreak's cause. There are many pitfalls to be avoided, as every one must admit who takes the pains to read the cautious, critical statements of those who participated in the debate at Berlin, last summer, upon the poisons of intestinal origin, before the Congress for Internal Medicine.

James J. Putnam.

The method which we followed[4] for isolation of paraxanthin from urine was exactly the same which Solomon had used, and which Dr. Rachford had also adopted in his experiments.

The main outline of this method is as follows: The earthy phosphates are precipitated from the urine by ammonia. After standing some time, twenty-four hours, the clear urine is separated from the precipitates by decantation. This ammoniacal urine, freed from phosphates, is precipitated by silver nitrate. The resulting silver precipitate of the different xanthin derivatives is washed with water till the wash-water contains only traces of chlorides and is no longer of urine color. These washed silver precipitates are suspended in water, decomposed by sulphuretted hydrogen, and filtered. The filtrate is then concentrated to a smaller bulk. On cooling, a deposit forms of uric acid and other impurities, from which the clear liquid is separated by filtration. The different xanthin bodies — dissolved in this solution — are precipitated now for the second time with silver nitrate, the solution having been previously made alkaline with ammonia. The resulting precipitate is washed, and finally dissolved in hot nitric acid of specific gravity 1.1. On cooling, a precipitate forms containing the double salt of hypoxanthin, whereas similar salts of paraxanthin and xanthin remain in solution. The latter salts are precipitated in the form of simple silver salts from their solution in nitric acid by ammonia. The resulting precipitate is washed repeatedly with water and again decomposed with HS and filtered, and the filtrate evaporated to a small bulk. By a process of fractional concentration the xanthin is separated from the paraxanthin. Both these substances may be so obtained in solid crystalline form.

Dr. Rachford did not isolate the paraxanthin contained in the final solution. He only separated out the xanthin by concentration, and so obtained at last a solution which he supposed to contain paraxanthin, and this solution he called the "final fluid." He claims, however, that urine passed by patients during and after an attack of migraine or migrainous epilepsy or kindred diseases yields a "final fluid" containing paraxanthin in enormously increased quantity (so that a drop of such "final fluid," if injected into mice, may produce poisoning identical with that following an injection of paraxanthin), whereas the "final fluid" obtained from urine passed between the attacks does not contain an increased quantity of paraxanthin. The quantity of urine which is necessary for analysis, according to Dr. Rachford, is usually three litres, though a smaller quantity will sometimes give positive results. Dr. Rachford draws the conclusion from his experiments that migraine and kindred disorders, which he specifies, are caused by paraxanthin poisoning. I may add here, that Solomon, to whom we owe most of our knowledge of the presence of paraxanthin in normal urine, claims that from one thousand litres of normal urine one gramme of paraxanthin may be obtained; that is to say, one litre of urine contains about one milligramme of paraxanthin. He advises that for detecting this substance fifty to one hundred litres of urine should be taken, since if small quantities are used it may easily happen that no paraxanthin at all will be found in the final solution. Solomon himself failed occasionally to find paraxanthin in quantities of urine varying from six to ten litres.

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[1] Read at the meeting of the Association of American Physicians, May, 1899.

[2] See Transactions of the Association of American Physicians, 1895-1897.

[3] One of these specimens, fifteen litres in amount, represented the mixed urines from a number of children of the Epileptic Hospital, Baldwinville.

[4] This research was made at the laboratories of the Harvard Medical School and the Massachusetts General Hospital.

As already remarked, Dr. Rachford did not isolate the paraxanthin from his "final fluid," relying mainly on his experiments on animals to detect its presence. He injected small quantities of the final fluid into mice or guinea-pigs subcutaneously. In certain cases the final fluid produced in the animals experimented upon a very marked increase of the reflex excitability of the central nervous system, and he then concluded that this fluid contained paraxanthin in increased quantity. The animals showed in these cases very soon after the injection convulsive movements which were followed by clonic contractions of all the skeletal muscles. Dyspnea and gasping respiration were also present.

In order to become familiar with the process of isolation of paraxanthin from urine, we extracted this substance from five thousand litres of normal urine — collected from the inmates of different prisons in Boston. We obtained from this large amount of urine paraxanthin in quantities corresponding to the results which Solomon obtained, but we could not find any difference between the quantity found in the normal urine and that in urine collected from the different patients.

In a few instances paraxanthin crystals could be detected with the microscope in the residue of the "final fluid" obtained from the urine of these patients. But that substance was never obtained, even from six litres of such urine, in sufficient quantity to justify the assumption that it could account for such toxic symptoms as had been observed to follow the injection of a few drops of the "final fluid" into mice; and moreover no such toxic symptoms occurred, provided the fluid was free from impurities such as chlorides, nitrates, ammonium compounds, and other inorganic substances.

In the tedious process of the preparation of the so-called "final fluid" from urine, such impurities are not easily gotten rid of. But the absence of these impurities — which could interfere with the physiological test upon animals — must be clearly proven before any importance can be attached to physiological experiments done with such an indefinite body as a "final fluid" represents.

It will be remembered that, in the preparation of the final fluid, the different xanthin bodies which are present in normal urine are repeatedly precipitated from their ammoniacal solution by silver nitrates. The silver precipitate of these xanthin bodies is a very voluminous precipitate and retains ammonia and ammonium salts very tenaciously. To free the silver precipitates from the adherent ammonium compounds it is often necessary to wash repeatedly with distilled water for three and four weeks continuously. Otherwise the final fluid may contain ammonium compounds in such quantities as would vitiate the conclusions to be drawn from the experiments upon animals.

With one of our "final fluids," from the urine of an epileptic patient, we obtained symptoms of poisoning in mice which corresponded to those Dr. Rachford had seen in his experiments. But on examining more closely the fluid used in this experiment we discovered the presence of a large quantity of ammonium compounds which had remained in consequence of imperfect washing of the silver precipitates of the different xanthins. As soon as we had eliminated these ammonium compounds, the fluid lost its toxic property, the quantity of xanthin bodies being too small to produce any effect. The toxic effect of the impure final solution had obviously been due to the ammonia it contained and not, as we at first supposed, to an increase of paraxanthin.

The fact that the contamination with ammonia may in fact have accounted for Dr. Rachford's result is shown by our observations on the one "final fluid" which Dr. Rachford kindly sent us for examination. This fluid produced the characteristic toxic symptoms which Dr. Rachford had claimed as due to paraxanthin poisoning, but it contained 17 per cent. of ammonia as impurity. After we purified it so that it no longer contained ammonia it had no toxic action on mice. On the other hand a watery solution of ammonium chloride containing ammonia in such quantities as they were found in Dr. Rachford's final fluid produced in mice symptoms identical with those of the fluid itself before precipitation of the ammonia.

The difficulty of separating the adherent ammonium compounds from the silver precipitates of xanthin and paraxanthin and of obtaining an ammonium-free "final fluid" for the experiments on animals had evidently been encountered by another investigator. We received, namely, a "final fluid" prepared in a hospital in Canada, with the request to test it for the presence of paraxanthin. This fluid gave the action on mice which Dr. Rachford had described, but it contained over 20 per cent. of ammonia as impurity and no paraxanthin.

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SUBSEQUENT HISTORIES OF ARRESTED CASES OF PHTHISIS TREATED AT THE SHARON SANITARIUM.[1]

BY V. Y. BOWDITCH, M.D., BOSTON.

Gentlemen of the American Climatological Association: — My excuse for offering you a short paper upon a subject which I have often touched upon at these meetings has both a personal and professional nature; personal because of my appreciation of the frequent and cordial encouragement I have received from members of this society; professional because I think I am right in believing that the results obtained at the Sharon Sanitarium in the past eight years have justified the hope that incipient phthisis can be arrested and remain so in a good percentage of cases, even in our insalubrious New England climate, without the special use of specific remedies other than the insistence upon hygienic and dietetic rules such as can be best obtained in a well-regulated sanitarium for this purpose. It would be a trite and oft-repeated tale were I simply to give results of work at this small institution after the brilliant and much larger records of those now well known throughout the medical world, but it must be remembered that the Sharon Sanitarium has been, in certain particulars, unique, in that it is situated near a large city, not far from the sea, at no special altitude, in our changeable and damp New England climate, with no pretence at the selection of a region specially suited for lung troubles other than what may be found in almost any hilly town, namely, a southern exposure on gravelly soil, as free as possible from dampness, and with protection by hills and woods from the harshest winds. Hence I feel I am justified in presenting the following histories, hoping that by so doing I can still further stimulate the now rapidly growing conviction that similar institutions are needed throughout the country.

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[1] Read at the Annual Meeting of the American Climatological Association in New York, May 9, 1899.

The title of my paper will explain my belief that it is of use not only to know how lasting the effects of any one special method of treatment may be in a treacherous disease like consumption, but also to find out if possible the probable cause of recurrence of disease where it has unfortunately so happened, and thus learn by future effort to correct the mistakes made by our patients after they have passed from under our immediate supervision with the disease in an arrested state.

Since the opening of the sanitarium in February, 1891, up to September, 1898, 36 cases have been discharged as "arrested cases."

From the fact that the last two of these were at Sharon only a comparatively short time, and as not a year has elapsed since their discharge, they are not included in this paper. We will consider then only 34 cases, and for the sake of convenience I have divided these into four classes, as follows:

Class I.	Those who have died since leaving Sharon, 6.
Class II.	Those who have not been heard from lately, 1.
Class III.	Those who are living in active work, and apparently well, 24.
Class IV.	Those who have had a slight return of their symptoms, but are still active, and from outward appearances well, after adopting similar methods to those taken before, 3.

All of these cases except two had definite, although in some cases very slight, signs in the lungs, with varying histories of cough, expectoration, loss of flesh, malaise and hemoptysis. Although bacilli were found in the sputa of only 12 cases, yet the physical signs in the others were similar to those which, under unfavorable hygienic conditions, we usually find develop bacilli in the sputa later. Of the two cases in which the signs in the lungs were not definite, one had shown symptoms of marked anemia, debility, cough without expectoration, but was only considered a suspicious case. The other had bacilli in her sputa previous to her entrance. It will be impracticable to attempt to read the histories of these 34 cases, but in the published paper a tabulation has been resorted to for those who may wish to see the more detailed accounts. Of the six who have died, however, since their discharge, a short history will be instructive and of interest.

The first case (M. S.) was one of rather advanced fibroid phthisis for whom I had little hope other than amelioration of the most troublesome symptoms. There were marked signs of trouble in the right lung (dulness, râles and harsh respiration), annoying cough, with profuse expectoration containing bacilli, and more or less fever. To my surprise, however, at the end of three months the cough and expectoration had ceased, the temperature was normal, and the patient, against advice, resumed her former occupation; but a few months later, after swallowing ammonia by mistake, having an attack of la grippe, and developing two tapeworms, she had a return of the symptoms and died about two years ago, after a slow decline.

The second case (A. E.) was a teacher, with definite signs (dulness and moist râles) in the top of the right lung, who at the end of five and a half months seemed by outward appearance to be well, the cough and expectoration having ceased. Entirely against urgent advice she left the sanitarium, resumed her teaching, and before the end of the year died suddenly from some cause which the physician in attendance was unable to explain. Without doubt, I think the disease had begun again in consequence of her resuming her laborious work in a badly-ventilated school-room in the city.

The third case (L. McL.) had had very marked signs in the right lung, which had improved decidedly previous to her entrance in October, 1892. At the end of four months all cough had disappeared, the faintest possible signs could be heard in the right apex, and she left the sanitarium against advice, and resumed very hard work as a seamstress and was lost sight of. Indirectly the news of her death from some unknown cause was heard about a year later.

The fourth case (F. A. B.) showed very clearly the influence of residence in a damp, unhygienic house. The patient had marked signs in the base of the right lung, with all the symptoms of tubercular disease, including bacilli in the sputa. After a stay of eleven months she left, the picture of health, with the disease apparently arrested. For eight months she remained in a healthful sunny home in the country, apparently perfectly well. Finally, against my most urgent advice to herself and her family, she returned to her home near the sea, with exactly the same conditions of dampness and lack of sun. In three weeks she suddenly developed an acute process in her lung, and went rapidly downhill and died not long afterwards.

The fifth case (S. C.) was of special interest because of the fact that she came at two different times to the sanitarium (1893) with distinct evidence of tubercular disease in the lungs (bacilli, râles, etc.), and twice all the symptoms disappeared in a period of twenty-one months. The patient had to undergo twice after leaving the sanitarium severe uterine operations. Previous to the second, at the City Hospital, Dr. A. L. Mason examined her lungs (1895) and could find no trace of disease. The patient suddenly died after the operation from unknown cause, and no autopsy was allowed. That the pulmonary trouble had been arrested there was not the least doubt, however. Whether the ovarian and uterine disease was of tubercular nature or not was not known.

The sixth case (M. J. T.) entered in November, 1894, with cough and questionable signs at the left apex, but having no bacilli in the sputa. The cough

	Time of entrance.	General symptoms.	Stage of disease.	Part affected.	Length of stay in Sanitarium.	Time elapsed since discharge.	Bacilli in sputa.	Result.	Remarks.
1 M. S.	Feb., 1891	Cough for three or four years, with sputa.	Somewhat advanced.	Upper portion of right and to less degree the upper left. (Dulness, harsh respiration and a few râles.)	3 mos.		Yes.	Cessation of cough and sputa and fever.	Resumed former occupation of typewriting. Reappearance of symptoms. Gradual failure. *Died*, 1897.
2 A. E.	Mar., 1891	Cough for several months, with slight hemorrhages.	Incipient stage but well-marked.	Slight dulness and moist râles in right upper chest.	5 mos.		Yes.	Cessation of cough and fever.	Resumed teaching. Remained fairly well until December, 1892. *Died suddenly December* 1, 1892. Cause unknown; probable return of disease.
3 J. W.	June, 1891	Cough for a year or more. Had been treated with Koch's tuberculin.	Somewhat advanced but had nearly lost cough before entrance.	Upper portions of both lungs; larynx had healed ulcerations. Râles dry in both apices with harsh respirations.	3 mos.	7 yrs.	No.	Cessation of cough. Cicatrices in larynx. Voice hoarse.	Still living in Boston, and at last accounts very well as far as pulmonary symptoms are concerned.
4 J. R. W.	July, 1891	Bad family history. Cough, hemoptysis for several months before entrance.	Incipient.	Clicking râles in both apices, with slight dulness.	1 yr.	7 yrs.	No.	Cessation of all active symptoms.	Since married and has a healthy child. Living in Newton and very well.
5 N. M. B.	Oct., 1891	Cough, mucopurulent sputa. Loss of flesh and strength for several mos.	Incipient.	Slight signs in both apices. (Râles with slight dulness.)	6 mos.	7 yrs.	No.	Cessation of cough and sputa. Gain of 28 pounds.	Sent by Dr. J. Ellery Stedman. Has lived in Dorchester since in a different house. Occasional colds, but, as a rule, very well. Patient examined in 1899 and nothing new had developed.
6 G. E. M.	Nov., 1891	Cough, sputa, hemoptysis, loss of flesh and strength for several months previous.	Incipient.	Slight dulness in left apex.	4 mos.	7 yrs.	No.	Cessation of cough and hemoptysis. Gain of 8 pounds.	Sent by Dr. Sheldon, of Lynn. Has remained well since. Married later.
7 J.A.McD.	Apr., 1892	Cough, little sputa, hemoptysis, loss of flesh and strength for months.	Incipient.	Faint râles in both apices, with slight dulness in left front and right back at top.	5½ mos.	6½ yrs.	No.	Cessation of cough and sputa. Gain of 8½ pounds.	Went home against advice, but later went to Canada. Has married and had septicemia after childbirth and typhoid fever. Recovered from both. Once had return of hemoptysis. When last seen, râles were heard in left apex, but patient was feeling very well. Living near Boston.
8 M. L.	Apr., 1892	Cough, scanty sputa, loss of flesh and strength.	Incipient.	Faint râles in right apex.	5½ mos.	6½ yrs.	No.	Cessation of cough and sputa. Felt perfectly well.	Resumed former hard occupation of dressmaking against advice, but has remained very well until lately when slight hemoptysis and persistence of râles persuaded her to cease work. Now doing well at Rutland, Mass.
9 A. R. L.	May, 1892	Cough, scanty sputa, malaise and loss of flesh. Bad family history.	Incipient.	Râles. Slight dulness at left apex; later in right apex and in lower right back, with dulness.	2 yrs.	5 yrs.	No.	Cessation of cough and other abnormal symptoms. Gradual clearing of râles at left apex. Few dry râles in right apex. Gain of 27 pounds.	Sent by Dr. C. Ellery Stedman. One sister died just before patient came to sanitarium, of phthisis and later an adopted sister and brother. Patient has remained perfectly well. Exercises in open air every day.
10 L. A.	July, 1892	Cough, sputa, loss of flesh and strength; anemia for months; hemoptysis.	Incipient.	Râles at right apex.	2 yrs.	5 yrs.	Yes.	Cessation of all abnormal symptoms. Gain of 33 pounds.	Perfectly well since. Has been in active work in and near Boston nursing.
11 L. H.	Oct., 1892	Cough, hemoptysis frequently, malaise and loss of flesh for months.	Incipient.	Clicking râles in both apices.	2⅔ yrs.	4 yrs.	Yes.	Cessation of abnormal symptoms. Clicking râles not so prominent. Seventeen pounds gain.	Persistence of cough for many months after entrance. Gradual improvement. Returned to home near the sea against advice, but kept up sanitarium methods and has remained perfectly well since.
12 L. McL.	Oct., 1892	Cough, profuse sputa. Great loss of flesh and strength, with marked amelioration of signs and symptoms before entrance	Rather advanced signs in one lung with decided improvement.	Slight dulness and dry râles in right apex. Râles in right lower axillary region.	4 mos.		No.	Cessation of cough and sputa. Felt better than for years before. Disappearance of râles in right apex.	Resumed hard work for several months. Lost sight of, but death occurred from some unknown cause suddenly about a year later. *Died*, 1893.
13 F. A. B.	Jan., 1893	Cough, sputa, malaise, loss of flesh for several mos.	Somewhat advanced.	Râles in right apex. Dulness, bronchial respiration and râles in right base.	11 mos.		Yes.	Cessation of cough and sputa. Felt perfectly well.	Remained well for eight months while living in a sunny, dry house in the country, away from the sea. Against advice returned home later to damp house near sea. Acute process developed in three weeks, and symptoms all reappeared. *Died July*, 1895.
14 S. C.	Jan., 1893	Cough, sputa, malaise, loss	Incipient.	Slight dulness in right apex, with	1 yr., 9½ mos.		Yes.	Cessation of cough and expectora-	At end of nine months cough and expectoration had ceased.

	Time of entrance.	General symptoms.	Stage of disease.	Part affected.	Length of stay in Sanitarium.	Time elapsed since discharge.	Bacilli in sputa.	Result.	Remarks.
14 S. C.		of flesh, etc., for several months.		faint, indistinct crumpling râles.				tion. Apparently well except for uterine difficulty.	Went to Vincent Hospital for uterine treatment. Cough returned and patient re-entered sanitarium. Patient remained a year with entire disappearance of pulmonary symptoms. Again obliged to enter hospital for operation. *Died from shock of operation December 1895.*
15 H. Q.	July, 1893	Cough, sputa, malaise, loss of flesh and strength for several mos.	Incipient.	Slight dulness in middle of right back. Moist râles.	11 mos.	4¾ yrs.	Yes.	Entire cessation of cough and expectoration at the end of 8 months Gain of 37 pounds.	Left feeling perfectly well. Has lived in the country since, with no return of symptoms.
16 M. N. S.	Oct., 1893	Cough, hemoptysis, loss of flesh for mos.	Incipient.	Slight dulness right apex. Broncho-vesicular respiration.	5½ mos.	5 yrs.	No.	Cessation of symptoms.	Went to live in Southern California. Not heard from since short time after departure, when apparently well.
17 M. W.	Jan., 1894	Cough, sputa, malaise, loss of flesh. Hemoptysis.	Somewhat advanced.	Dulness with râles over most of right lung. Few at left apex.	17 mos.	4 yrs.	Yes.	Entire cessation of cough, sputa, etc., for months before leaving sanitarium.	Living now in town of Sharon, without definite return of pulmonary symptoms at last accounts.
18 R. B.	May, 1894	Cough, sputa, malaise, etc., for months.	Incipient.	Dulness, jerky respiration and tenderness right apex. Slight fever.	13¼ mos.	4 yrs.	No.	Cessation of cough and fever.	Still living in suburbs of Boston. No return of pulmonary symptoms.
19 E. V. M.	July, 1894	Cough, loss of flesh; expectoration for months. Bad family history.	Incipient.	Dulness both apices with faint explosion of râles. Tubular respiration.	21¼ mos.	3½ yrs.	Yes.	Entire cessation of cough, sputa and fever for months previous to discharge. Picture of health. Gained 15 pounds weight.	Went to Minnesota, returned to Boston two years ago. Six months ago had no cough or expectoration. Somewhat run down by uterine difficulty.
20 M. J. T.	Nov., 1894	Cough two mos. Expectoration. Loss of flesh.	Incipient.	Questionable sign left apex.	2¾ mos.		No.	Entire cessation of cough, sputa.	Patient left against advice. Resumed hard work. Symptoms reappeared. Rapid progress of disease. *Died a few months later.*
21 L. E. W.	Jan., 1895	Cough, slight sputa. Loss of flesh and strength. Anemia for several mos.	Incipient.	Harsh respiration in both apices in back. Faint, fine, dry crepitation near spine of left scapula.	4 mos.	4 yrs.	No.	Disappearance of all abnormal symptoms, except prolonged expiration at both apices.	A few months ago reported she had been perfectly well since.
22 H. G. H.	Jan., 1895	Loss of flesh, constant malaise. Previous cough, with slight expectoration.	Incipient.	Previous to entrance Dr. G. G. Sears found moist râles in left apex. At entrance decided broncho-vesicular respiration in both apices, with increased voice front and back.	4 mos.	4 yrs.	No.	Cessation of abnormal symptoms. Slight harshness of respiration in both apices.	Patient since lost sight of, but a year after discharge was apparently well.
23 D. S.	May, 1895	Cough with slight expectoration for many months. Loss of flesh, etc.	Incipient, but well marked.	Dulness in left apex. Râles over all of left. A few at top of right.	17 mos.	4 yrs.	Yes.	Cessation of cough and sputa. Very marked improvement in all conditions; dry râles in left top persisting. Gain of 21 pounds weight.	Still living and in very good health in country suburbs of Boston. Physical examination in March, 1899, showed no increase of pulmonary signs.
24 M. P. B.	May, 1896	Cough, sputa, malaise, loss of flesh, etc., several mos.	Incipient.	Dulness and faint moist râles in right apex.	12¾ mos.	3 yrs.	Yes.	Cessation of cough and sputa. General condition excellent. Eighteen pounds gain in weight.	Went to live in country in northern New York State. A few months ago wrote that she never felt better.
25 B. F. M.	May, 1896	Cough, sputa, loss of flesh and strength three months. Father, mother, 2 brothers died of phthisis.	Incipient.	Slight dulness in right apex, expiration prolonged. Faint râles in left apex.	15½ mos.	1¾ yrs.	Yes.	Disappearance of all abnormal symptoms except slight dry crepitation in lower left axillary region several months previous to discharge.	Living in Florida now and perfectly well since discharge. Case remarkable considering that every member of immediate family died of phthisis.
26 A. G. C.	June, 1896	Cough, slight sputa, loss of flesh, strength, anemia some time before entrance.	Suspected incipient only.	Respiration, broncho-vesicular.	6 wks.	1 yr., 10 mos.	No.	Disappearance of abnormal symptoms.	This case is the only one which was doubtful and yet had many of the symptoms of cases which, if allowed to go on, usually develop pulmonary disease.
27 N. A. C.	July, 1896	Cough, sputa, loss of flesh and strength for months. Slight hemoptysis.	Incipient.	Respiratory murmur increased, and whispered bronchophony. ? râles at left apex.	12¾ mos.	1 yr., 10 mos.	Once doubtful.	Disappearance of abnormal signs, except slight change from normal in apices.	Has remained well since, not having resumed confining occupation. Respiration at right apex when examined some months ago, decidedly broncho-vesicular, but patient was perfectly well.
28 A. K.	July, 1896	Cough, sputa, loss of flesh; malaise, etc., for several months.	Incipient, but well marked.	Râles, slight dulness in both apices.	9 mos.	2 yrs.	Yes.	Improvement in physical signs and general symptoms. Discharged	Patient discharged not as an arrested case, but was obliged to leave. Afterwards lived in the country doing only

	Time of entrance.	General symptoms.	Stage of disease.	Part affected.	Length of stay in Sanitarium.	Time elapsed since discharge.	Bacilli in sputa.	Result.	Remarks.
28 A. K.								as "much improved."	light work. Two months ago wrote that after keeping up sanitarium rules she had had no cough or expectoration for over a year and felt perfectly well. The case has been therefore classed as "arrested."
29 M. E. A.	Dec., 1896	Cough, slight expectoration; loss of flesh and strength for several months.	Incipient.	Some dulness and crepitation in lower left chest.	9 mos.	2 yrs.	No.	Disappearance of abnormal symptoms and felt perfectly well.	Resumed former occupation with confining work. Slight return of symptoms later. Re-entered sanitarium, where she now is without definite symptoms in chest, with slight cough without expectoration.
30 S. K. C.	Mar., 1897	Severe hemoptysis as a child. Cough over a year. Loss of flesh and strength.	Incipient.	Harsh respiration in both apices, especially on right; whispered bronchophony, coarse crepitation in lower right.	8 mos.	1½ yrs.	No.	Disappearance of abnormal symptoms. Prolonged expiration in right top. Faint dry râles in right base. Gain in weight 31¼ lbs.	Resumed, against advice, work in restaurant in Boston. At last accounts working hard, not feeling very strong.
31 J. E. P.	May, 1897	Slight cough for two years; slight expectoration, malaise; loss of flesh.	Incipient.	Faint clicks in both apices. Respiration broncho-vesicular in right apex behind.	3½ mos.	1¾ yrs.	No.	Faint clicks in left apex. Disappearance of cough and sputa. Patient feeling well.	Patient left against advice, but changed occupation and has remained well since.
32 J. A. M.	Oct., 1897	Cough, expectoration; great loss of strength and flesh.	Incipient.	Coarse, faint râles, slight dulness in lower left axillary region and back. Faint bronchial respiration.	11½ mos.	9 mos.	Yes.	Complete cessation of all abnormal symptoms. Slight dry râles heard in lower left chest. Patient feeling and looking perfectly strong and well.	Patient at first prostrated and confined to bed for weeks, after nursing husband who died of phthisis. Now living in the country and has remained well since with exception of slight cold lately.
33 C. B. M.	Oct., 1897	Slight cough, occasional bloody expectoration; loss of weight and strength for months.	Incipient.	Faint râles in both apices.	5½ mos.	1 yr.	No.	Cessation of all abnormal symptoms.	Patient now living in the country and writes she has no cough and feels better than for years.
34 Mrs. C.	May, 1897	Cough and expectoration for several weeks; loss of weight and strength.	Incipient.	No definite signs in chest, but just previous to entrance bacilli found in sputa.	3½ mos.	1¾ yrs.	Yes.	Cessation of cough and marked improvement in general condition.	Left sanitarium to go to Maine woods. Since then has remained perfectly well.

and signs disappeared completely and the patient insisted upon leaving, against urgent advice, resuming her previous hard, confining work as a domestic. A few months later she appeared again with all the signs of tuberculosis in the left lung, including bacilli in the sputa and went rapidly downhill and died a few months later.

As an offset to these cases, allow me to mention two which show what can be done when different methods are adopted after leaving the sanitarium. H. Q. entered in July, 1893, with the usual signs of incipient phthisis in the right apex and with bacilli in her sputa, having been told by a physician in Ireland that she probably never would recover. For several months the cough and tuberculous sputa persisted, but finally ceased, and fourteen months later she left the sanitarium a magnificent specimen of health, having gained over thirty pounds in weight, the râles and bronchial respiration in the right apex being supplanted by a somewhat harsh respiration only. She was fortunate in obtaining a position as domestic in a kind family in the country where her friends made her exercise frequently in the open air, and during the past four and a half years she has not only made a visit to her old home in Ireland, where she joyously told me she "showed herself to the doctor who had told her she had got to die," but she frequently visits the sanitarium "to brace up the girls and show them how well she got."

Another case (G. M.) contracted phthisis doubtless by nursing a brother dying with that disease. Every member of her immediate family, five in number, had died of phthisis. Râles in both apices and bacilli were found upon entrance in May, 1896. After a stay of fifteen and a half months, all traces of the disease, except some lack of tone in the apices, disappeared. She left the sanitarium the picture of health, having had no cough or sputa for months. We obtained positions for her in Florida during the succeeding winters and she has returned to Boston in the summers. Up to the present time she has had no symptom of the return of the disease, it being now over two and a half years since the cough and expectoration ceased. She now lives in Florida.

I could cite the cases of others similar in character who have been away from the sanitarium even longer than these just mentioned; one having been seven years ago discharged, who, with slight signs at both apices, cough, hemoptysis, etc., is now, from all accounts, perfectly well, but I must refer you to the tabulated results instead.

In every case strenuous effort is made to get the patients not to return to the same conditions under which the disease developed. Being all of them more or less dependent upon their own efforts, the task is not always an easy one, but a little energy in this direction will often accomplish the desired end.

I am aware, as I have said in my two previous papers, giving the results of treatment at the sanitarium[2] that some may challenge the results because of the failure to find bacilli in some of the reported cases. I can only say in reply that the patients have been carefully observed and none taken where the symptoms were not such as experience teaches us usually develop the more definite signs. I feel, too, that I can say with justice that although the work accomplished at the sanitarium is comparatively small, yet from that very fact observation of individual cases has been made possible to prove what can be done on a larger scale.

A word as to methods pursued at the sanitarium. Although two or three of the so-called "specifics" have been resorted to occasionally the chief factors in the treatment have been the insistence upon fresh air, judicious exercise, and good, wholesome food, medicines having been used somewhat sparingly, and as mild adjuncts for general treatment only.

What then can we learn from these observations? Not only that a larger percentage of cases of incipient phthisis can be arrested by sanitarium treatment than is possible by treating patients in our offices or in their homes, but that this can be done near all our great cities, and that lasting results can be accomplished when patients are not allowed to go back to former unhealthful conditions.

That I may live to see the day when similar institutions are not the exception, but the rule, near every large city and town throughout the country is my earnest desire.

Massachusetts, I am proud to say, has been the first to take the step in this direction, by establishing the State Hospital (or Sanitarium, as I prefer to call it) for Consumptives, at Rutland, Mass. New York will soon have a similar State institution, and I cannot think that other States will be slow to follow their example.

Clinical Department.

A CASE OF HYSTERIA; RECOVERY AFTER PRAYER.

BY S. G. WEBBER, M.D., BOSTON.

THE following case presented many of the typical symptoms of hysteria. The convulsions were clearly hystero-epileptic in character; the prodromal stage was short, a mere look or change of expression, with dilatation of the pupil, three to five or rarely ten seconds' duration; the first and second stages of the attack were well marked and characterized by the convulsions described by Richet; the third stage was wanting in all the attacks which I saw; the fourth stage was occasionally present, and sometimes was of long duration. The hemianesthesia was clearly hysterical in character. There was paralysis, due to the hysteria. The vomiting must also be referred to the same.

At no time was there any doubt as to hysteria being the chief element in causing the symptoms; though the long continuance of the paralytic symptoms led me to finally question whether there might not be some organic change concealed by the hysterical symptoms. The duration of the vomiting and the paralytic symptoms, with the sudden and complete recovery add to the interest of the case.

Mrs. S. came under my care in 1893. She was then twenty-seven years old. When an infant she had rather poor health until two years of age; after that she was well until fifteen. There was no marked hereditary tendency, so far as could be learned. From fifteen to twenty she had fainting spells, which would recur at short intervals for two or three months; then for a while she would be free from attacks. In these she suffered from short breath, then became unconscious. Sometimes the attacks would be cut short if water were thrown in her face. At twenty she had a severe fit, which lasted some hours, and was said to have been very violent. After three or four months she had one fit after another during two or three days without recovering consciousness between. Subsequently she had these fits every week or two, not of so long duration. The earlier fainting spells continued to recur. When twenty-three or four years old she lost the use of her left leg; had to use crutches. Nearly a year passed before she could walk unaided. The arm was not affected. After this she had fewer attacks and was pretty well. The earlier faint spells continued.

In June, 1892, she was married. Five weeks later the fits returned with increased frequency and severity. Coitus aggravated the attacks. She was never pregnant. She left her husband and came home to her aunt. October 27th, she had an attack of vomiting, with tinnitus, lost the use of her legs, was delirious most of the time. There was also loss of sensation in the left leg and sometimes in the left hand. She could not raise her head off the pillow until December. The attacks were more frequent during the catamenial periods. The catamenia were regular, flow considerable.

Her aunt described an attack. Her legs were drawn up, she could not straighten them; the arms are thrown about; the hands clenched beat about; face turns purple, and it is in spasm, "works"; the tongue and lips are bitten; the eyes blink and roll up; the head twitches sideways, is thrown back; body bends back in an arch. The back part of the head seems sore. There is no warning, no scream; she may cough before the attack; sometimes before an attack she has a sense of fear. From the beginning to taking the position of opisthotonos is a few seconds. She does not talk during an attack; immediately after she sometimes seems in a dead faint; sometimes will continue a conversation begun previously; sometimes her mind wanders and she talks nonsense; then the convulsions are very likely to be repeated, and after that she comes out all right.

For three years there had been constipation; micturition was generally easy, sometimes difficult; sometimes the urine dribbled away all the time.

Examination. — She could move her left leg but little, the right somewhat more freely, but not to normal extent. She turned in bed very slowly; she could not stand. Sense of touch and pain were nearly or quite absent in the left leg and lower part of the body; diminished in left arm and left side of the face; diminished in right leg and right side of the body; normal in right arm and right side of the face. Field of vision was limited on the left, left pupil usually large; smell gone on left, ammonia not noticed on left; hearing was always defective on right side, now defective on left too. Knee-jerk stronger on the left, plantar reflex stronger on the right. No tenderness over the abdomen; back was tender over the spine and on each side of the spine from neck to lower lumbar region.

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[2] Three Years' Experience with Sanitarium Treatment of Pulmonary Diseases, etc., Boston Medical and Surgical Journal, July 12 and 19, 1894; The Treatment of Phthisis in Sanitaria near our Homes, Transactions of the Massachusetts Medical Society, 1896.

I studied her condition and experimented with various sedatives for about a week. The convulsions numbered twenty or twenty-five in twenty-four hours. I then hypnotized her. She readily yielded and was moderately influenced; she came into a cataleptic condition, heard only my voice and answered only me, unless I told her she could hear and answer another, then she readily conversed with any one with whom she was thus put in communication, until told that she could not hear them. On waking she remembered everything I said, nothing said by others with whom she was not in communication. When hypnotized she could move the left leg much more freely than when awake.

It is unnecessary to give in detail the progress in improvement. Gradually the fits diminished in frequency until at one time she was entirely free for more than two months, from February 2, 1894, to April 22, 1894, passing the March catamenia without one, and also the June period without any.

On June 27, 1893, I first saw her in an attack. Without warning she became rigid, arms extended, hand clenched, thumbs in palms, possibly a slight tremor like a shudder ran through the body and limbs, teeth were tightly closed, tongue not protruding, then opisthotonos, forearms at right angles with body, a very slight throwing about of the arms; the contractions were chiefly tonic. She came to with a sigh and was soon herself. Pressure over the ovaries and on back had no effect.

On January 29, 1894, she walked the length of the bed. She had not stood on her feet for fifteen months. After this she sat up part of the day, gained more power over the left leg, was able to walk more. There was less pain at the menstrual periods. I made a vaginal examination and found nothing abnormal except a moderate vaginismus. Dr. Davenport kindly examined her and found nothing abnormal.

In 1895 a tumor appeared in the breast; she went to the City Hospital to have it removed: it proved to be benignant. While at the hospital she had no convulsion.

After leaving the hospital she had much nausea and vomited much. The vomiting increased and was not controlled by any treatment. I expected it to cease after a few days or weeks, but it did not. I did not at any time see her vomit, but was told that whatever she took into her stomach soon returned. This continued until March, 1898. She became much emaciated. The old spasms or fits appeared at each monthly period. They always ceased when I hypnotized her. If I saw her soon after they began she had only a few; if it was one or two days or more before I saw her, she had from fifteen to twenty-five in each twenty-four hours.

During the last year and half of this time she had another kind of spasm, consisting in a contraction of the abdominal recti muscles. This and the vomiting were uninfluenced by hypnotism.

I saw many of the original fits during the nearly three years of vomiting. When I hypnotized her the pupils, at first large, became smaller, and finally the eye closed as she was in the hypnotic sleep. When she was about to have a fit her expression changed; if partially hypnotized the pupils suddenly dilated, if conversing she stopped talking. There was then a slight motion, much as if one suddenly takes a deep breath or gives a gasp, then a rigid stiffening of the whole body, with tremor, followed by opisthotonos, sometimes extreme, sometimes moderate, with flexion of the legs on the thighs. Consciousness was lost. Recovery was either sudden or gradual, when gradual she seemed dazed for a while, when sudden the muscles relaxed, she opened her eyes, stared around a few seconds, rubbed her eyes and was ready to talk. The whole attack lasted from one to three or four minutes, the dazed condition rarely more than five minutes. After the attack I could hypnotize her as readily as at other times.

On a Sunday towards the last of March, 1898, she vomited much blood and could eat nothing for three days. She felt that her condition was worse than previously. Then she had a feeling "as if God would help her," and sent for her pastor to come and pray with her. He complied with her request, not expecting anything unusual. While he was putting on his overcoat to leave, she rose from her bed and walked two or three times across the room. She felt as if "the blood was coursing all through her." She ate a good supper, did not vomit. She gained in flesh and strength afterwards, and after four weeks came to my office to see me.

At that time, April 21st, the pupils were sluggish to the light; no limitation of field of vision, sensation to prick was rather exaggerated on face, hands and legs, and to pinching on arm and leg.

To a moderately strong tap on ligamentum patellæ there was a strong jerk, especially on left; a light tap caused a distinct flexion of the leg on the thigh.

The progress of the patient was steadily towards recovery until after the operation, after which hypnotism seemed to relieve the original spasms as fully as at any time previous to taking ether, but the other symptoms were not influenced, that is, the patient expected the old symptom to be relieved; the newer symptoms were outside of her previous experience and were not relieved. One disturbing element needs to be noted: after the vomiting had continued some weeks her aunt often expressed doubt as to recovery. This doubt was expressed while the patient was in hypnotic sleep. She may have expressed the same doubt to the patient when I was not present. However that may have been, the patient though apparently not hearing her aunt, may have received an impression in the hypnotic state, which may have had the stronger influence because not coming to the surface in consciousness. I think I made a mistake in not giving the aunt stronger assurances of the patient's recovery at those times.

The recovery, I think, is easily explained. I have not mentioned that an additional reason for recovery developed. The aunt's husband had been ill some time, having had a slight attack of apoplexy. He had become nervous, querulous, and my patient had become tired of him and was much annoyed; she desired to get away into the country for the summer. Here was a very strong reason for getting well. I do not mean to say the patient was conscious of its influence, but I believe it had an influence.

I had for a long time once in four weeks or so suggested recovery from all the unpleasant symptoms; finally the patient was possessed with the conviction that she would recover under certain conditions — if her pastor prayed with and for her. The recovery was due to auto-suggestion. The repeated suggestion during hypnotic sleep finally had its influence in enabling her to formulate for herself a conditional suggestion. Her pastor's prayer was a help to her and by its aid the recovery became a fact. The same result would have followed the use of any other agency upon which she might have rested her faith and by means of which the auto-suggestion could have been made effective — a Christian Science séance — a visit to one of the shrines in Europe noted for healing power — the use of water of Lourdes, any of these or many other agencies would doubtless have had the same result.

During her long illness she had heard much about being healed in answer to prayer. This doubtless increased the efficiency of the condition under which the auto-suggestion became operative.

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Medical Progress.

RECENT PROGRESS IN GENITO-URINARY SURGERY.

BY F. S. WATSON, M.D., AND PAUL THORNDIKE, M.D., BOSTON.

SARCOMA OF THE TESTICLE.

George Martin Kober[1] quotes the statistics of Professor Gurlt of tumors of all sorts observed in Vienna from 1855 to 1878, the total number being 16,637. Of this number there were 64 carcinomas and 45 sarcomas which involved the testicle, the total number of carcinomas being 11,131, and of sarcomas 848. To these Kober adds a collection of all cases of sarcoma of the testis that he could find reported in German and English literature during the past eighteen years, the number of which is 114, which he has tabulated and analyzes as follows:

In 32 of the 114 there is a distinct history of traumatism. In 18 the disease occurred in retained testicles, or those of delayed descent; in one of the former the testicle had been subjected to the pressure of a truss. Two patients were syphilitics. In one case mumps had occurred involving a non-descended testis. Four cases were complicated with hernia.

Attention is called to the history of traumatism, or retained testicle in 43 per cent. of the whole number of cases.

With regard to age, out of 107 cases of this series in which the age was mentioned, 9.3 per cent. only occurred under ten years of age, none between ten and fifteen; 5.6 per cent. occurred between the ages of sixteen and twenty; 71 per cent. between twenty and fifty, and about 14 per cent. after the age of fifty. In five cases the disease involved both testicles.

The following table gives the time of development or duration of the disease in 99 cases in which it was noted:

Congenital origin	5 cases
From a few weeks to 6 months	28 "
From 7 months to 11 months	14 "
From 1 year to 2 years	24 "
From 2 years to 5 years	18 "
Of 6 years' duration	2 "
Of 15 " "	2 "
Of 16 " "	1 "
Of 20 " "	3 "
Of 23 " "	1 "
Of 26 " "	1 "
Total,	99 cases

Symptoms. — There is usually a history of a slow and painless development of the tumor for a considerable time, then a sudden increase in size, often with lancinating pains. The tumor retains the shape of the normal testicle. The misleading apparent diminution in size in the tumor sometimes is noted as being due to the periodic absorption of fluid extravasations.

Ulceration and fungus growth occurred in only one of the 114 cases. With growth of the tumor there is enlargement of the spermatic vessels and scrotal veins. Secondary deposits in the cord are rare. Implication of the iliac and lumbar glands is more common. The differentiation in diagnosis between sarcoma and orchitis is not easy. Sometimes it is difficult to distinguish the disease from old hydrocele or hematocele. The prognosis is grave in all varieties of the condition.

Ultimate results of 113 cases: 37 not noted; 41 died from within a few days to three years after being operated upon. In 23 of the fatal cases death occurred from secondary tumors in various organs. Eleven patients lived from seven to twelve months after the operation, five patients from sixteen to twenty-four months, and two for three years, but these last also perished from secondary growths. In 35 cases still living the time elapsing after operation was as follows: 18 from one to twelve months, 6 from thirteen to twenty-six months, 2 for four years, 6 between six and ten years, and two from ten to fifteen years.

In one case there was recurrence of the disease six years after operation, but the patient was reported well seven months after second operation.

A CASE OF URETERAL CALCULUS DIAGNOSTICATED BY RÖNTGEN RAY.

Longard[2] reports a case where a patient who had previously had removed from the bladder a stone which had been detected by the Röntgen ray returned for treatment on account of symptoms of hydro-pyonephrosis of the left kidney. Another examination with the Röntgen ray gave a dark, well-defined shadow about the size of a hazel-nut, eight centimetres to the left of the symphisis pubis. Upon operation (nature of which is not noted) nothing was found in the bladder but a hard body the size of a hazel-nut; it was felt behind the bladder near the orifice of the left ureter. An attempt to crush this stone did not succeed. Further details are not noted.

THE VALUE OF RÖNTGEN RAY DEMONSTRATED IN A CASE OF KIDNEY STONE.

Alsberg[3] reports that a renal calculus, which was clearly shown by skiagraph, was found in the lower half of the kidney by nephrolithotomy in the exact place in which the Röntgen ray had shown it to be. It weighed eight grammes and was a comglomeration of small oxalate calculi.

ON SKIAGRAPH IN CASES OF KIDNEY STONE.

Wagner,[4] with regard to the detection of kidney stones by the x-ray and photographs of them, speaks of the uncertainty. Upon this point he refers to the work of Von Ringel, who states that it is impossible to obtain photographs of phosphatic renal calculi. On account of the hitherto declared unsatisfactory results the writer reports a contrary experience in two cases of renal calculus. In the first the Röntgen photograph showed four calculi in the left kidney; one was large, having the shape and size of the kidney pelvis, the others of the size of peas. Operation showed that the stones corresponded exactly with those seen in the photograph.

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[1] American Journal of Medical Sciences, May, 1899, p. 535.

[2] Centralblatt für Chirurgie, February 11, 1899.

[3] Loc. cit., February 25, 1899.

[4] Loc. cit., February 25, 1899.

In the second case the photograph showed a stone the size of a walnut in the left kidney; in this case a perinephritic abscess was also present. After the abscess had been incised the patient died. The autopsy revealed the stone exactly as shown by the photograph. A careful chemical examination by Professor Rohmann showed both calculi to consist principally of the phosphates of lime and magnesium, the rest consisting of small quantities of phosphate of ammonia.

These two cases demonstrate the possibility at any rate of successful photography of phosphatic kidney stone.

In order to compare the photographs of stone of different compositions he took three, each of which was as nearly as possible of uniform chemical composition, and one mixed stone having an oxalate nucleus and phosphatic coating, placed them upon one photograph plate and let the x-rays act upon all at the same time. This he did at several different times, in order to avoid error, the results being always the same, namely, that the phosphatic stone gave the strongest and best picture, the uric acid the weakest and least good.

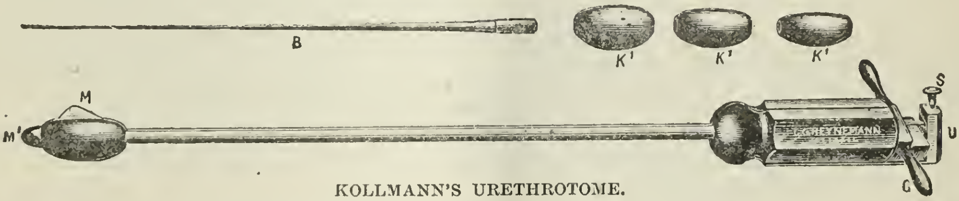
In a second experiment all four stones were placed upon the abdomen of a well-developed twenty-eight-year-old patient and were photographed through the entire thickness of the body. The result was excellent; all four stones were clearly seen; the weakest picture was that of the uric-acid stone, the best of the oxalate, the phosphatic stone standing between the two.

The experiments were made with vesical calculi. Because Wagner did not have a sufficient number of chemically pure renal calculi at his disposal constitutes no objection, inasmuch as the chemical composition of both is the same. He has recently photographed vesical calculi in eight patients; the pictures were excellent in all. The stones were for the most part composed of mixed uric acid and phosphates.

Wagner thinks that the negative results obtained by other experimenters may be owing to the less good quality of their tubes, or to too long exposures of the plates in the case of phosphatic calculi, which he points out should be decidedly shorter for them than for other stones.

Appended to the above article is a short reference to the work of Dr. Charles C. Leonard, of Philadelphia, in x-ray photography for kidney stone, which comprises 17 cases. In 11 of these, stone was clearly shown and its presence subsequently confirmed by operation or autopsy. In the remaining six there was failure to detect. Leonard attributes much importance in the detection of renal calculus to the character of the tubes used, of which he states there are two kinds, soft and hard, which have different powers of light penetration. The soft one he states to be that which is appropriate for the direction of renal calculi.

Alexander B. Johnson, of New York, reports in the *Annals of Surgery* for January, February and March, 1899, the renal cases operated upon at Roosevelt Hospital from January 1, 1890, to October 1, 1898. His article is entitled a "Contribution to the Surgery of the Kidney," and is a report of 86 renal cases, all operative, and all most carefully studied and edited. The report is a valuable addition to the statistics of modern renal surgery. It is interesting to note that of 9 cases of renal tuberculosis, 8 were treated by nephrectomy. Of these 8, 7 survived the operation, and of these 7 are apparently perfectly well six years after the operation. In drawing conclusions from the cases reported in this article, the author considers the relative value of the transperitoneal and lumbar routes for approaching the kidney and gives some space to questions of operative methods in these cases. He also comments upon five cases in which exploratory incisions were made but no renal disease found.



KOLLMANN'S URETHROTOME.

B Elastic bougie, with screw-head, which can be substituted for—
M Detachable nut.
$K^1K^1K^1$ Exchangeable bulbs, from 18 to 30 F.
M Projecting knife (exposed).
K Bulb attached.
G G Bar to protect knife.
S Screw to fasten knife.
U Clamp.

Any successful operation for exstrophy of the bladder deserves mention, and the one recorded in the *Annals of Surgery* for April, 1899, page 497, is most interesting, and is much to the credit of Dr. De Forest Willard, who was the operator in this case. He succeeded in making a bladder capable of holding several ounces of urine in a child of five years, but as yet has been unable to make any urethral canal along the dorsum of an epispadic penis, his two attempts having both failed.

M. Pierre Héresco[5] includes under malignant tumors of the kidney not only carcinoma and sarcoma but certain forms of adenoma, the malignity of which has, he says, been determined by recent histological work. He has collected 165 cases of nephrectomy for cancer, 53, with 9 deaths, in children, and 112, with 23 deaths, in adults, a mortality of 17 per cent. in children and 20½ per cent. in adults. Héresco says that he has followed the remote results in 24 out of 53 cases in children and in 63 out of 89 in adults, and that these cases were cured as far as the operation went. He concludes from a study of these cases that nephrectomy for malignant tumor of the kidney is as well borne by children as by adults in cases early in the development of the disease, and when there are no adhesions and no generalization of the disease in other organs.

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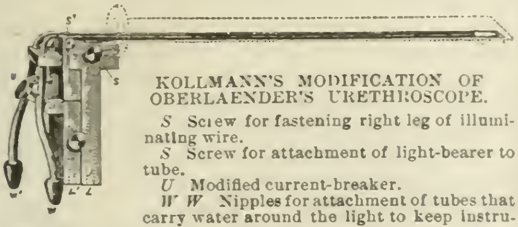
[5] De l'Intervention Chirurgicale dans les Tumeurs Malignes du Rein, Thèse de doctorat, 7 Mars, 1899.

M. Xavier Delores[6] reports two good cases where resection instead of castration was performed with success and comments interestingly upon them.

NEW INSTRUMENTS.

The accompanying cut taken from the *Journal of Cutaneous and Genito-Urinary Diseases* for May, 1899, represents a new urethroscope, for which is claimed a great advantage due to the position of the light at the distal end of the endoscopic tube and close to the mucous membrane which is to be examined.



KOLLMANN'S MODIFICATION OF OBERLAENDER'S URETHROSCOPE.

S Screw for fastening right leg of illuminating wire.

S Screw for attachment of light-bearer to tube.

U Modified current-breaker.

W' W Nipples for attachment of tubes that carry water around the light to keep instrument cool.

L L Bars into which conducting cables from light battery are inserted.

The cut on the preceding page also taken from the above-named journal shows the construction of a new urethrotome which its advocates think will prove of value in the treatment of resilient strictures which do not yield gracefully to dilatation.

Drs. Albarran, Hallé and Legrain[7] give a most complete and valuable record of the history of the bacteriology of bladder infection up to the present time (October, 1898).

The authors classify the organisms producing bladder infections, consider at some length the avenues by which they enter the bladder and finally deal with the effects of the bacterial invasion both upon the urine and upon the bladder itself.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.

One Hundred and Eighteenth Anniversary.

At the Section in Medicine, which met on Tuesday, June 13th, the following papers were read: "The Clinical Importance of a Knowledge of the Size of the Heart," by Dr. F. H. Williams, of Boston; "The Diagnostic and Prognostic Value of the Pulse," by Dr. Henry Jackson, of Boston; "The Prognosis of Nephritis; A Study of Five Hundred Cases," by Dr. R. C. Cabot, of Boston; "The Rôle of the Staphylococcus in Skin Diseases," by Dr. C. J. White, of Boston.

At the Section in Surgery the papers were: "Intussusception," by Dr. J. C. Munro, of Boston; "The Completed History of a Case of Gastrectomy; Remarks upon the Surgery of Gastric Cancer," by Dr. M. H. Richardson, of Boston; "A Lantern-slide Demonstration of the Dissemination of Carcinoma," by Dr. W. T. Councilman, of Boston.

On Tuesday, June 13th, at 8 o'clock P. M., in Paul Revere Hall, the Shattuck Lecture was delivered by Dr. James J. Putnam, of Boston, on

MENTAL THERAPEUTICS; FROM THE STANDPOINTS OF THE PHYSICIAN AND PSYCHOLOGIST.

At the close of the lecture a reception was given by the Society to the officers of the Society.

The papers read before the annual meeting on June 14th were the following: "Improvements in Army Medical Science, suggested by Experience in the Late War," by Dr. W. H. Devine, lieutenant-colonel and medical director Second Brigade M. V. M. late major and brigade surgeon, U. S. V. "A Report of the Blood Examinations in Typhoid Fever and in the Malarial Fevers," by Dr. J. J. Curry, acting assistant surgeon, U. S. A., pathologist to the U. S. A. General Hospital, Savannah, Ga.; "A Hospital Clearing House," by Dr. C. J. Blake, of Boston; "Demonstration of Parasites in the Blood and Tissues in Malaria," by Dr. J. H. Wright, of Boston; "Methods of Conducting Volunteer Aid in Foreign Territory," by Dr. E. G. Brackett, of Boston.

Drs. E. G. Cutter and J. H. McCollom gave a stereopticon exhibition illustrating clinical medicine and small-pox.

The Annual Discourse was given by Dr. Edward H. Bradford, of Boston, on

A CENTURY OF EXPANSION IN MEDICINE.

At the annual dinner, which followed the Discourse, the President, Dr. Edwin B. Harvey, spoke as follows:

Fellows of the Massachusetts Medical Society: — It is my pleasant duty as your presiding officer to welcome you to the festivities of this hour which so fittingly bring to a close this annual meeting. In the history of this organization, covering nearly a hundred and twenty consecutive years, but little, if anything, has been written which to-day we could wish to eliminate. It is essentially a history of a country of medical progress. On every page are inscribed the names of earnest, scholarly men, who have been not only an honor to the calling of their choice but leading spirits in the noblest of professions, pursuing ever lines of thought and investigation which have led to discoveries and inventions most important to humanity.

The names of the Warrens and the Bigelows and the Bowditches and the Jacksons, ever revered and ever a delight to memory, will remain an inspiration, pointing to higher culture and better service.

Our ranks to-day are filled with earnest men and women, trained in the schools and experienced in practice, practitioners independent in thought and unhampered by creed or dogma. In the science of medicine there is neither school nor sect.

I congratulate you, fellows, upon the complete success of this annual meeting. The papers and discussions of yesterday and to-day have been of such high order as to entitle them to a place in the general literature of the profession for the widest possible consideration.

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[6] Ueber die Orchidectomie Probe Incision des Testikels mit partieller Abtragung bei Tuberculose der Hoden, Centralblatt für die Krankheiten der Harn und Sexuel Organe, Band x, Heft 1.

[7] Des Infections Vésicales, Annales des Maladies des Organes Genito-Urinaires, Novembre, 1898.

In another hour we enter upon a new society year. The officers and committees of the Society just elected will assume the responsibilities of their respective offices. I commit to their hands the keeping of this organization, old in years yet young in spirit.

In 1781 the Commonwealth chartered the Massachusetts Medical Society and empowered it with important functions relating to public health and the practice of medicine. A large majority of the educated practitioners in the Commonwealth at the present time belong to its membership.

Whence chiefly has arisen that influence and wise counsel which have made the Commonwealth renowned for its excellent sanitary code, for its safeguards against contagious diseases, for the liberality and efficiency shown in the administration of its hospitals, and for the high standard set for those who desire to pursue the art of healing, I need not in this presence attempt to indicate.

I have the pleasure to present to you His Excellency, Roger Wolcott.

GOVERNOR WOLCOTT, who was received with prolonged applause, alluded to the number of times he had appeared before the society in the past, and said that he should have hesitated to accept their invitation for this year had not Dr. Harvey assured him that no one except himself would remember anything he had said on the former occasions.

He went on to speak of the progress of medical science during the history of the Society, and of the saving of life which had resulted, especially in zymotic diseases, in which the mortality had been reduced by at least one-half.

The home of the poor man, as well as the home of the rich, had been made more safe and secure. The mortality in children had been wonderfully reduced. Not only had life been made safe and comfortable at our city homes and in the crowded summer resorts in the country by modern sanitary science, but the importance of the application of the principles of sanitation to life in camp and field had been amply demonstrated in our late war with Spain. Upon the faithfulness with which these principles were carried out would depend the health of armies, and consequently our success or failure in future warfare.

The PRESIDENT, in introducing the next speaker, the Rev. Alexander McKenzie, D.D., spoke as follows:

It has been said that a wise general always takes note of the force and direction of the winds, or of the course of the tides, that he marshals them for service in his cause.

So the skillful physician in battling disease brings to his aid every influence that shall make for victory. He recognizes the great fact that man is something more than bone and flesh, that his continuance in health, or his recovery from suffering, depends much on forces of which chemistry takes no note. There is surely a border line whereon our own blends with that other profession we sometimes call divine.

REV. ALEXANDER MCKENZIE, D.D.: I count it a high honor to be allowed to stand here and to say a few words to you from that side of our profession to which I belong. I do not call it "our profession," simply because we are all doctors. The name is at times confusing and I have been asked to perform duties which should have been brought to you. But in our great design we are of one accord. Our Master came to save men's lives, and that is our common calling. We may define life in different ways, but there is only one life, which comes from the one primal life, and is given to every living being. The measure of the life differs widely, but life is one, and it is to be kept true to the perfect life in which it has its origin. Our Master was often called the "Healer" in the old English thought and speech. The four accounts of his work present Him as helping men in their sicknesses and infirmities. One of the few biographies, and the one which has the widest range, was written by a physician, and his professional habit can be traced in his writing. It is true that Our Lord extended his healing into the realm of mind and spirit — you do the same, or your professional career would be needlessly limited. Science forfeits its right to the name when it puts a period after it. On our part we are not content in ministering to the mind and heart alone, but we know the intricate connection with the body in which they dwell, and seek to secure the bodily health which will be of benefit to the higher nature. Thus we work together, even with our specialties.

You do well in laying stress upon time, which becomes eternity by being infinitely prolonged, and you know the value of this world and seek to keep men in it. Our mission is not merely to prepare men to leave it, but to persuade them to live in it by the rules of truth and duty, which have no boundaries. We may have here the beginning of all the good we anticipate. I do not like Dr. Holmes' saying that this world is "a vast planetary ambulance, a travelling hospital." It is a place to live in, to work in; a place to enjoy and to make pleasant for those who are less favored. You are wise when you hold the costly treasures of the past, and enlarge them with new discoveries, and illumine them with new light. In this way you make advances in the knowledge of the truth and in the skill to make use of it. We are working on parallel lines and the end should be the wholeness of men, so far as we are permitted to accomplish it. We work with nature and with the aid of nature, in humility and obedience. We are all ministers; not our names and titles, not our diplomas and distinctions, but our service marks the dignity of our high calling. We devote our life to the saving and exalting of life, and in this is our honor and worth.

The PRESIDENT then called upon ATTORNEY-GENERAL KNOWLTON, who said that he had intended to speak to the Society on the subject of irregular practitioners of medicine, but owing to the lateness of the hour, he would postpone his speech until next year.

DR. H. L. BURRELL, the next speaker, also postponed his remarks till next year, in order to allow adjournment in time for the excursion down the harbor. The dinner was then adjourned and a large number of the members availed themselves of the opportunity for the harbor excursion in the steamer J. Putnam Bradlee, which was greatly enjoyed, and was not interrupted by the short but violent shower which at one time threatened its postponement.

During the dinner several selections were sung by the Harvard Graduates' Glee Club, under the leadership of Dr. Richard C. Cabot.

UNIVERSITY OF GÖTTINGEN. — Dr. Erwin von Esmarch, professor of hygiene in the University of Königsberg, has been appointed ordinary professor of hygiene, to succeed the late Professor Wolffhügel.

THE MASSACHUSETTS MEDICAL SOCIETY.

Councillors' Meeting.

The annual meeting was held at Mechanic Building, Boston, on Tuesday, June 13, 1899.

The meeting was called to order at 5 p. m. by the President, Dr. Edwin B. Harvey. One hundred and seven councillors indicated their presence by signing the roll.

The Secretary read the names of 168 Fellows admitted since the last annual meeting, and of 46 whose deaths had been recorded.

It was voted, on recommendation of the Committee on Membership and Finance, that $1,000 of the surplus in the treasury be distributed among the district societies.

The Committee on Publications reported that Dr. William H. Welch, of Johns Hopkins Hospital, Baltimore, Md., has been appointed to deliver the Shattuck Lecture at the annual meeting of the Society in 1900.

The following report on schools and contagious and infectious diseases was presented:

The Committee appointed to consider the position which schools should maintain in reference to contagious and infectious diseases beg leave to offer the following report, which they advise the council to adopt provisionally for a period of two or three years, and at the end of that time to accept such amendments as seem necessary.

Following a last exposure, provided no illness has resulted, one may return to school after a quarantine lasting as follows: In yellow fever, 5 days; influenza (grippe), 5; diphtheria, 12; measles, 16; small-pox, 18; typhoid fever, 18; typhus fever, 18; chicken-pox, 19; scarlet fever, 20; German measles, 21; whooping-cough, 21; mumps, 25.

When a pupil has had scarlet fever, he may return to school seven weeks from the appearance of the eruption, if desquamation has ceased, the nose and throat are quite healthy and all complications are over, and disinfection of house, patient and belongings has been thoroughly done.

After measles, in three weeks from the appearance of the rash, if desquamation has ceased, and there is no cough, discharge from the ears, or inflammation of the eyes, and the house, clothes and belongings of the patient have been disinfected.

After mumps, at the end of twenty days, if all glandular swelling has disappeared, and there is no tenderness of the breasts or other part of the body.

After whooping-cough, when all spasmodic cough or whooping has ceased, or whenever cough has entirely left.

After German measles, in two weeks after the commencement of the disease.

After small-pox, when all the scabs are off, especially of the hands and feet, everything that has come in contact with the patient has been burned, and there has been thorough disinfection of everything else.

After chicken-pox, when all the scabs are off, especial care being taken to see that there are no scabs on the scalp, for which purpose the hair should be kept very short and the head thoroughly washed frequently.

After diphtheria, when two consecutive negative cultures from the nose and from the throat have been obtained. When no cultures are taken, a period of 18 or 20 days should elapse after the mucous membrane of the throat has assumed a normal appearance, provided there is no discharge from the nose, before the patient is released from isolation.

After yellow fever, influenza, typhoid fever and typhus fever, at the discretion of the attending physician, who must certify in writing that all danger of contagion is over and proper disinfection of everything has been done.

Elbridge C. Cutler, M. D.,
J. H. McCollom, M. D., } *Committee.*
J. F. A. Adams, M. D.,

Voted, That the report be accepted and printed in the "Proceedings."

The Committee on Nominations reported, and the following were chosen officers of the Society for the ensuing year: President, Dr. Edwin B. Harvey, of Westboro'; Vice-President, Dr. Charles M. Green, of Boston; Treasurer, Dr. Edward M. Buckingham, of Boston; Corresponding Secretary, Dr. Charles W. Swan, of Brookline; Recording Secretary, Dr. Francis W. Goss, of Roxbury; Librarian, Dr. Edwin H. Brigham, of Brookline. Dr. Arthur T. Cabot, of Boston, was chosen Orator for the annual meeting of the Society in 1900.

Voted, That the next annual meeting of the Society be held in Boston on the second Wednesday in June, 1900.

The following standing committees were appointed:

On Arrangements. — Drs. J. E. Goldthwait, M. Storer, S. Crowell, W. H. Prescott, F. G. Balch, J. C. Hubbard.

On Publications. — Drs. O. F. Wadsworth, G. B. Shattuck, H. L. Burrell.

On Membership and Finance. — Drs. F. W. Draper, E. G. Cutler, L. R. Stone, F. W. Goss, W. Ela.

To Procure Scientific Papers. — Drs. H. L. Burrell, A. K. Stone, F. H. Thompson, G. de N. Hough, H. W. Van Allen.

On Ethics and Discipline. — Drs. G. E. Francis, F. C. Shattuck, C. G. Carleton, E. Cowles, J. F. A. Adams.

On Medical Diplomas. — Drs. H. E. Marion, E. N. Whittier, O. F. Rogers.

On State and National Legislation. — Drs. E. B. Harvey, H. P. Bowditch, T. H. Gage, S. D. Presbrey, S. W. Abbott.

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AMERICAN MEDICAL ASSOCIATION.

Fiftieth Annual Meeting, held in Columbus, O., June 6, 7, 8 and 9, 1899, Joseph M. Mathews, M.D., of Louisville, Ky., President.

FIRST DAY. — GENERAL SESSION.

The general sessions were held in the Grand Opera House. The Association was called to order by the President at 10.30 a. m., and after the opening prayer by the Rev. Washington Gladden, of Columbus, the Address of Welcome was delivered by His Excellency, Governor Asa S. Bushnell. He stated that he had reason to feel more in sympathy with the medical profession than the great mass of the people, as in his youth he had been an apothecary. Referring to the various custodial institutions of his State, he brought forth hearty applause by his description of his efforts to remove these as far as possible from the influence of politics.

The Association was also welcomed to Columbus by his Honor, **MAYOR SAMUEL J. SWARTY.**

PRESIDENT'S ADDRESS.[1]

DR. HENRY D. HOLTON, in the absence of **DR. ALBERT L. GIHON**, read the report of the

RUSH MONUMENT FUND.

It showed that even after this long delay the fund only amounted to $10,582.02. Dr. Gihon asked to be relieved from further work on this committee.

THE REPORT OF THE TREASURER.

DR. HENRY P. NEWMAN, the treasurer of the Association, presented his annual report, which showed a balance on hand at the close of 1898 of $21,729.95.

THE MEDICAL CORPS OF THE ARMY AND NAVY.

The Philadelphia County Medical Society asked for the adoption of the following resolutions by the Association:

Be it *resolved* and recommended by the American Medical Association, (1) That the medical corps of the army and navy be enlarged to meet properly all demands that may be made upon them; (2) that the transportation of the medical supplies be under the control of the medical department; (3) that four sanitary inspectors be created, whose duty it shall be to examine into the sanitary condition of the camps and bodies of troops in transit, and advise in relation thereto; (4) that the Government establish a permanent camp-site, the selection to be subject to the approval of the surgeon-general, for use in the mobilization of large masses of troops; (5) that a professor of military hygiene be appointed at West Point to instruct the cadets in the principles of sanitation; (7) that the surgeons-general of the army and navy in time of peace and war be empowered to call into requisition the services of skilled specialists; (8) that the medical officers of the National Guard be subjected to rigid examination, both for admission to the service, and for promotion; (9) that the President of the United States be respectfully urged to recommend to Congress the establishment of an army medical commission, to be composed of physicians and sanitarians to be taken from military and civil life, including the surgeons-general of the army and navy, whose duty it shall be to prepare a report containing a detailed plan of a modern system to govern the medical department of the army and navy in peace and war.

Be it further *resolved*, That a committee be appointed by the President of the American Medical Association to wait upon and present these resolutions to the President of the United States for his favorable consideration.

The resolutions were referred to the Executive Committee for consideration, as were also several other similar resolutions.

THE "INDEX MEDICUS."

With reference to the important subject of continuing the publication of the *Index Medicus*, Dr. George M. Gould, of Philadelphia, moved that the following resolution be referred to the Executive Committee:

Whereas, The suspension of the publication of the *Index Medicus* is a deplorable event, which will result in greatly increased labor on the part of medical men in their literary work, and seriously hinder the progress of medical science, practical as well as literary,

Be it therefore *resolved*, That the Executive Committee of the American Medical Association appoint a committee of three members of the Association to take charge of the publication of the periodical, perfect plans for the same, and engage the service of an editor and of such editorial assistance as may be required; also to choose a publisher and make contracts with him for the printing, distribution, etc., of the work; all in such manner as to continue the high standard of accuracy and bibliographic usefulness so well established by the previous publishers,

Resolved, That the treasurer be instructed to pay all bills of such committee in payment of necessary expenses of such editing and publication, provided that this outlay does not exceed annually three thousand dollars.

On motion, the resolutions were referred to the Board of Trustees.

The general session adjourned shortly after noon.

SECOND DAY. — GENERAL SESSION.

COMMITTEE ON LEGISLATION.

The resolution calling for the appointment of a special committee on legislation, consisting of three members, residing respectively in Washington, D. C., Philadelphia and Baltimore, was referred to the Executive Committee.

NATIONAL BUREAU OF PUBLIC HEALTH.

The Executive Committee recommended, and the Association adopted, the resolution favoring the establishment of a national bureau of public health, with a cabinet officer at its head.

REORGANIZATION OF ARMY AND NAVY MEDICAL DEPARTMENTS.

The Executive Committee recommended the adoption of the resolutions introduced by the Philadelphia Delegation calling for radical changes in the medical corps of the army and navy, and they were adopted after having amended them so as to secure a direct appeal to Congress, and the appointment of a committee consisting of one member from each State having a medical society, and from the army, navy and Marine-Hospital Service, whose duty it should be to memorialize the President of the United States on this subject.

WOMEN MILITARY NURSES.

The resolution introduced by Dr. Gould was also adopted, indorsing the bill presented to Congress favoring the employment of women as military nurses in the army.

ADDRESS ON SURGERY.

DR. FLOYD MCRAE, of Atlanta, Ga., delivered this address, taking for his theme the "Surgery of the Alimentary Canal." He spoke of the very great value of salt solution, however introduced into the system, and recommended the use of rubber gloves, even though there was comparatively little risk of septic infection from the hands of the careful surgeon.

Speaking of gastrectomy, he said that there were now four cases on record of complete removal of the stomach, of which those of Drs. Brigham and McDonald, of San Francisco, were still living. He dilated on Roux's method of performing gastro-enterostomy. In this method, the abdomen having been opened the transverse colon is lifted up and the mesocolon opened widely, exposing the posterior wall of the stomach. The upper border of the jejunum was then divided between two Kocher's clamps, and the incision prolonged to the first arterial bifurcation. The upper portion is then wrapped in gauze and placed to the left side, while the lower part is drawn towards the opening in the mesocolon, and the end of the gut brought into contact with the stomach by an assistant. The operator then inserts three rows of sutures. Roux advises putting two or three sutures in the mesenteric incision to prevent internal strangulation. His patients were allowed champagne, milk and other liquids by the mouth a few hours after the operation. The speaker expressed the opinion that this method of Roux's was very nearly an ideal operation.

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[1] See page 537 of the Journal.

Speaking of penetrating wounds of the abdomen, he said that the experience in the late war showed that such wounds, when inflicted on soldiers who were fasting, were not nearly so dangerous as had hitherto been supposed, but this statement did not apply to civil practice. The great point in the treatment was to opperate promptly, as recovery followed inversely with the time elapsing between the reception of the injury and surgical interference.

He then described and recommended the method of circular enterorrhaphy devised by Dr. M. L. Harris, of Chicago. He stated that it could be done in twelve minutes, the essential feature being the invagination of the gut and the securing of a strong sero-fibrous union.

Taking up the subject of operation for typhoid perforation, he stated that he had collected 107 cases of this kind in which operation had been resorted to. Of these 85 had died, or a mortality of 79.43%. He thought it was fair to expect over 25% of recoveries if the operation were done within twelve hours after the occurrence of the perforation. The speaker then analyzed 2,903 cases of appendicitis reported during 1898 and 1899. Of this number 399 had died, giving a mortality of 13.74%. A tabulated report of this analysis was presented, giving the results in the various groups of cases. He was inclined to take the view that the mortality would be higher if the immediate operation were practised in all cases. He then described his personal experience with appendicitis, comprising 137 cases, and expressed the opinion that appendicitis was a surgical disease, and that every case should be considered strictly from a surgical standpoint.

ADDRESS ON STATE MEDICINE. THE MEDICAL ASPECTS OF CRIME.[2]

Dr. Daniel R. Brower, of Chicago, delivered this address.

THIRD DAY. — GENERAL SESSION.

REPORT OF THE TRUSTEES.

The trustees reported that the resolution made by Dr. Bailey, of Louisville, Ky., to the effect that a Grand Secretary be elected for the Association, had been referred to their board, inasmuch as it involved the expenditure of money. This resolution had received the most serious and careful consideration, and while the trustees felt convinced that a radical change in the manner of conducting the secretary's office was demanded, they preferred a substitute, and so recommended that the editor of the *Journal of the Association* should serve as the secretary without additional compensation. It was explained that in this way, without additional expense, the business of the Association could be carried on more promptly and satisfactorily. This report of the trustees was adopted by the Association.

REVISION OF BY-LAWS.

A committee of three was appointed by the President of the Association to arrange and codify the different articles and sections of the constitution and by-laws, and to see that the same were published before the next annual meeting.

NATIONAL DEPARTMENT OF HEALTH.

The committee reported that it had worked industriously for the furtherance of the Spooner bill, which had been indorsed by the Association, and that as this same bill had received, in addition, such hearty support in various other quarters, there was good reason for believing that success is near at hand.

DR. ALBERT L. GIHON.

The following resolutions were adopted:

Whereas, Dr. Albert L. Gihon has resigned the position which he has so long acceptably filled on the Rush Monument Committee,

Resolved, That the Association accepts this resignation with extreme reluctance and regret, and tenders its sincere thanks for the manner in which he has discharged the duties of this onerous office;

Resolved, That this action be spread on the minutes, and that a copy of the same be sent to Dr. Gihon.

RECOMMENDATIONS IN THE PRESIDENT'S ADDRESS.

The Executive Committee reported on the suggestions contained in this address. It advised against having a permanent place of meeting for the Association, and against having, for the present at least, a travelling secretary. The Association indorsed the recommendation of this committee, that in the future the custom should no longer be countenanced of holding clinics for the benefit of the Association, thus interfering with the regular sessions.

CONTROL OF TUBERCULOSIS.

In the matter of the control of tuberculosis, the committee recommended, and the Association adopted, the following preamble and resolutions:

Whereas, From carefully prepared statistics it is found that of the deaths from all causes between the ages of fifty and sixty years, one-third result from tuberculosis, and that one in fifty persons has this disease; and

Whereas, Competent authorities claim that under proper treatment one-fifth to one-fourth of those affected with tuberculosis may be cured; and

Whereas, European governments are actively engaged in stamping out the disease while the United States has done nothing;

Therefore *resolved*, That the President appoint a committee of five, with power to add to their number, who shall prepare a report on the nature of tuberculosis; its communicability and prevention; the more effectual means of controlling its dissemination; the advisability of establishing national and state sanatoria, etc.

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[2] See Journal, No. 24, page 570.

Resolved, That the report shall be presented to the Congress of the United States and the legislatures of the various States of the Union, and urging upon them that proper measures be taken.

VACCINATION.

In connection with this matter, the Association adopted unanimously, at the suggestion of the Executive Committee, the following:

Whereas, Small-pox was one of the most dreaded scourges of the earth prior to the general adoption of vaccination,

Resolved, That the American Medical Association strongly urges the adoption by local boards of health of laws requiring compulsory vaccination, and deprecates in the strongest way the efforts of those who are endeavoring to secure the abolition of compulsory vaccination; and

Resolved, That a copy of these resolutions be sent to every health board in the country.

THE SPREAD OF SYPHILIS.

The Executive Committee was of the opinion that the President's suggestions on this topic would be best carried out by referring the matter to the International Congress to be held in Brussels next September. It was so referred.

A CENTURY OF MEDICINE IN AMERICA.[1]

Dr. J. C. Wilson, of Philadelphia, delivered this address.

HOSPITALS AND HOSPITAL SHIPS.

Surgeon-General Sternberg described with the aid of numerous lantern-slides the United States hospitals and hospital ships now in service. Incidentally he made clear his position regarding the employment of women as military nurses. It was simply that he was thoroughly in favor of their employment in division and field hospitals, but objected to their presence in the camps and with moving bodies of troops.

FOURTH DAY. — GENERAL SESSION.

Dr. I. N. Love, of St. Louis, moved that part of the report of the Executive Committee providing for the printing of a list of the members of the Association in conjunction with the revised constitution and by-laws be eliminated, explaining that the Board of Trustees was of the opinion that this would be detrimental to the interests of the Association. After considerable discussion, the motion was laid on the table, and the announcement was made that the list of members would be published triennially as heretofore in the *Journal*, but not in pamphlet form.

The Association adopted the suggestion of the Executive Committee, that action should be taken looking to securing an appropriation from the United States Government to meet the necessary expenses of the delegation to the Congress for the Prevention of Syphilis and the Venereal Diseases, to be held in Brussels, Belgium, September next.

The following resolution was adopted at the suggestion of the Executive Committee:

Resolved, That no paper shall be placed on record for the consideration of any section unless an abstract of not less than fifty or more than three hundred words accompanies the title, and is placed in the hands of the chairman or secretary of the section at least thirty days before the time of meeting of the section.

Another resolution was passed, prohibiting in future the printing of the name of any author on the programme unless the title of his paper was also announced. It was stated that in the present programme there were about thirty names without the titles of papers.

On motion of **Dr. C. E. Ruth**, of Iowa, a vote of thanks was extended to **Dr. Atkinson** for his long, faithful and efficient services as secretary.

Dr. George M. Gould, of Philadelphia, reported on behalf of the Committee on Prize Competition for Meritorious Scientific Work that no essay had been received which, in the opinion of the committee, was worthy of the prize. The report was accepted and the committee continued.

The following proposed amendment to the Code of Ethics by **Dr. Q. C. Smith**, of Austin, Texas, was read:

To amend Paragraph 9, Article IV,

Resolved, That attending physicians are entitled to charge a consultation fee for each consultation in addition to visit fee, equal in amount to that ordinarily charged in similar cases by consulting physicians residing in the same city, locality or community where the service may be rendered.

Action was deferred for one year.

The Nominating Committee made the following selection of officers for 1900: For President, Dr. W. W. Keen, of Philadelphia; First Vice-President, Dr. C. A. Wheaton, of Minnesota; Second Vice-President, Dr. E. D. Ferguson, of New York; Third Vice-President, Dr. J. M. Allen, of Missouri; Fourth Vice-President, Dr. Middleton, of Iowa; Treasurer, Dr. H. P. Newman; Assistant Secretary, Dr. J. A. Joy, of Atlantic City, N. J. With the exception of the secretary, election for which office was deferred, the other officers were elected.

The meeting for 1900 is to be at Atlantic City, N. J.

The Chairman of the Committee of Arrangements is Dr. Philip Marvel.

The orators for next year are as follows: The address in medicine, Dr. J. E. Witherspoon, of Nashville, Tenn.; the address in surgery, Dr. W. L. Rodman, of Philadelphia, Pa.; the address in State medicine, Dr. Victor C. Vaughan, of Ann Arbor, Mich.

After some further routine business, the Association adjourned.

Recent Literature.

The Serum Diagnosis of Disease. By **Richard C. Cabot**, M.D. Physician to Out-Patients, Massachusetts General Hospital. New York: William Wood & Co. 1899.

The work upon the subject of serum reaction and serum diagnosis is at the present time in much too incomplete and unfinished a state to permit of the writing of a critical text-book upon this subject. But although our knowledge in regard to the nature and significance of the biological and chemical processes involved in the reactions is still chiefly theoretical, nevertheless the question of the significance of the reactions in regard to diagnosis and of the utilization of the phenomena in connection with practical medical work has been placed upon a secure empirical basis.

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[1] See Journal, No. 24, p. 565.

A collection, therefore, of the facts already established in regard to this method of serum diagnosis, such as Dr. Cabot has given us, is a most desirable and useful addition to medical literature.

The book opens with a general description of the phenomenon of agglutination, and a brief history of the discovery of this phenomenon and of the course of investigation which has been carried on in this regard up to the present time.

The author then passes to a description and discussion of the technique of the subject. The important question in this connection, the microscopic and macroscopic methods, the use of fresh and dried blood, the dilution and the time limits for the reaction, the essentials of a typical reaction, etc., are all fully discussed, and the investigations which have been made in regard to each of these questions appended. A full account of the preparation of cultures for the process, with a record of the investigations in regard to the effect of the virility of the culture, the race, the generation, the age, the purity, etc., is given.

The first part of the book ends with a discussion of the more or less theoretical questions of the origin and nature of the reaction, and the chemical nature of the agglutinative substance. In this the author agrees with Widal that the evidence so far obtained tends to support the theory that the reaction is a result of a condition of infection rather than of immunity in the ordinary sense of this term.

The second part of the book contains a full record of the results so far obtained in the utilization of the method of serum diagnosis in the disease in which the question has been most investigated, namely, typhoid fever.

The important questions of the actual value of the serum test in diagnosis of this disease, of the time of the appearance of the reaction, its duration, the relation of its intensity to prognosis, etc., are fully discussed, and the conclusions in these regards carefully worked out from extended tables of results and of experiments collected. These extended tables of cases here reported represent the most complete evidence in regard to the practical value of the method in clinical work that we possess.

Part III contains an account of the utilization of the serum diagnosis in the other diseases in which it has been investigated, such as glanders, cholera, yellow fever, pneumococcus infections, etc.

The book provides an excellent manual for reference for the general practitioner and the student of medicine.

The subject matter in regard to the practical utilization of the method, the technique and the record of the work in the investigation of typhoid fever is excellent, especially from the point of view of completeness. The only shortcoming in this part of the work lies in a certain lack of definiteness in regard to the final conclusions in several of the practical questions discussed. The reader is given the evidences for each of two opposing views in regard to some questions, and then left to his conclusions without any critical consideration upon the part of the author himself to aid him. The presence of rather more critical insight in the work would have made it of more value to the student.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JUNE 22, 1899.

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THE SHATTUCK LECTURE AND ANNUAL DISCOURSE AT THE MASSACHUSETTS MEDICAL SOCIETY.

THE Massachusetts Medical Society has been especially fortunate this year in having had at its annual meeting two discourses which dwelt rather upon the shortcomings of the medical profession than upon its achievements. Essayists and orators on such occasions are much too apt to be retrospective and sentimental regarding the great steps which have marked the progress of medical science in the last few decades, matters with which we are all familiar, and which none of us are likely to underestimate. Ether and antisepsis, germs and antitoxins will no doubt always give to the speaker an opportunity to rouse the enthusiasm of his hearers. Such enthusiasm we must certainly have; we must never for a moment forget the history of the past, through which we have come to our present state, and must be duly thankful to the perennial discourse, one of whose functions it is to remind us in eloquent language of the details of this history. At the same time we must as surely not forget that a certain complacency, to which such discourses are likely to give rise, is the most fatal bar to progress, and that, after all, the past is only of value as it helps toward greater accomplishment in the future. What we need is stimulus, and not a mere tickling of our pride, in what our forefathers may have done. Such stimulus can only come by a clear presentation of our shortcomings, of what we have left undone, and of what it is clearly our duty and privilege to do in the immediate future. The address which encourages a feeling of dissatisfaction with the present, and marks out lines of improvement based on experience, fulfils its true function, as the mere narration of events of the past, however revolutionary and however eloquently expressed they may be, can never do. As a profession, particularly in this country, we are not lacking in self-satisfaction, but we do need always the stimulus which comes from a sense of imperfect accomplishment.

This need was supplied in an admirable way both by

Dr. J. J. Putnam in his Shattuck Lecture on "Mental Therapeutics," and by Dr. E. H. Bradford in the Annual Discourse before the Massachusetts Medical Society on "The Expansion of Medicine." The spirit of the two papers was the same, in spite of the disparity of subject, and both showed that rare quality of critical dissatisfaction with things as they are, while recognizing perfectly the significance of things as they have been, which, as we have tried to show, makes the essence of a truly stimulating discourse. None could have heard either of these papers without a legitimate feeling of pride in the profession to which he belonged, and also without a conviction that the hope of the future lies in continued and unceasing effort.

Dr. Bradford sketched briefly the history of medicine and of medical education, with especial reference to America, and adduced statistics which showed our present condition. He regretted the multiplication of medical schools, and the motives of many of them, and told us in no uncertain voice that we in America were not living up to our possibilities and were deplorably behind in certain branches of medical science. His conclusions should certainly have had a stimulating effect upon any audience.

Dr. Putnam's remarks on "Mental Therapeutics" were also most timely. They were not such as could have prejudiced the most conservative believer in therapeutic limitation, nor could they by any chance have been misconstrued by the radicals into a desertion of the tried methods of practice by physical means. If we understand aright what Dr. Putnam and those who think like him maintain, it is simply that as scientific men we are bound to look at every side of the therapeutic problem, and be forever discontented until we have exhausted the possibilities of cure in every legitimate direction. To accomplish this end we must study the phenomena of mind with the same absolutely liberal yet tentative spirit that we study any other phenomena. We must apply the same criteria of judgment, and the same standards of analysis of facts that we would in any less subtle sphere; but this granted, our duty is plain — to push on toward the formulation of principles which may be of practical service in the treatment of many of the most distressing conditions to which man is liable. That mistakes are made, that enthusiasm overreaches itself and brings into discredit the cause it is trying to help, is self-evident, but it is just for these reasons that we would urge, with Dr. Putnam, systematic study directed to the end of building, at least, a foundation of fact upon which some sort of a superstructure may be laid. Dr. Putnam urged the desirability of preliminary work in psychology and philosophy for the medical student of the future. This does not imply that our coming students of medicine are to speculate as to the ultimate problems which philosophy offers for solution, nor need they have made up their minds as to the relative claims of materialism and idealism, but they are to be liberal minded men, who will realize more and more that the final questions of medicine will revolve about man as a human being, and not merely about man as a physical structure. The sort of preliminary training which the liberalizing effect of philosophical study gives, the student and physician of the future will doubtless require. There are evidences that the pendulum is swinging back in that direction.

Not long ago, in conversation with one of the most gifted men which the Harvard Medical School is training, he said: "Are we in our course to get no systematic work in the mental treatment of disease?" This man felt the want, which others have felt before him, of some sort of an expression of opinion on the part of his teachers, skilled in the treatment of the sick, of their method of handling sick men and not merely sick bodies. We do not for a moment presume to say that the subject is unmentioned at our best medical schools. On the contrary, it is much talked about under such vague headings as the "personality of the physician," or "tact," or the "effect of cheerfulness in the sick-room," but as yet we hardly go further. We offer to our student no course of study designed to inform him, in a systematic way, of what we know in these matters. They are never brought clearly and sharply to his attention, as is the action of opium on strychnia. It is not that individual teachers are not fully alive to the importance of such teaching, but as yet we see no evidence of concerted action toward a radical improvement, and until such concerted action comes we are confident the student will continue to go out from his medical course with a biassed mind, and one incapable of seeing the full scope of his therapeutic possibilities.

That the Shattuck Lecture before the Massachusetts Medical Society should have brought this really vital matter up for consideration is one of many signs that a systematic training in the principles and practice of mental therapeutics will before long find a place, and a dignified place, in our medical curriculum.

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MEDICAL NOTES.

The Queen's Cataract. — The newspaper report that Queen Victoria was to be operated upon for cataract by Dr. Pagenstecher, of Wiesbaden, is denied.

Plague at Alexandria. — Plague is spreading at Alexandria, where up to June 9th there had been twenty-three cases and seven deaths. The disease is also increasing in China, especially in Canton and the surrounding country.

Presentation of Books and Manuscripts. — Dr. Daniel G. Brinton, professor of American archeology and linguistics at the University of Pennsylvania, has presented to the University his entire collection of books and manuscripts relating to the aboriginal languages of North and South America. The collection represents the work of twenty-five years, embracing about 2,000 titles.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, June 21, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 50, scarlet fever 19, measles 71, typhoid fever 8, small-pox 2.

Bequests to Hospitals. — By the will of the late R. C. Billings, of Boston, a sum of about $900,000 is bequeathed to Charitable and Educational Institutions. Among the bequests to medical charities are the following: To Massachusetts General Hospital, $50,000; New England Hospital for women and children, Roxbury, $50,000; Massachusetts Charitable Eye and Ear Infirmary of Boston, $50,000; Perkins Institute and Massachusetts School for the Blind, $25,000; the Kindergarten for the Blind at Jamaica Plain, Boston, $10,000; Boston Lying-In Hospital, $10,000; Morton Hospital, Taunton, $10,000; Boston Home for Incurables, $10,000; Washingtonian Home, Waltham Street, Boston, $10,000; Massachusetts Infant Asylum, Jamaica Plain, $10,000; Boston Dispensary, Bennett Street, $10,000; Jamaica Plain Dispensary, $25,000. A singular bequest is that of $50,000 to the Massachusetts Institute of Technology, to found the "Billings Student Fund," with the understanding that any student receiving benefit from the fund is expected to abstain from the use of alcohol or tobacco in any of their varied forms.

The City Hospital Field Day. — The second annual field day of the staff of the Boston City Hospital was held at the Riverside Recreation Grounds on the afternoon of June 15th. The sports consisted of a base-ball game between surgical and medical teams, captained by Drs. Bottomley and W. A. Lane respectively, which was won by the medical team by a score of 9 to 4; a three-legged race won by Drs. Moser and Wormelle; one hundred yards' dash, the final heat was not run off owing to a shower; putting the shot, won by Dr. E. P. Starbird; a departmental relay race, which was won by the gynecological team, the pathological team being second and the medical third. The swimming race was won by Dr. W. A. Morrison, with Dr. Saunders a close second. The rain came so late in the afternoon as not to interfere materially with the enjoyment of the sports, as the field events were finished, except the final heat of the hundred yards' dash, which is to be decided at a future date, before the rain began. The audience were able to see the swimming race and an impromptu canoe tilt which followed from the club-house, without interference from the rain. After the swimming race lunch was served in the club-house, which ended a very enjoyable and successful afternoon's outing. Prizes for the various events were offered by Mr. A. Shuman, Dr. D. W. Cheever, Dr. G. H. M. Rowe, Dr. H. L. Burrell, Dr. Paul Thorndike and Dr. J. G. Blake. The officials of the meeting were: judges, Mr. A. Shuman, Dr. D. W. Cheever, Dr. G. H. M. Rowe; referee, Dr. F. B. Lund; umpires, Drs. A. Quackenboss, Paul Thorndike and H. A. Lothrop; scorer, Dr. F. B. Mallory; announcer, Dr. J. C. Munro; starter, John Graham, B. A. A.; timekeeper, Arthur Blake, B. A. A.; clerk of course, Dr. R. M. Pearce; committee of arrangements, Dr. J. B. Blake, Dr. M. J. Cronin, Dr. L. G. Paul, Dr. R. M. Pearce.

Work of the City Hospital Curtailed for Financial Reasons. — The Trustees of the Boston City Hospital have found it necessary to close four wards of that institution on account of lack of funds available for their maintenance. It is expected that they will not be reopened before next December. The Board of Apportionment has cut down by $15,000 an appropriation based upon estimates for very careful management. Several of the services are much smaller than is usual even at this season of the year, and some wards show many empty beds. How far this situation is due to free baths, free music, free lectures, etc., and how far it is due to the tendency, especially marked in the last Legislature, to saddle all sorts of expenses upon the city of Boston, we will not undertake to say. It is, however, evident that a proper care of its streets and a proper care of its poor sick are among the first and most important duties of a great and rich city. These duties the city of Boston seems to be unable to meet, at present, in an adequate manner.

Small-Pox and Vaccination. — Under this heading the State Board of Health of Massachusetts issues a circular, from which the following paragraphs are taken: In view of the unusual prevalence of small-pox in other neighboring States at the present time, the State Board of Health desires to urge upon the local health authorities throughout the State the importance of general vaccination of the inhabitants for the prevention of small-pox. The facilities for intercourse between Massachusetts and other States make the introduction of the disease an easy matter among populations which are partially unprotected by vaccination.

In the State of Ohio there have been 1,757 reported cases since April, 1898, and 328 have been reported within the past seven weeks, mostly in the larger cities of Cincinnati, Cleveland and Columbus. The existence of this unusual number of cases threatens the population of neighboring States to such a degree that special vigilance becomes necessary on the part of all local health authorities to provide the necessary facilities for a general vaccination of the people.

Five limited outbreaks of the disease have occurred in Massachusetts within the past month, and others are liable to occur if special pains are not taken to prevent them. It is quite certain that a considerable portion of the population is still without protection in consequence of neglect to be vaccinated or because vaccination has been improperly performed. Vaccination gives a protection which is more complete than can be obtained by any other means, and even when this protection is not absolute, it has been thoroughly demonstrated that vaccination renders the individual much less liable to an attack of small-pox, and if the attack does occur, the severity of the disease is greatly modified. The objections once urged against the use of humanized lymph are now obviated by the almost universal use of lymph obtained from the calf. The Board recommends the use of glycerinated lymph as likely to produce the most uniformly favorable results. In view, therefore, of the possible appearance of small-pox, it is earnestly recommended that a general vaccination of all unprotected persons be made and that the local authorities of cities and towns be requested to carry out this recommendation.

THE DOCTORS' HANDWRITING AGAIN. — The *Monthly Bulletin* of the Connecticut State Board of Health, under the head of "A Suggestion to Physicians," calls attention to the inaccuracies in the tabulation of death certificates which result from the faulty handwriting of the physicians who fill them out. "The copies present astonishing additions to the nomenclature of diseases, such as are not to be found in any system of nosology now in print. I have only space to mention a few out of the scores that might be quoted. Thus 'Cardius Hypohophy,' meaning probably Cardiac Hypertrophy, 'Corrhasis of Liver,' for Cirrhosis, 'Utrim Fibride' for Uterine Fibroid, 'Lineape' for Syncope, 'Neaesini' for Uremia, 'Gortuitis' for Gastritis. These are obvious efforts on the part of the copyist to imitate the manuscript of the doctor, without exercising the slightest intelligence as to the meaning of the words copied. The doctor should ever bear in mind that the town clerk to whom his certificates go for record is not familiar with the nomenclature of diseases, and that therefore the causes of death should be so clearly inscribed that no mistakes could be made in recording them. The same care should be taken in writing the names of persons in the certificates."

NEW YORK.

DR. M. ALLEN STARR HONORED. — At the recent commencement of Princeton University the degree of LL.D. was conferred on Dr. M. Allen Starr, of New York, a graduate of Princeton in 1876.

BEQUEST TO VASSAR COLLEGE FOR THE INFIRMARY. — At the commencement of Vassar College at Poughkeepsie, on June 14th, President Taylor announced, among the gifts to the college, a sum for the erection of an infirmary from Mrs. Caroline Swift Atwater, in memory of her father, a former trustee of the college, and the offer, from an anonymous donor, of $25,000 for a biological laboratory, on condition that another $25,000 be raised.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK. — At a meeting of the Medical Association of the Greater City of New York, held at the Fifth Avenue Hotel on June 12th, Dr. Austin Flint was elected president. Provision was made for the appointment by the Executive Committee of a historian for the Association. Dr. M. S. Gabriel presented three specimens of large vesical calculi which he had removed some years ago while practising in Silicia, Turkey. The largest one was of somewhat the dimensions of a goose-egg, and weighed considerably over two ounces. Dr. John H. Branth presented two cases of extroversion of the bladder, one a boy nine years of age, and the other in an infant of nine months. In each case the bladder, presenting the appearance of a red, vascular-looking tumor, was seen protruding through the fissure in the lower abdominal walls, the ureters, on either side, discharging the renal secretion over the eroded vesical surface; while underneath was the epispadic penis (above the pubes), this organ being also involved in the malformation. The undescended testes remained in the groin. The older patient had been partially operated on three years ago, but, owing to the tossing of the child caused by an incidental attack of toothache, one of the rubber tubes with which the ureters were catheterized became dislodged, and the operation was not successful. One thing, however, had been gained, and that was the formation of a thick wall of tissue, which had enabled the patient to wear a cup for the reception of urine, and which would be of material service in securing firmer union in a subsequent operation. In the course of his remarks Dr. Branth gave the details of a series of original procedures which he proposed to adopt in correcting the malformation in the two children. A paper on "The Facilities for the Distribution of Disease in the Human Body," by Dr. Frank Ferguson, pathologist to the New York Hospital, was included in the programme of the evening.

AN INVESTIGATION OF THE ABUSE OF MEDICAL CHARITY. — The Controller of the City, Mr. Coler, has undertaken the arduous task of endeavoring to abolish, or at least curtail, the abuse of medical and other charity. His investigations have convinced him that more money is contributed for charity than can be properly expended for charitable purposes, and that the result is the creation of a class of artificial dependents. Thus, he finds that while the pauper population of the city amounts to only one per cent. of the whole, no less than seventy per cent. are receiving medical treatment through charitable institutions. Among the points that his investigation has brought out are the following: That enormous sums intended for the relief of the poor are wasted in costly buildings and large salaries; that private charities, partially supported by the city, draw from the institutions wholly under municipal control to such an extent as to impair the latter's usefulness; that no adequate accounting is made of money received and expended; and that certain charities are conducted for the principal object of drawing money from the city and expending it. Of the $3,251,800 appropriated last year by the city for charitable institutions not under city control, he finds that fully one-fifth has been expended in salaries, and roughly speaking, it costs $25 to distribute $75 under present methods. The city institutions are ably administered, but the competition of private institutions prevents them from being used to their full capacity, and while the private institutions are contending for patients and creating a class of beneficiaries, they strive to foster the idea that it is a disgrace to go to a city institution.

A Tea Saloon. — The experiment has been started by the "Church Army" of the Episcopal Church, in connection with a general movement to lessen the drinking evil, of establishing a tea saloon in one of the busy streets near the Bowery, where hot and iced tea of the best quality is furnished at one and two cents a cup or glass. Excessive tea has its evils as well as excessive alcohol.

The New Quarantine Commissioner. — Governor Roosevelt has appointed Hugh McRoberts, of Tompkinsville, Borough of Richmond, Quarantine Commissioner, to fill the vacancy caused by the death of Judge Paterson. This was in compliance with the request of Health Officer Doty that a commissioner should be selected whose residence was near the Quarantine Station, and in recommending Mr. McRoberts for the position, Dr. Doty dwelt upon the great importance of his having the cordial support and assistance of the Quarantine Commissioners at times like the present, when large numbers of soldiers and other passengers are arriving from the infected port of Havana.

A Bullet in the Brain for Thirty-five Years. — The death of Carlston Vollers, in Jersey City, on June 6th, is attributed to the effects of a bullet which was lodged in his brain thirty-five years ago, when, while residing in New York, he was shot in the head by a burglar. At the time the injury was received it was not thought that he could possibly survive more than a few days at most.

Active at the Age of One Hundred and Seven. — If there is any other city in creation that has as venerable an active employee in its service as it boasts, the Greater City of New York would like to know it. On June 10th Barney Mann celebrated what he claims is his one hundred and seventh birthday by attending to his usual avocations. He is employed as a laborer in Prospect Park, Brooklyn, and every day walks a mile from his home to the Park, where he works upon the lawns. He states that he was born on June 10, 1792, in County Cavan, Ireland. He came to this country when he was thirty-six years old, and used to drive a stage-coach to Jamaica and Hempstead before the days of the Long Island Railroad.

Sterilized Milk for the Poor. — On June 8th the Board of Estimate and Apportionment authorized the Park Department to expend $4,000 for the erection of two permanent booths, one in Central Park, the other in Tompkin's Park, for the distribution of the sterilized milk supplied by Nathan Strauss, and it is announced that as soon as practicable similar arrangements will be made in other of the city parks. Hitherto sterilized milk has been distributed in the summer months from temporary booths erected by Mr. Strauss.

Dr. Paul R. Brown Appointed to Cornell. — At a meeting of the Trustees of Cornell University, held May 31st, Dr. Paul R. Brown, who was formerly a sanitary inspector in the Health Department of New York City, was appointed lecturer on surgery and obstetrics in the Ithaca Branch of the Cornell Medical College.

Dr. Piffard Honored. — At the commencement of the University of the City of New York, held June 8th, the degree of Doctor of Laws was conferred on Dr. Henry G. Piffard, professor of dermatology in the University and Bellevue Hospital Medical College.

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Miscellany.

THE DIFFICULTIES OF MILITARY SURGERY IN MANILA.

Major Henry F. Hoyt, chief surgeon, United States Volunteers, in a report covering the month of April, shows the unfavorable conditions under which our troops at Manila are campaigning and the many difficulties in the handling of the sick and wounded, as follows:

April 1st. Camp at Malolos, P. I., dressing-station and temporary local medical supply depot established in railway station-house. Made inspection of troops, finding them in a fairly good condition, recuperating slowly from the effects of the rapid advance and hot weather during campaign to Malolos.

April 4th. Considerable diarrhea among troops. Inspection revealed impure water supply. Recommended condensed water be supplied per trains from Manila, which was so ordered by division commander.

April 6th. Made medical and sanitary inspection of entire division. Sanitary condition, excepting bathing facilities, good, troops improving physically.

April 9th. After experimenting for some weeks with native plant, known as "Sambong," as a prophylactic against insolation, it was thought best to instruct troops as to its appearance, location and practical use, which was accordingly done by specimens of the plant being distributed, etc., by brigade, regimental and assistant surgeons.

April 23rd. Engagement of 2nd Brigade resulted in 48 wounded and 7 killed, all of which were promptly brought in by ambulance and transferred to hospital, Manila, per train.

April 24th. Engagement on the right resulted in 11 wounded and 6 killed. Some delay in bringing them to dressing-station, as ambulances were unable to find ford across Quingua River.

April 26th. Command advanced to Bag-Bag, where temporary dressing-station was established in church. Station and supply depot was forwarded from Malolos in the afternoon and located in station-house by railroad track, where main dirt road from Malolos to Bag-Bag crosses. After attending to forwarding casualties occurring in 1st Brigade and armored car discovered ambulances of 2nd Brigade with 4 dead and 26 wounded on north side Bag-Bag River and unable to cross. A small canoe was found, the only one for some distance up or down the river, and one by one the wounded were safely crossed, placed in ambulances, carried to the dressing-station, and without delay were *en route* per train to Manila. Considerable credit is due a Kanaka boy, from Honolulu, with the 1st South Dakota Volunteers, and a Filipino prisoner for skillful handling of the canoe, as our men were both inexperienced and exhausted. Major Rafter, regimental surgeon, 20th Kansas Volunteer Infantry, was sent to Malolos to take charge of convalescents left there, some 150 in number.

April 27th. During advance, 20th Kansas and 1st Montana, north of Rio Grande, 1 was killed and 11 wounded, also 9 wounded Filipinos cared for. All were transported to Rio Grande by litter and hand car, thence across the river by canoe. A temporary dressing-station had been placed in warehouse, south side, Rio Grande. Wounded were then placed in ambulances and carried to Bag-Bag River where a damaged approach to bridge necessitated transferring across the bridge on litters. They were again put in ambulances, taken to dressing-station, cared for during the night and forwarded to Manila next morning on train. This entire incident occurred during a very heavy chilling rainstorm. It is with great pleasure that I invite attention to the special bravery of the medical officer of this Division, Captain H. D. Smith, assistant surgeon, 20th Kansas Volunteer Infantry, a man who has often been called and never found wanting, and who accompanied Colonel F. D. Funston as he crossed the Rio Grande on a raft, and was with the fighting line during the battle that followed this memorable event. Doctor J. S. Chaffee, assistant surgeon of the *Monadnock*, United States Navy, has been giving excellent service during the month with the 3rd United States Artillery and a squadron of the 4th United States Cavalry, both attached to this division.

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THE PROGRESS OF WOMEN.

WE quote the following paragraph regarding the higher education of women from the *Philadelphia Medical Journal*, which is one of the stanchest advocates of the justice of women's claims in the field of medicine:

> Recent events indicate that Germany is slowly but surely coming to recognize the place of woman in our latter-day higher education. Her more progressive and liberal republican neighbor, Switzerland, has already shown the way. Even austere and benighted Russia has proved herself more catholic in this connection than cultured Germany. Numerous attempts have been made on the part of women to secure University opportunities and University degrees in Germany, and while they have been thus far only partially successful, they have been none the less surely so. The most recent evidence of this success of the breaking-down of the barriers that have withheld from women equal educational rights and privileges with men, consists in the graduation of, and the conferring of the degree of doctor of philosophy upon, a woman for the first time by the University of Berlin. The German Government has further arranged to admit women to the examinations for medical qualifications, and logically the next step will be to permit them to take the final examinations, to receive the doctorate and to practise their chosen profession despite present opposition. This result may not be brought about this year or next, but come it certainly will, as it is an inevitable phase in sociologic evolution. The medical societies of Berlin still decline to admit medical women to their ranks, but this exclusion also must soon be withdrawn, as it has yielded here and elsewhere. Woman will take her place in the social order in accordance with her energies and her attributes, and no decree of man or State can check the onward force of the movement.

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Correspondence.

PHLEGMASIA DOLENS.

PHILADELPHIA, June 10, 1899.

MR. EDITOR: — In your issue of March 30th there appeared a letter, with the caption of "The Pathology of Phlegmasia Dolens," by Edward T. Williams, M.D., criticising a clinical lecture entitled "Remarks upon Phlegmasia Dolens, Especially as Observed among Soldiers," by Prof. J. M. Da Costa, which was published in the JOURNAL the preceding week. Making every allowance for the haste with which the criticism was written, one may still be permitted to wonder why it was written at all. The original lecture (which was extemporaneously delivered, and which was stenographically reported by myself for the JOURNAL), had been duly revised by the author, who thereby assumed full responsibility for it. With Dr. Da Costa's permission, I beg to submit the following facts for the consideration of your readers. Inasmuch as Dr. Williams has declared that the lecture contains "false teachings, which, weighted with the authority of a great name, are dangerous to the community," it becomes of the highest importance to weigh the criticism, to determine who is at fault. It may possibly be found that, being overcome by his surprise, Dr. Williams hastily wrote his letter without having given the subject the consideration that it deserves and consequently fell into grave error, since his strictures do not apply so much to the lecture *per se* as they do to the teachings of the principal modern clinical authorities upon this subject.

For instance, Dr. Williams expresses astonishment that the crossing of the left common iliac vein by the right iliac artery should cause the flow of blood "to be not so free as in the right" iliac vein. Notwithstanding his objection, this is now a well-established fact. The right common iliac artery traverses the right common iliac vein very obliquely, but crosses the left common iliac vein directly, thus causing greater liability to obstruction in this vessel than in the corresponding vein of the right side. This relation is well shown in the illustration on page 632 of Morris's Anatomy (Second Edition, 1898). As regards the inference that the greater frequency of clogging of the veins of the left lower extremity is due to this anatomical fact, Dr. Da Costa made the statement upon the authority of Liebermeister, as he expressly declared in the lecture. Prof. W. W. Keen, the eminent surgeon and anatomist, also adopts this view in his work on "The Surgical Complications and Sequelæ of Typhoid Fever," as explaining not only the greater frequency of left-sided thrombosis, but also of left-sided gangrene, in typhoid.

Coming now to the objections to the pathology, it is evident that the critic read the lecture carelessly, or he would have seen that phlegmasia dolens was explicity declared to be due primarily to an infective thrombosis, the phlebitis, if present, being only a complication. The statement made was that "The affection comes on from the sluggish circulation of the infected blood." Any remark as to puerperal sepsis is irrelevant, or at best only an argument from analogy, and as much as we all admire the brilliant essay of Dr. Oliver Wendell Holmes to which the critic refers, it does not directly bear on the subject of phlegmasia dolens in typhoid fever.

The fact of the milk leg of typhoid fever not being phlebitis, however, should not be dismissed upon mere assumption, or supposed analogy. Dr. Da Costa stated as a matter of personal opinion that it was not *primarily* a phlebitis. But as distinguished an authority as Brouardel, in his work "La Fièvre Typhoïde" (Paris, 1895), which is one of our most recent monographs upon the subject, gives phlegmasia alba dolens as a synonym for phlebitis of typhoid fever. He specifically states (page 108) "The type of phlebitis of typhoid is the phlebitis of the veins of the lower extremity, or phlegmasia alba dolens." He notes that it is rare that the veins of any other region are affected and also that the frequency of this complication varies in different epidemics. Wood and Fitz in their "Practice" recently published (1897), speaking of the complications of typhoid, state that "The most important are insanity of the confusional type, paralysis, acute phlebitis ordinarily affecting one leg and producing a true phlegmasia alba dolens." Keen in his work already mentioned says, under the heading of Venous Thrombosis, "This is much more frequent than the arterial form, probably from the more sluggish circulation in addition to the infectious processes, which undoubtedly sometimes cause a phlebitis or a peri-phlebitis. The phlebitis very frequently results in phlegmasia alba dolens." Therefore, for those who believe it to be a phlebitis, there is certainly warrant enough and the question is by no means settled.

Although the lecturer favored the view of thrombosis, the phlebitis not being primary, it is really difficult to say which is cause and which effect, as we undoubtedly at times find both. Virchow's doctrines were not especially mentioned or examined into in the lecture. Yet in point of fact, so far from Virchow's doctrines being obsolete, as asserted by the critic, it would be more correct to say that little has been added to the pathology of thrombosis since Virchow's brilliant work in this field, except in the way of elaboration; what has been done has been principally in the way of bacteriological investigation and of explanation.

Since this lecture was published, the sixth volume of Allbutt's "System of Medicine" has appeared from the press. On page 173 occurs the following statement, which bears upon this subject:

"While we are justified in assigning a far more prominent place to the agency of micro-organisms and to primary phlebitis in the etiology of thrombosis than, until recent years, has been customary since Virchow's fundamental investigations, recent attempts to refer all thromboses, formerly called marantic, to the direct invasion of micro-organisms and to phlebitis go beyond demonstrated facts."

Dr. Da Costa teaches that the thrombus disintegrates and may produce pyemia. It obviously does so by purulent foci secondarily forming, the disintegrating masses being arrested in the smaller vessels and leading to abscesses. The main thrombus may also break down into pus and give rise to pyemic symptoms, as in the case reported by Osler in his researches in "Typhoid Fever," published in the Johns Hopkins Hospital Reports. Dr. Da Costa did not state that the thrombus was not from infected blood, but quite the contrary. It may still be an open question whether or not the thrombus itself is not the result of an infective phlebitis.

However, all these are minor matters as compared with the important questions of prognosis and treatment raised by the critic. In this respect the teachings of the lecture have been challenged and stigmatized as dangerous by Dr. Williams. Let us turn to the evidence. Questions of prognosis are questions of fact and not of theory. So also are questions of treatment questions of fact. The lecture contains reference to the results of treatment of thirty cases and among the hospital notes from Dr. Da Costa's wards there are ten more cases, of comparatively recent date, not in soldiers, all of whom also recovered. In one additional case, that of a woman, which was fatal, it was not certain that she had had typhoid fever. Exclusive of this doubtful case, there was not one fatal case out of forty, at the Pennsylvania Hospital, and only one among a number of others seen in consultation in private practice. Such results certainly warranted the statement that it is not a very serious complication and that, as Dr. Da Costa said, "the cases recover in the vast majority of instances." So much for prognosis, now for the treatment. The facts in the case are that under the treatment which the critic condemned, with the exceptions named, all the cases recovered. As regards the alternative treatment proposed by Dr. Williams, we may be excused if we fail to see how the clots can be removed from the veins by purgatives. Furthermore, in the later stage of typhoid fever, or in beginning convalescence, when the complication usually appears, the use of purgatives would not ordinarily be regarded as good treatment. Dr. Williams himself states that his entire experience with this complication was limited to one case. I have the honor to be

Very respectfully yours,
FRANK WOODBURY, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 10, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup	Measles.
New York . .	3,438,899	1462	594	13.30	13.51	4.20	3.08	2.10
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	478	141	12.18	5.04	3.15	2.94	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	208	62	8.16	12.96	.96	1.92	.48
Baltimore . .	506,389	197	57	11.22	5.61	6.12	1.02	—
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	93	54	—	—	—	—	—
Washington .	277,000	147	45	8.16	5.44	2.72	—	2.04
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	50	16	6.00	10.00	2.00	—	—
Nashville . .	87,754	30	15	20.00	6.66	20.00	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	108,240	24	11	4.16	12.48	—	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	25	7	12.00	12.00	—	—	4.00
Lowell . . .	88,641	37	22	24.30	21.60	5.40	—	5.40
Lynn	66,703	18	6	—	—	—	—	—
New Bedford .	66,340	19	8	10.52	5.26	10.52	—	—
Somerville . .	61,101	14	7	21.42	28.56	21.42	—	—
Lawrence . .	57,263	18	7	16.66	11.11	—	—	5.55
Springfield . .	56,501	17	4	11.76	23.52	5.88	5.88	—
Holyoke . . .	43,424	11	5	9.09	18.18	—	—	—
Brockton . .	37,278	5	1	20.00	20.00	—	—	—
Salem. . . .	36,883	13	4	7.69	—	—	—	—
Malden . . .	34,613	8	2	—	12.50	—	—	—
Chelsea . . .	33,468	7	2	—	—	—	—	—
Haverhill . .	32,022	12	2	—	25.00	—	—	—
Gloucester . .	30,589	1	—	—	—	—	—	—
Newton . . .	29,716	3	—	—	33.33	—	—	—
Fitchburg . .	29,438	4	—	—	—	—	—	—
Taunton . . .	28,167	12	4	8.33	16.66	8.33	—	—
Everett . . .	25,338	9	2	—	11.11	—	—	—
Quincy . . .	23,549	9	—	11.11	22.22	—	11.11	—
Pittsfield . .	22,643	6	1	—	16.66	—	—	—
Waltham . .	21,812	5	—	—	20.00	—	—	—
North Adams .	20,971	9	—	22.22	—	—	—	—
Chicopee . .	17,842	7	3	14.28	—	—	14.28	—
Medford . . .	16,511	7	—	14.28	—	—	—	—
Newburyport .	14,915	3	—	—	—	—	—	—
Melrose . . .	14,032	6	1	—	16.66	—	—	—

Deaths reported 2,988; under five years of age 1,088; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 363, acute lung diseases 319, consumption 293, diarrheal diseases 119, diphtheria and croup 69, measles 41, scarlet fever 35, typhoid fever 33, cerebro-spinal meningitis 31, whooping-cough 22, erysipelas 9, small-pox 4.

From scarlet fever New York 19, Boston 4, Philadelphia and Lowell 3 each, Pittsburg 2, Baltimore, Providence, Cambridge and Salem 1 each. From typhoid fever Philadelphia 21, Pittsburg 4, New York 3, Washington 2, Boston, Baltimore and Holyoke 1 each. From cerebro-spinal meningitis New York 12, Baltimore 5, Washington and Somerville 3 each, Boston and North Adams 2 each, Worcester, Cambridge, Brockton and Medford 1 each. From whooping-cough New York 12, Philadelphia 5, Lowell and Lawrence 2 each, Boston 1. From erysipelas New York 7, Boston and Baltimore 1 each. From small-pox New York 3, Boston 1.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending

June 3d, the death-rate was 17.7. Deaths reported 3,872; acute diseases of the respiratory organs (London) 240, measles 142, whooping-cough 80, diphtheria 69, diarrhea 45, scarlet fever 27, fever 23.

The death-rates ranged from 8.5 in Brighton to 26.5 in Manchester; Birmingham 16.7, Bradford 16.6, Cardiff 11.5, Gateshead 17.5, Hull 17.4, Leeds 17.1, Liverpool 24.3, London 17.0, Newcastle-on-Tyne 17.8, Nottingham 15.5, Oldham 22.1, Portsmouth 17.8, Salford 20.5, Sheffield 18.8, Sunderland 17.5, Swansea 18.6, West Ham 10.2.

METEOROLOGICAL RECORD

For the week ending June 10th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....4	30.10	68	75	62	44	45	44	E.	S.	7	13	F.	F.	
M...5	29.92	78	92	63	65	63	64	S.W.	S.W.	15	14	O.	F.	
T....6	29.86	84	93	75	55	51	53	W.	W.	17	12	F.	F.	
W...7	30.03	65	78	52	87	95	91	E.	E.	8	8	O.	R.	.38
T....8	29.80	72	90	54	87	43	65	S.W.	W.	7	11	O.	F.	.24
F....9	29.91	72	79	65	42	58	50	N.W.	W.	12	8	F.	O.	
S...10	30.02	66	72	60	50	63	56	N.	S.	11	11	F.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 17, 1899.

M. S. Guest, passed assistant surgeon, detached from the "Detroit," June 20th, and ordered home to wait orders.

W. C. Braisted, passed assistant surgeon, ordered to the "Detroit," June 20th.

A. F. Magruder, surgeon, granted leave for four months, with permission to leave the United States.

J. D. Gatewood, surgeon, detached from the Bureau of Medicine and Surgery and ordered to the "Lancaster," June 22d.

P. A. Lovering, surgeon, detached from the "Lancaster," June 22d, and ordered home to wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JUNE 15, 1899.

Murray, R. D., surgeon. So much of Bureau letter of May 15, 1899, directing Surgeon Murray to transfer property in his charge to Passed Assistant Surgeon W. J. S. Stewart, revoked and directed to defer departure to Key West, Fla., until the arrival of Surgeon W. P. McIntosh. June 12, 1899.

Carter, H. R., surgeon. To report at Washington, D. C., for special temporary duty. June 13, 1899.

Banks, C. E., surgeon. To proceed to New York, N. Y., for special temporary duty. June 9, 1899.

Peckham, C. T., surgeon. To proceed to Sabine Pass, Tex., for special temporary duty. June 13, 1899.

Brooks, S. D., surgeon. Granted leave of absence for fourteen days. June 12, 1899. Upon expiration of the leave of absence granted by Bureau telegram of June 12, 1899, to proceed to Portland, Me., and assume command of the Service. June 12, 1899.

McIntosh, W. P., surgeon. Upon being relieved from duty at Louisville, Ky., to proceed to Mobile, Ala., and assume command of the Service. June 12, 1899.

Wertenbaker, C. P., passed assistant surgeon. Granted leave of absence for six days. June 9, 1899.

Stewart, W. J. S., passed assistant surgeon. Bureau letter of May 15, 1899, directing Passed Assistant Surgeon Stewart to assume command of the Service at Mobile, Ala., revoked. June 14, 1899.

Greene, J. B., assistant surgeon. Relieved from duty at San Francisco, Cal., and directed to proceed to Boston, Mass., and report to medical officer in command, for duty and assignment to quarters. June 12, 1899.

McMullen, John, assistant surgeon. Upon being relieved of temporary command of the Service at Portland, Me., to proceed to Louisville, Ky., and assume command of the Service. June 12, 1899.

Robinson, D. E., assistant surgeon. Granted leave of absence for three days (paragraph 181, Regulations, M. H. S.). June 9, 1899.

Ulrich, C. E., acting assistant surgeon. Granted leave of absence for twenty-six days from June 5, 1899. June 5, 1899.

Peck, F. H., hospital steward. Bureau letter of March 15, 1899, directing Hospital Steward Peck to proceed to the Tortugas Quarantine Station for duty, revoked. June 12, 1899.

Ryder, L. W., hospital steward. Granted leave of absence for fourteen days from June 16, 1899. June 14, 1899.

Carlton, C. G., hospital steward. Relieved from duty at Egmont Key (Fla.) Detention Camp and directed to proceed to New Orleans, La., and report to the medical officer in command, for duty and assignment to quarters. June 12, 1899.

Beck, J. E., hospital steward. Relieved from duty at New Orleans, La., and directed to proceed to Mobile, Ala., and report to the medical officer in command at that port for duty and assignment to quarters. June 12, 1899.

APPOINTMENTS.

W. J. Linley, of Georgia, appointed acting assistant surgeon, for duty at the Savannah (Ga.) Quarantine Station. June 14, 1899.

W. H. Lippitt, of North Carolina, appointed acting assistant surgeon, for duty at Wilmington, N. C. June 14, 1899.

BOARDS CONVENED.

Board convened to meet at the U. S. Marine Hospital, Stapleton, Staten Island, N. Y., at 10 o'clock A. M., Tuesday, June 13, 1899, for the physical examination of an applicant for appointment as third lieutenant in the Revenue Cutter Service. Detail for the Board: Surgeon G. W. Stoner, Chairman; Assistant Surgeon W. C. Hobdy, Recorder. June 10, 1899.

Board convened to meet at New York, N. Y., at 10 o'clock A. M., on Tuesday, June 27, 1899, for the purpose of examining candidates for appointment as assistant surgeon in the Service. Detail for the Board: Surgeon G. W. Stoner, Chairman; Surgeons C. E. Banks, L. L. Williams, Recorders. June 14, 1899.

THE WILLIAM F. JENKS MEMORIAL PRIZE.

The fifth triennial prize of five hundred dollars, under the deed of trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "The Various Manifestations of Lithemia in Infancy and Childhood, with the Etiology and Treatment."

The essay, which must be written in the English language, or if in a foreign language, accompanied by an English translation, must be sent to the College of Physicians of Philadelphia, Pennsylvania, U. S. A., before January 1, 1901, addressed to Richard C. Norris, M.D., Chairman of the William F. Jenks Prize Committee.

James V. Ingham, M.D., *Secretary of the Trustees*,
College of Physicians of Philadelphia.

RECENT DEATHS.

Robert Lawson Tait, F.R.C.S., whose death on June 13th was noted in last week's Journal, was born in Edinburgh, May 1, 1845, and became a licentiate of the Royal Colleges of Physicians and of Surgeons, Edinburgh, in 1866. In 1870 he was elected a Fellow of the Royal College of Surgeons, Edinburgh, and in 1871 a Fellow of the Royal College of Surgeons, England. In 1871 he was appointed surgeon to the Birmingham Hospital for Women. From 1875 to 1885 he was a member of the Birmingham Town Council and co-operated actively in carrying through the municipal and sanitary improvements inaugurated in that city by Joseph Chamberlain. He was professor of gynecology in the Queen's Faculty of Medicine in Mason College, and at one time President of the College. He was a surgeon of great manual dexterity and an active worker in the field of abdominal surgery and also an ardent controversalist on various subjects in medicine, generally appearing in opposition to the best and most enlightened views of the profession. He was an earnest opponent among other things, of the microbic origin of sepsis, and appeared as the champion of the antivivisectionists in their opposition to scientific research. His employment of statistics in his various controversies has been characterized as more skilful than accurate. His name will be associated with regret that a man of so much genuine force and surgical skill should have throughout his life bent his energies against rather than for the advancement of medical science, that he was so great a power for evil as well for good.

Angelo Knorr, one of the most able and productive investigators in the difficult field of immunity, and the toxins and antitoxins, a worthy pupil of Koch and Behring, whose researches on the toxin and antitoxin of tetanus constituted perhaps the most advanced knowledge we possess on the subject, died recently of glanders, at the early age of thirty-five. The disease was contracted by accidental inoculation during experiments directed toward producing a mallein of great virulence. By his death scientific medicine suffers an irreparable loss.

Address.

THE EXPANSION OF MEDICINE.[1]

BY E. H. BRADFORD, M.D., BOSTON.

When that most intelligent observer of human affairs, Benjamin Disraeli, greeted a deputation of medical men with the clever paraphrase, "Sanitas sanitatum omnia sanitas," he was, perhaps, wiser than he thought.

The growth of the field of medicine has been great and is still increasing. From the fetich man, the priests at the temple, the writers of medical aphorisms and dogma there has developed in the course of the centuries a profession of practitioners of medicine and the beginning of a science. This expansion is certain to continue with the growth of knowledge. Perhaps the court in the next century, whose decree "Thou shalt not" will be obeyed without compulsion, is that which transcribes with accepted authority the immutable laws of disease.

Is the profession prepared for added responsibilities? An examination of the past record is pertinent in attempting an answer to this query.

The practice of medicine even in the early days of the American Colonies seems to have attracted to it men of capability. The settlers brought none of the traditions of feudalism, which made the leech and barber surgeon a servant of the chief. The profession was early regarded as a desirable one. In the Dutch Colony of New Amsterdam the doctor was an official and in New England almost as much respect was paid to the physician as to the clergyman. Distinction was granted to those who were regarded as educated men. The doctor trained his son to follow in his footsteps and educated him for the purpose as thoroughly as was possible. From the year 1631 to 1805 there always was a Dr. John Clark in Boston for the citizens of Boston to consult. The title was almost hereditary, and there are physicians in the city of Boston to-day whose direct ancestors were practising here a hundred years ago (Warren, Hayward, Bigelow, Shattuck, Homans, Townsend, Cheever, Jeffries, Channing, Reynolds).

Dr. Holmes writes ("The Medical Profession in Massachusetts"): "Many names in the catalogue of the early physicians have been associated in the late period with the practice of the profession, among them Boylston, Clark, Danforth, Homans, Jeffries, Kittredge, Oliver, Peaslee, Randall, Shattuck, Thacher, Wellington, Williams, Woodward."

The public accorded prominence to the physician. The Medical-Chirurgical Faculty of Maryland a hundred years ago proudly claimed as its motto the line of Homer:

Ἴητρος γὰρ ἀνηρ
πολλῶν ἀντάξιος ἄλλων.

In turn, character, broad education, force and high purpose was demanded of the leaders of the profession. Nathan Smith, Gerhard, Elisha Bartlett, Warren, Bigelow, Alonzo Clark, Ware, Austin Flint, Bowditch, and their peers maintained the standard and passed their example to posterity. There has been no lack of achievement from a want in the character of the medical profession.

The education of medical men in America was dependent upon the conditions of American life. In the early provincial days and in a large country with a sparse population, with imperfect means of travel, students were, following the English custom, apprenticed to the prominent physician of the neighboring town. They read medicine in the physician's office and performed subordinate work. They lacked schooling, but they had the best of training in graded and increasing experience under the eyes of exacting criticism. As the communities grew the number of these students increased and the physicians could neither find room nor time for their classes. Schools were formed by the association of several physicians and their following. Energetic and ambitious physicians called themselves professors or induced a struggling neighboring college, ambitious to obtain the distinction of a university with many faculties, to appoint them to chairs. The prominent positions were assigned to the most influential physicians; the younger men hoping for preferment trained themselves by lecturing on the less popular subjects. Nathan Smith, who founded three medical colleges, was professor of several faculties in each, not finding sufficiently worthy colleagues.

The public was not aware that there was need of rich endowments of medical schools, as the best of practitioners had been bred without laboratories or perfected schools, and as a result, few of our medical schools have endowments for scientific work; consequently a large number of students were and are in many localities obliged to attend foreign schools, if desirous of learning the medical sciences. "Pertransiunt multi et crescit scientia."

The condition of our leading medical school thirty years ago is well described by a recent writer in a statement which older physicians know is not exaggerated:

"In 1869 President Eliot found the (Harvard) Medical School little more than an irresponsible commercial venture. There were no requirements for admission; attendance was required for two courses of lectures only, brief in themselves, and still further abbreviated by the failure of the great majority of students to attend during the summer term. A student who passed successfully five out of nine oral examinations of five minutes' duration each received a diploma, although he might not know the limit of safety in the administration of morphine, and one had actually killed two early patients in consequence."

As the President said, "Under this system young men might receive the degree of Doctor of Medicine who had had no academic training whatever, and who were ignorant of four out of nine fundamental subjects."[2]

All this has fortunately been changed and our schools now, as a rule, furnish satisfactory preparation for practice and degrees of value. But the system of medical education is still defective and does not tend either to economy of administration or to the production of the best and most scientific work. There are one hundred and thirty medical schools in this country which are recognized as worthy to issue accepted diplomas. There are ten in the city of Philadelphia; there are ten in the city of New York; there are eight in Baltimore, and four in Boston. There are sixteen in Chicago whose diplomas are recognized and seven unrecognized. There are nine in St Louis. In comparison with this it will be found that in the German Empire twenty universities are sufficient; in Austria and Hungary, including Croatia, there are eleven. Manifestly many of the American medical schools could be spared. This is so evident that the medical schools in St. Louis are attempting to combine their energies and to form a consolidated institution. If there is an economy of administration in the union of small railroad corporations, the same principle can be applied to professorships of physiology, anatomy and pathology.

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[1] The Annual Discourse before the Massachusetts Medical Society, June 14, 1899.

[2] President Eliot as an Educational Reformer: President W. D. Hyde, Atlantic, March 1899, p. 531.

As there is practically no check on the number of medical schools, beyond the good nature of the community, the title of professor is not uncommon and its prevalence weakens its authority. The decision of a judge has weight, but the opinion of a professor may not excite even curiosity. Nor can it be said that the country lacks doctors. There are in England 28,000 medical men, in France 17,738 practising medicine. In the United States there are said to be 116,000, or about one to every 600 inhabitants.

This congestion naturally develops competition, which in an intelligent community trains excellent practitioners. England develops great lawyers in spite of a system of education in law so defective as to admit of no defence. It can certainly be said with truth that the medical practitioners in this country will stand comparison with those of any nation. The profession in America is a highly developed one in all that relates to the practical application of medical science. Our hospitals are, perhaps, the best appointed and administered in the world. And it is not only in the larger centres that well-equipped hospitals are to be found. In Massachusetts almost every city or town of enterprise has a hospital furnished and supported in a way to meet all requirements. It is doubtful if the medical needs of a population in so large an area of the world's surface are anywhere so carefully attended to as within the confines of our Republic.[3]

American contributions to practical medicine are well known. Anesthesia, the introduction of abdominal surgery, the surgery of the appendix, reduction of dislocation of the hip, litholapaxy paracentesis, the development of gynecology, orthopedic surgery, dentistry, the study of fevers and enteric disorders, and the classified studies of functional and nervous diseases hardly need comment.

The American medical profession is certainly characterized by a great readiness to learn and an eagerness for practical knowledge. If the French poet is correct in claiming that the great evil of our time is due to inertia and the great virtue is enthusiasm,[4] certainly much is to be expected of the American profession, for its enthusiasm is without limit.

The Autocrat has said: "Nothing sheds such light on the superstitions of an age as the prevailing interpretation and treatment of disease," and it may be added that nothing is a better measure of the worth of a profession than its literature. American medical literature was thoroughly provincial for a long period; eagerness for the teaching of others, however, and a knowledge of personal defects are commendable traits and furnish a good foundation for wisdom. American medical text-books, until recently, were chiefly translations or American issues of foreign books, sometimes with commentaries by the American editor.

An examination of the catalogue of the Harvard Medical School for the year 1875–1876 shows in a list of books recommended to students for text-books and for collateral reading:

	Foreign.	American.
Anatomy and histology	9	1[5]
Physiology	8	2
Medical chemistry	7	0
Materia medica	0	3[6]
Pathological anatomy	4	1[7]
Therapeutics	2	2
Obstetrics	2	2
Obstetrics	3	0
Theory and practice of medicine	2	2
Surgery	7	0
Total	44	13

In the year 1898–1899 it will be found that there are eighty-five American text-books and seventy-one foreign.

	Foreign.	American.
Anatomy	9	8
Histology	4	3
Physiology	9	2
Chemistry	6	5
Hygiene	1	2
Bacteriology	3	3
Therapeutics	1	1
Pathology	4	2
Obstetrics	4	2
Theory, and practice	3	6
Clinical medicines	5	8
Surgery	2	9
Gynecology	3	5
Pediatrics	0	5
Ophthalmology	4	4
Otology	2	2
Neurology	1	5
Psychiatry	4	6
Legal medicine	1	1
Clinical microscopy	0	1
Dermatology	5	5
Total	71	85

The growth has been greater than would appear from these lists.

At the beginning of the Revolutionary War there were only one book, three reprints and twenty pamphlets by American authors. To-day there are 7,000 books and reprints and a large number of pamphlets. There are 300 books and pamphlets written by American authors annually, and 5,000 journal articles. In 1879–1880, 10,334 books and journal articles were written in the United States in comparison with 7,476 written in England at the same time.[8] The Americans are probably the greatest consumers of medical literature, and in medical libraries are foremost. The development of medical journals has been remarkable.

Since the latter part of the last century the medical profession has organized medical associations, and there is no healthier sign of the times in American medicine than the growth and excellence of our medical societies. They have raised the standard of education, promoted legislation against quackery; but as the training of the doctor is largely that of a particularist, he is frequently a defective organizer, and our societies often lack in influence which other interests possess. It would be difficult for a State medical society to obtain from a legislature a grant for the investigation of malaria, but the agriculturists have secured considerable grants for the extermination of the gypsy moth. It is not difficult to raise a large sum for experiments in a new process in the manufacture of steel, or a new application of force, but a doctor would be long a beggar before he could collect funds for a research for the antitoxin of influenza. Our medical societies are too apt to organize more for the relation of personal experience or achievement than for the advancement of an idea. As Dr. Senn has suggested, our societies should become great graduate universities, stimulating and rewarding the highest professional work and influencing the whole body politic.

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[3] Hospitals are to be found in thirty-four cities and towns of this Commonwealth, besides the abundant hospital accommodations in Boston.

[4] La Princesse Lointaine: Rostand. "La grande vice, c' est l' inertie, et la vertue, c' est l' enthusiasme.

[5] A guide for dissection.

[6] One United States Dispensary.

[7] A guide for autopsies.

[8] Journal American Medical Association, June 6, 1899, p. 1,214.

At the beginning of the century our medical societies were few and small. To-day, besides the active special societies and their triennial congress, each State and territory, with but one exception, has its organized society. The national society has probably greater opportunities for influence than any medical association in the world, and with its membership of ten thousand is perhaps the largest of existing medical associations, and the Massachusetts Medical Society, with its large and increasing membership, has always been a power in the State.

The most distinguished accomplishment of the medical profession in America is the development of the army medical department, which may be regarded not only as a product of our national existence but of the profession from whose ranks the army medical department is recruited.

When the embattled farmers were gathered at Cambridge in an army which ushered in the Revolution, the Second Provincial Congress of Massachusetts Bay, in preparation for the better care of the sick and wounded, in an enactment provided for the thorough examination of all persons asking appointments as surgeons. Thacher, in his military journal during the Revolutionary War from 1775 to 1783, states that the examination which he himself passed occupied about four hours. The subjects were anatomy, physiology, surgery and medicine. A number of the applicants were rejected, and the examination, he says, "was in a considerable degree close and severe, which occasioned not a little agitation in our ranks." The standard which was established was, however, much weakened by the vicious privilege which persists to the present day in our militia, allowing soldiers to choose their own officers and giving the officers in turn the nomination of the surgeon. In the stress of the times the evils of this could not be obviated by any attempts at thorough examinations. The Continental Congress at this time was a body without experience in general legislation, with a fear of centralized authority, and the result was that the Continental Army was absolutely without organization, and suffered from a lack of proper support from the commissary and quartermaster's departments. This chaos was worse confounded by a contest between the regimental and general hospitals, which became so bitter as to prevent any proper administration.

The difficulties were well described in a letter of General Washington to John Hancock, speaking of the improvement required for the hospital department: "No less attention should be paid to the choice of surgeons than of other officers of the army. They should undergo a regular examination, and if not appointed by the director-general they should be subordinate to, and governed by, his directions. The regimental surgeons I am speaking of, many of whom are very great rascals, countenance the men in sham complaints to exempt them from duty, and even receiving bribes to certify indispositions, with a view to secure discharges or furloughs." "We had better trust to the forces of nature and our constitutions than to suffer persons entirely ignorant of medicine to destroy us by ill-directed applications."

The infant nation was, as has been said, "nursed by great men with empires in their brains," and soon the medical department received the careful attention of Washington and eventually seems to have been brought into as an efficient condition as was possible. The exigencies of the service bred a group of unusual medical men whose histories we should be more familiar with. The first in prominence is John Morgan, the first director-general; of him Benj. Rush writes, "As a student he was laborious and painstaking; as a physician learned far beyond most of his contemporaries. As a young surgeon in the British Army he acquired both knowledge and reputation. He may be said to have been the father of medical education in America, for while abroad he elaborated a plan for the institution of medical colleges in the Colonies, and he sustained his views in an elegant and scholarly discourse on the subject at the Commencement of the College of Philadelphia on the 31st of May, 1765, and it was by his efforts, aided by Shippen and others, that the college was induced to establish a medical department. The historian who shall hereafter relate the progress of medical science in America will be deficient in candor and justice if he does not connect the name of Dr. Morgan with that auspicious era in which medicine got studied as a science in this country."

Succeeding Morgan as director-general was Dr. William Shippen, Jr., a graduate of Princeton, a pupil of John and William Hunter; he was said by a contemporary to have been "a graceful person of polished manners, and with the tones of his voice singularly sweet and conciliatory. In his intercourse with society he was gay without levity and dignified without harshness and austerity." Under the direction of these men was developed an organization which is noteworthy. The first attempt to check disease in military service by proper attention and ventilation appears to have been devised by Dr. James Tilton, of Delaware, who was in charge of the General Hospital at Trenton, N. J., and who succeeded by a new system of hospital construction in diminishing the sickness resulting from the poisoning of the patients by the crowding of hospitals. He did away with the hospital tents and private houses then in use, and caused the construction of a large number of log huts, built roughly, so that the air could freely penetrate the crevices. There were no floors, the ground was hardened or baked by heat, and each hut accommodated from five to six men. The fireplace was in the centre and a hole was left at the ridge, permitting the exit of the smoke. The mortality of typhus diminished decidedly in cases treated in this manner. It is also interesting to note that Shippen and Cochran, endorsed by Washington, recommended to Congress a plan of hospital organization, among the provisions of which was the establishment of female nurses in the military hospitals.

Trained in the arduous service of these memorable years were a number of men whose names should not be forgotten: Cochran, Philip Turner, said by Shippen to have been the equal of any operating surgeon in Europe and America; John Jones, afterwards professor of surgery of King's College, N. Y.; James Craik, surgeon in the campaign under Braddock and afterwards the physician to Washington in his last illness; Eustis, later Governor of his State, Secretary of

War and Minister to Holland; Brooks, Warren — afterwards professor of anatomy and surgery; Townsend, Hayward, Adams, Homans and many others who left to their descendants a title to hereditary distinction in a plain, printed commission as surgeon in the army, countersigned in the clear, strong signature of George Washington.

The twilight of these surgical demi-gods was devoted after their broadened experience to practice and to the establishment, through teaching, of an American medical profession on the ruins of the destroyed provincial one. They helped to found medical schools and left a tradition of devoted service which has not been lost.

After the establishment of peace, the army medical service was disbanded and as a result of the lack of preparation in military medicine there was great suffering in the War of 1812, that after-clap of the storm of the Revolutionary War. From the confusion which followed there was developed for the first time an organized medical department under the direction of one who should not remain without honor in his own country. Dr. Joseph Lovell, a native of Charlestown, Mass., a graduate of Harvard, entered the army as an assistant surgeon in 1812. Through his abilities he arose to the direction of the army medical department, being the first surgeon-general, as the office was created with his appointment. He served as surgeon-general for thirty years and died in the service, with the respect and love of the whole command. He impressed upon the army medical department scholarship, thoroughness and efficiency. His report on the diseases incident to camp and campaigning bears the hand-mark of a great medical writer, and was the forerunner of the classical reports issued later from the Surgeon-General's Office.

General Lawson, the successor of General Lovell, was trained in the Mexican War, and a man of different mould. He added to the organization great energy and a sense of official dignity which brought the army medical service into the prominence it deserved. It may be remembered that even in the early days, scientific work was carried on by the surgeons of the army. Beaumont's contribution to the study of digestion is too familiar to need quotation. The meteorological reports conducted under General Lawson are perhaps to be regarded as the foundation of the modern science of meteorology. The first observations on the employment of quinine in large doses in malaria also came from the army medical department. The Seminole War, the Black Hawk War, with its cholera campaign, the Mexican War, with its confusion, and the trying frontier experiences, all furnished an excellent school for military surgery. But the whole record of the army medical department from its beginning may be regarded as a preparation for the enormous achievement in the Civil War, that political Krakatoa which shook the continent and sent confusion around the world.

The expansion in two years of a service from the work for a little body of 15,000 men to the greatest medical organization in history for an army of 2,000,000 in a campaign embracing a continent needed the efforts of so many that it is difficult to select the names of the most important. One of the most forceful influences in the perfection of the service was, in all probability, that greatest of organizers, Stanton. It is difficult to realize the enormous extent of the medical work of that time. But the medical historian will be attracted by two features: (1) The utilization of the enormous experience for the benefit of scientific knowledge; (2) the establishment of trained services and organizations of relief for wounded and sick.

Woodward's investigations upon the intestinal disorders of the war is one of the great contributions in clinical medicine. The tabulation of the examination of a million recruits is one of the most important contributions in anthropology ever made, and the "Medical and Surgical History of the War," with its records of cases by the thousands, may be regarded with the army museum and the medical library as national monuments testifying for all time to the devotion and thoroughness and high quality of the army medical service in those terrible years.

The medical department was called upon to expend in the four years of war over $45,000,000, exclusive of salaries, for the benefit of the sick and wounded soldiers. Two hundred and one general hospitals were in operation, and a hospital transport service of four sea-going steamers and supplies for 5,000 beds, besides a large number of hospital river boats, hospital railway trains, etc., over 2,000 regimental surgeons, and 85 contract surgeons and 5,500 assistant surgeons. Of these, 32 were killed in battle, 83 died of wounds, four died in prison, seven of yellow fever, three of cholera, and 271 of other diseases, making a death-roll of 400 names as the profession's life offering in the Civil War.

The enormous number of wounded following the most determined battle of history paralyzed all service, and indescribable suffering followed, but from the chaos, as in the Indian myth of the water-lily rising in the circles of troubled waters from above the pool of decay, there was perfected the greatest organization for the relief of human suffering the world has seen. The establishment of a trained ambulance corps under a system which has served as a model copied by other nations is an achievement sufficient to place Major Letterman on the list of the great benefactors to the race. The Sanitary Commission was the great forerunner of the Red Cross Association, now recognized universally as one of the beneficent associations which relieves war from barbarism.

When the war against Spain came upon the country suddenly it was generally believed by a community ignorant of war that the great efficiency of the medical department in the Civil War could be immediately continued after a lapse of thirty years. It was after the list of sick in the summer camps, and the terrible condition of the Fifth Army Corps at Santiago, and the confusion of the first week at Montauk, that an excited people, inexperienced in the actualities of campaigning, hastily condemned the medical department. Not till the campaigns of this much-photographed and much-written war have been placed fully in the possession of the community, and the mistakes fully shown, can a critical analysis be made. This will be found to show that the work of the army medical department was not only not culpable, but, considering the difficulties under which it labored, of almost incomparable excellence. It will be found that previous experiences in war were lost upon legislators, and that the army medical department was cut down to the smallest possible point for our small army. It is beyond the possibility of any system to suddenly develop trained and experienced medical officers, and the proper selection of surgeons for an army of two hundred thousand men was impossible. It may be remembered that Surgeon-General Lovell, in 1817, wrote as follows: "An officer of the line may soon learn the duties of the field, and a surgeon be amply qualified for his profession, and both of them be worse than useless in the army. It is from a knowledge of minutiæ, which depend neither upon general regulations nor specific orders, that the experienced officer and surgeon becomes so much superior to the undisciplined recruit. It is almost entirely in order to acquire this kind of knowledge that a military establishment is kept up in time of peace, and it is an undoubted fact that in no department of the army is it so slowly acquired and, therefore, so deficient as in the medical. How severely this was felt during the greater part of the last war (1812) is too well and too publicly known to need comment."

It is in all probability largely due to the neglect of this common-sense principle that the deaths and the sickness in the summer camps were so great. For the evidence is clear that the sanitation and policing were neglected in the volunteer camp, both by the officers in charge and by the regimental surgeons, those regiments with efficient officers and discipline necessarily suffering from contiguity with ill-disciplined troops. When it is remembered that the marines at Guantanamo suffered no sickness, and that ten thousand troops were encamped at South Framingham without sickness at a time when typhoid and camp disorders were prevalent at Camp Alger, Camp Mead and Camp Thomas, it is clear that an unnecessary amount of sickness and death is to be laid to the score of some one. It would appear to be clear that it is not the army medical department which is to blame.

The campaign at Santiago will probably be recorded by the historian as a modern counterpart of the capture of Louisburg. There was the same gallantry on the part of the men; there was the same successful achievement of the impossible; there was comparatively, judging from the difference in the advance of the science of war, the same confusion. As we now read Parkman's pages, we condemn the mistakes and are proud of the gallantry of the troops, and it is probable that in a century from now, when war has become an exact science, and the art of keeping men efficient, the chief factor in war, has been perfected, the historian will be surprised at the blunders and incompetency shown by a War Department inexperienced in the perfected science of war.

"Inter arma silent leges," and this is certainly true of the sanitary laws in the hurriedly-prepared campaign of Santiago. We should be led to believe then the American Republic of to-day was incompetent to wage efficient war; but an assertion like this is met by a record strange even in this land of contrasts, namely, the remarkable efficiency of the Philippine expedition, conducted under the same War Department and with volunteer troops. It may be said that after the second week in September order was brought about, well-organized hospitals were established, and medical service brought to a high stage of efficiency, which the profession can well be proud of. It is to be remembered, to the credit of the medical department, that if the army was supplied with out-of-date weapons, first-aid packages were furnished to the troops; they were drilled in their application and their beneficent efficiency thoroughly demonstrated.

The country will pardon the sufferings at Santiago as, perhaps, a military necessity, and even condone the bad equipment of the transports and the week of confusion at Montauk. The confusion may be regarded as the result of haste and changed plans, difficult to avoid in war. The mortality statistics show, however, an undue mortality in the training camps. The chief mortality was in August and September, after practical cessation of campaigning, and occurred chiefly in the camps of troops never sent to the front.

Comparison of Monthly Death-rates (per 1,000) from Disease.

	1861 1862.			1898-1899.		
Months.	Mean strength.	Number of deaths.	Ratio per 1,000 of M. S.	Ratio per 1,000 of M. S.	Number of deaths.	Mean strength.
May	16,161	18	1.11	.26	42	163,726
June	66,950	55	.82	.44	90	202,526
July	71,125	106	1.49	1.72	451	362,613
August	112,359	242	2.15	5.21	1,400	268,507
September	165,126	365	2.21	5.89	1,511	261,824
October	256,881	725	2.82	3.17	809	255,000
November	301,818	1,145	3.79	1.51	365	242,000
December	343,181	1,471	4.29	.84	201	240,000
January	352,760	1,593	4.52	.85	180	211,000
February	327,731	1,346	4.11	.87	156	180,000
March	328,878	1,575	4.79	.90	123	136,000
April	410,416	1,881	4.58	.71	80	113,000
Annual	229,452	10,522	45.86	25.73	5,438	211,350

But the two thousand deaths in the summer camps will remain as a blot in American history. In explanation many excuses are offered. Training camps badly placed; general officers ignorant or negligent of sanitary laws; appointment of medical officers not sufficiently experienced for their undertaking to important positions; incompetent regimental officers and surgeons appointed by State governors, regiments sent to the camp equipped for war only in their brass bands, ill-disciplined soldiers unacquainted with the elements of sanitary decency, are all mentioned and perhaps all are true. The American people have learned another lesson of the need of thorough preparation, which it is to be hoped will not be forgotten. The experience of the war has shown the great general ignorance of the elements of sanitation. The medical profession has certainly a large field of endeavor in preaching what has been called the "Evangile of hygienic righteousness."

It is somewhat singular that a nation whose energies have been enlisted chiefly in the pursuits of peace should have contributed so much to the science of war. The rifle was first used in battle by American soldiers at the battle of New Orleans. The open order of attack, hasty intrenchment by the advancing attacking column were productions of American frontier life and are developments of American arms, making war less destructive to human life. If war is, as Shakespeare says, "God's besom" to sweep away the refuse of the world, it will always be needed, and it will be the part of civilization to develop and humanize it. War was originally brute force. Napoleon made it the science of positions, and it should be the duty of our nation, which has done so much to humanize war, to make of it a perfected science of sanitation — the art of keeping men efficient — and the preparation for it a long study of the laws of health.

If the work in the army medical department is more than commendable, that of the navy is superlatively good. In the navy in the last war perfection seems to have been reached; the men not only were as healthy in war as in peace, but in all probability healthier than in the general run of city life. The marines at Guantanamo were kept in perfect discipline, the springs were guarded and no water was drunk except when sterilized, and although they were exposed to the same influences which overcame the soldiers, there was no sickness. The report of the Surgeon-General of the Navy for the year of the Spanish War shows even better health than in time of peace.

To show what an advance this means, it is only necessary to compare the account of the sickness of the British fleet in the West Indies in 1726: out of a force which never exceeded 4,750 persons, two flag officers, seven captains, 50 lieutenants, 4,000 men died in one year of various forms of sickness.

A statistical comparison of the Spanish War with other wars would be of interest.

The accompanying table prepared by Dr. Mosher, of Boston, of the principal wars of the century shows the relative position of the war in the mortality from disease in the list of other wars. The table shows the percentage of mortality in campaigns by the French and English and Americans in tropical countries.

DEATHS FROM DISEASE.

Walcherian (E.), 1809	23.33
West Coast Africa (E.), 1824,	69.00
Mexican (U. S.), 1846	10.00
Mexican (U. S.), 1848	10.00
Crimea (E.), 1854	23.00
China (F.), 1862	11.80
Civil War (U. S.), 1862	4.00
Civil War (U. S.), 1863	6.00
Franco-Prussian (G.), 1870–71	1.43
Cape Coast (E.), 1873	17.30
Afghanistan (E.), 1878–80	9.37
Egypt (E), 1882	7.21
Soudan (F.), 1883-86	28.00
Madagascar (F.), 1895	30.00
Chino-Japanese (J), 1895	1.48
Spanish-American (U. S.), 1898-99	2.50
Manila Expedition (U. S.), 1899	.80

TABLE OF MORTALITY FROM DISEASE IN CAMPAIGNS IN TROPICAL COUNTRIES.

British army. Name and date of campaign.	Died of disease. Percentage of strength.	French army. Name and date of campaign.	Died of disease. Percentage of strength.
Soudan, 1889	0 06	Tonkin, 1884	6.0
Mashonaland, 1876-97	0.20	Tunis, 1881	6.1
Suakin, 1885	0.22	Mexico, 1862-63	7 1
Soudan, 1885-86	0.41	Tonkin, 1885	7.5
China (Talienwan), 1860	0.54	Dahomey, 1893	8.7
Ashanti, 1895-96	0.56	Tonkin, 1886	9.9
Egypt, 1882	0.57	Tonkin, 1887	10.6
* Manila Expedition, 1899, U. S. A.	0.80	Cochin China, 1863	10.7
		Soudan, 1887-88	11.6
Abyssinia, 1867-68	1.21	Cochin China, 1862	11.7
Galcika Gaika, 1877-78	1.40	China, 1862	11.8
China Field Force, 1860	1.49	Tonkin, 1888	13.3
Matabeleland, 1896	1.65	Cochin China	14.0
Ashanti, 1874	1.74	Soudan, 1885-86	20.0
Zululand, 1879	2.48	" 1886-87	22.0
Spanish-American, 1898-99,	2.50	" 1884-85	22.5
Chitral, 1895	2.51	" 1883-84	28.0
Nile, 1884-85	3.64	Madagascar, 1895	30.2
Dongola, 1896	4.66		
Afghanistan, 1878-80	9.37		

The English campaigns show figures (Table II) that are better and figures that are worse than those of the Manila campaign. Their mortality in one tropical campaign was down to 0.06 per cent. In contrast to this the English mortality in the Afghanistan War ran up to 9.37 per cent. and to-day averages in India 4 to 6 per cent. at a time of peace. Kitchener's Soudan campaign would seem to offer the most recent chance for comparison. When, however, the conditions of the two, the Soudan campaign of Kitchener and our Santiago campaign, are examined, they are found not to be comparable. For instance, the English troops were mostly seasoned natives, plus a small acclimated European contingent. Our men were green troops, not veterans, and anything but acclimated. The English had the same heat to contend with that our troops had, but they did not have the tropical rains — nor did they fight in a yellow-fever country. Notwithstanding all the advantages on the side of the English, typhoid broke out among them and followed them, and "the mortality during the campaign from enteric fever . . . will probably be found, when full reports are in, to be excessive."[9] One battalion lost 16 per cent., "a formidable percentage, fully equalling that of some of our green volunteer regiments on their return from Cuba, where they had the special disorders of malaria and yellow fever also to combat."

So far in the Manila expedition the losses from disease are 0.8 per cent. In 1824 the English lost from disease on the West Coast of Africa 69 per cent. of their men, "so that it became necessary to enumerate the strength each quarter, as the troops were cut off with such rapidity that few lived to complete one year in the command." At most one per cent. of our men died of disease in 1898, while during the years 1862–1865 4 to 6 per cent. died. In other words, to quote from Department Surgeon-General Smart: "Thirty-seven years ago the flower of the manhood of this country, after months of deadly losses, suffered in April, 1862, more than twice the loss incurred in August last (our worst month), and, instead of going home on sick furlough, girded up their loins for the attack on Richmond by way of the Peninsula."

The other noteworthy figures of the tables are the figures of the American wars by themselves. There is a steady decline in the loss of death by disease. Ten per cent. died of disease in the Mexican War; 5 and 6 per cent. in the Civil War, and 2.5 per cent. in the Spanish-American War, and 0.8 per cent. in the Manila expedition. The mortality and sickness in the Austro-Prussian War was high, but the small loss in the Franco-Prussian War, 1.42 per cent., is noteworthy, though it should be remembered that the campaign was not one of great hardship; but especially striking are the tremendous losses of the French in the Soudan campaign, 28 per cent., and in the Madagascar campaign, 30 per cent. These figures of the French losses were taken from a table comparing the losses of the French and English troops in recent campaigns in tropical countries. The table showed that with the exception of the Afghanistan campaign of the English, which had a mortality of 9 per cent., due to an outbreak of cholera, the most unhealthy of eighteen English campaigns was healthier than the healthiest of eighteen French campaigns.

The most unhealthy English was Dongola, 4.66 per cent., and the healthiest French campaign was the Tonkin campaign, with a mortality from disease of 6 per cent. This fact and the tremendous mortality of the Madagascar campaign, 30 per cent., led to an investigation.

This table shows, then, that the losses from disease in the Santiago campaign were relatively small, and that the losses of the Manila expedition will compare with the best. Our losses from disease in the field are open to but little criticism. Men, however, died from disease not only in the field but in the camps. Is our mortality open to criticism? The commission appointed by Surgeon-General Sternberg to examine this point reports that it is. The words of Dr. Vaughan are, "a mortality of 7 per cent. in camps which should be hygienic is rather high." "This could have been prevented had the Government been more careful in the selection of volunteer surgeons."

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[9] Journal of American Medical Association, December 10, 1898, p. 1,426.

Further on in his paper on typhoid in our army camps he says: "I meant that the average volunteer surgeon was better than the average doctor in civil life. The point of the whole matter is that the medical officer is powerless unless the line officer will uphold him and follow his directions. . . . I think it is a shame and a crime that the line officers of our regular army have no education as to sanitary knowledge.

"How did the disease (typhoid) spread? There is no evidence that the water supply in the larger camps was infected. . . . It may be said truthfully that the spread of this disease was caused by the improper disposal of excreta. The epidemic was not due to sending northern men to a southern climate; it was not due to the locality or to the massing of men in one place, but it was brought about by camp pollution. The men's feet carried the excreta, flies carried it to food, and thus it was spread."[10]

The high mortality of our summer camps was due to poor policing and poor hygiene; one the fault of the army, the other the fault of defective sanitary education. The mortality of war does not depend upon missiles so much as upon neglect in sanitary care. The rifle of the enemy is not as deadly as neglected sinks and foul hospital bed-pans.

In comparison with this the mortality of the Spanish Army in Cuba, 1897, is important.[11] The following figures are approximately correct for this year, 1897.

Deaths from yellow fever	6,034
Deaths from enteric fever	2,500
Enteritis and dysentery	12,000
Malarial fevers	7,000
All other diseases	5,000
	32,534

"I can safely say that 10 per cent. of the 30,000 invalided home were destined to certain and early death. These enormous death-rates, it must be remembered, occurred in an army which at no time was properly cared for, and was always badly clothed and badly fed; exposed to all the dangers of a tropical climate, they succumbed easily."

Sick percentages of the United States Army from 1840 to 1899 show marked improvement in the development of sanitary science:[12]

1840–1854	8.9 per cent.
1862–1866	20.0 "
1887–1897	4.5 "
1898 (entire army),	3.5 "
1899 (Manila),	8.9 "

In regard to the health of the troops in Manila, General Otis writes in April:[13]

"I think that the health of the command will compare favorably with the British troops in India, there being only about 8 or 9 per cent. on *sick report* from all causes. The *mortality* of the British Army in India averages from 4 to 6 per cent., so that the percentage of sickness must equal, if not exceed, the percentage of sickness in our troops in Manila."

The philosopher of Chicago, viewing this country from behind his bar, shows contentment when he pronounces that "This is a great country, and the best of it is that we know it," but that the medical profession may not fall into that condition of self-congratulatory complacency which is often the initial stage of degeneration, our sanitary statistics may serve as a corrective.

In 1896 75,000 deaths occurred in this country from typhoid. In 1898 1,713 deaths from typhoid occurred in three months in Philadelphia.

Typhoid fever is, as is well known, not only a preventable disease, but it is prevented, as is shown by the statistics of Munich and Hamburg; and Berlin, formerly the abode of filth, now the cleanest city in the world, is now almost free from typhoid. A few statistics will make the facts of our sanitary deficiencies more clear.

DEATH-RATE FROM TYPHOID FEVER PER 100,000 POPULATION PER ANNUM, 1890-1895.[14]

	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Albany	60	108	50	59	52	165		
Amsterdam	19	11	15	16	8			
Atlanta	149	119	87	66	43			
Baltimore	57	34	42	47	49	28		
Berlin	9	10	8	9	4			
Boston	32	33	25	26	23	32	33	32
Brooklyn	21	21	18	18	16	16		
Brussels	26	41	23	27	14			
Buffalo	44	56	38	37	62	28		
Cambridge	16	21	20	21	30	15	36	15
Chicago	83	160	103	42	31	32		
Cincinnati	67	62	40	43	50	36		
Cleveland	66	52	54	47	27	36		
Copenhagen	9	8	7	9	7			
Detroit	18	13	51	61	26	24		
Edinburgh	19	18	13	14	15			
Fall River	53	66	38	20	33	33	30	45
Glasgow	26	31	18	20	24			
Hamburg	28	23	34	18	6			
Hartford	60	73	82	50	51	58		
Lawrence	134	119	105	80	47	31	19	16
Liverpool	24	25	25	53	58			
London	16	15	11	16	15			
Lowell	160	96	90	62	60	39	40	19
Montreal				20	20	23		
Munich	8	7	3	15	2			
New Haven	28	20	29	31	26	34		
New Orleans	20	23	21	15	28	41		
New York	21	22	14	20	17	17		
Paris	30	20	28	25	29			
Philadelphia	64	64	34	41	32			
Pittsburg	131	100	100	111	56	77		
Richmond	88	60	68	53	31	27		
Rome	35	36	26	34	30			
San Francisco	45	34	32	34	37	32		
St. Louis	34	30	37	103	31	19		
Toronto	80	90	40	40	20			
Vienna	9	6	8	7	5			
Venice	44	33	30	26	18			
Washington	89	86	72	72	72	69		
Worcester	17	21	18	33	32	25	16	15

The accompanying diagram showing the death-rate from typhoid fever in Massachusetts indicates how impure water supply is related to the disease:

SUMMARY BY DECADES, 1856–95.

Period.	Death-rate from typhoid fever per 100,000.	Percentage of population not supplied with public water.	Period.	Death-rate from typhoid fever per 100,000.	Percentage of population not supplied with public water.
1856–65	92.9	75.44	1876–85	47.4	31.75
1866–75	80.8	58.94	1886–95	36.4	13.93

It will be seen that Boston is higher in typhoid death-rate than Amsterdam, Berlin, Brussels, Edinburgh, Glasgow, Hamburg, Liverpool, London, Munich, Paris, Vienna, and if this is true of Boston, what is to be said of Philadelphia?

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[10] Medical Record, New York, May 13, p. 683.

[11] Medical News, New York, lxxii, 592; W. F. Brunner, M.D. Sanitary Inspector, report to Surgeon-General.

[12] Journal American Medical Association, April 22, 1899, p. 873.

[13] Loc. cit.; Forum, May, 1899, p. 345.

[14] Prepared by the kindness of the Massachusetts State Board of Health.

Another means of indicating the medical intelligence of the community is found in the figures of infant mortality.[15]

INFANT MORTALITY IN DIFFERENT COUNTRIES.

DEATHS UNDER ONE PER ONE THOUSAND BIRTHS.

Countries.	Years.	Infant mortality per 1,000 births.	Countries.	Years.	Infant mortality per 1,000 births.
Ireland . .	1884-88	94	Italy . . .	1884-91	192
Sweden . .	1881-90	97	Prussia . .	1886-92	207
Scotland . .	1885-90	120	Hungary . .	1884-97	212
England . .	1885-91	144	Austria . .	1886-87	246
Belgium . .	1881-91	159	Saxony . .	1886-92	281
France . .	1885-90	165	Bavaria . .	1879-88	287
Holland . .	1885-90	179	Massachusetts,	1876-95	161

As Dr. Abbott says, "From this table it appears that the infant mortality of Massachusetts is greater than that of Sweden, Ireland, Scotland, England, and Belgium, but less than that of the other countries named in the table, that of Bavaria being greater than our own by 78 per cent."

State sanitation has been brought in Massachusetts to a high state of excellence through the efforts of Drs. Bowditch, Derby, Folsom, S. W. Abbott and our own former president, Walcott. The work of the Massachusetts State Board of Health is to be compared with the best existing. This is also true of many of the boards of health of our cities, especially that of Boston under Dr. Durgin, but unfortunately only to a limited degree of the State boards, and largely owing to the lack of proper legislative support. In the great State of Pennsylvania, the last grant for the Board of Health was only $8,000, exclusive of salaries of officials, for the coming two years' work. In New York State with its enormous wealth, the last annual appropriation was nearly one half less than that of Massachusetts, only $30,000, and in most of the States the regular appropriation granted is barely sufficient to continue the work of the regulation of the practice of medicine necessarily assumed by the boards of health.

The importance of sanitary work can not be overstated, and as it is clearly owing to a lack of public knowledge of the facts that it is defective in America, it is the duty of the medical profession to call attention to the matter. Obstacles may be imagined in the lack of interest on the part of the spoilsmen politicians — those whom Bismarck classifies as *novarum rerum cupidi* — but only eager for a chance for their own advantage. Politicians, however, even at their worst, are obliging tyrants, for they are certain to yield actively to determined public opinion. It is not difficult to awaken popular interest in improvements in laws relative to industrial hygiene, that is, the health of working people, in their various trades, in which we are behind both Germany and England, in the establishment of contagious hospitals, in which we are not as well supplied as in England, and in sanitaria for phthisis, in which America is less well advanced than Germany.

The importance of earnest efforts for the checking of tuberculosis is well expressed in this circular distributed by the German Bureau of Health:[16] "Some estimate may be made of the financial benefit which such public hospitals for consumptives would bring to the people by the following calculations: Assuming that only one-seventh or one-eighth of the 90,800 persons between the ages of fifteen and sixty who die annually in Germany from tuberculosis — or in round numbers, 12,000 — were subjected to treatment, and that of these three-fourths, or 9,000, were restored to health or ability to work, and thus remained alive and with their families for three years longer than would be otherwise possible; and estimating the wages of a man (in Germany) to be 600 marks ($150) a year, or say an average of 500 marks ($125) for each person between the ages of fifteen or sixty, then there would be a total gain of 3 x 500 x 9,000, equals 13,500,000 marks ($3,375,000), for those who were thus benefited. To do this would require an expenditure, say, of 400 marks ($100) for each of the 12,000 persons treated, without deducting interest on plant or a total cost of about 5,000,000 marks ($1,250,000.) If now the interest on the estimated capital necessary to maintain 4,000 beds be added to this, or 1,000,000 marks ($250,000) more, there would remain, after subtracting the total cost of 6,000,000 marks ($1,500,000) for the annual treatment of 12,000 patients, a total yearly gain to the public of 7,500,000 marks ($1,875,000). To this should be added the profit to the patients themselves in the pleasure of living, and the protection afforded to the children and families of those restored to health, to whom is thus preserved the support of the working father or care of the devoted mother for perhaps many years to come."

Our position in regard to mortality from phthisis is shown in the accompanying table, and also the need of strenuous endeavor to place ourselves in the front rank of public health. It is true that climate is a factor in the matter of tuberculosis, but rational treatment, proper environment, is probably of greater importance, and already sufficient gain has been shown to stimulate efforts which should place us with our wealth in the highest instead of the lowest place.

DEATHS FROM PHTHISIS AND PULMONARY TUBERCULOSIS PER MILLION INHABITANTS.

AVERAGE FOR YEARS 1887 TO 1893 AND 1894.

Prussia	2,715	2,389
Massachusetts	2,518	2,230
German Empire	2,428	2,363
Ireland	2,124	2,092
Scotland	1,794	1,723
England and Wales	1,568	1,385
Italy	1,340	1,303

DEATHS FROM TYPHOID FEVER PER MILLION INHABITANTS.

AVERAGE FOR YEARS 1887 TO 1893 AND 1894.

Italy	688	442
Massachusetts	380	310
Ireland	228	205
Prussia	215	151
Scotland	194	176
England and Wales	191	166
German Empire	165	131

DEATHS FROM SMALL-POX PER MILLION INHABITANTS.

AVERAGE FOR YEARS 1887 TO 1893 AND 1894.

Italy	293	85
England and Wales	17	27
Prussia	3	2
Ireland	1	16
Massachusetts	2	13
Bavaria	2	0.3
Saxony	2	1
Scotland	5	31
German Empire	3	2

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[15] Infant Mortality in Massachusetts, S. W. Abbott, M.D., Journal of the Massachusetts Association of Boards of Health, vol. viii, No. 4, 1898.

[16] From Circular from the Kaiserliches Gesundheitsamt.

DEATHS FROM DIPHTHERIA AND CROUP PER MILLION INHABITANTS.

AVERAGE FOR YEARS 1887 TO 1893 AND 1894.

Prussia	1,456	1,473
German Empire	1,383	1,308
Massachusetts	721	740
Italy	665	506
Scotland	405	413
England and Wales	307	350
Ireland	228	201

In regard to one disease the public sanitary sense appears to be excellent, namely, small-pox, and the marked improvement in mortality from diphtheria and croup in this city indicates sanitary and medical efficiency.[17]

We are told that "righteousness exalteth a nation, but sin is a reproach to a people." Sin can be interpreted as disobedience to the laws governing the universe. Where these laws are known the prevalence of disease becomes both a reproach and a national crime. It is the duty of our profession, of which it may be said, "Altius cæteris Dei patefacit arcana," to study and teach these laws. Is this done in America as it should be? In Germany there is an Imperial Health Office (*Kaiserliches Gesundheitsamt*). In England the Local Government Board regulates matters of health. In France the Council-General of Health (*Conseil générale de Santé*) is consulted on national health. Even in Italy there is a Hygenic Institute for advice. In America there is no national health commission, board or bureau. At the Congress of Tuberculosis, scientific American medicine was represented by a doctor of the Biochemic Department of the Agricultural Bureau at Washington. Should not our National Medical Association or our State societies, which have accomplished so much in improving the standard of the profession and of medical education, address themselves earnestly to the task of removing from our country the reproach of neglect of the highest functions of government, or from being what Dante terms,

"genti dolorose
"ch' hanno perduto 'l ben dello 'ntelletto."[18]

"An unfortunate race, who neglect the help of knowledge in sanitation," as it may be paraphrased.

This suggests an inquiry as to the worth of American contributions to the science of medicine as distinguished from the practical application of knowledge previously obtained. What has America contributed besides confirming, improving, adding to what has been discovered or taught by others?

When the record of this remarkable century which is ending is looked at from a sufficient distance for a proper estimate of values, the achievement most beneficial to humanity will perhaps seem to be the lifting of the art of medicine from the level of an unsatisfactory branch of metaphysics, vivified by empiricism, to the level of the science with the greatest promise to human welfare. Montaigne and Molière were not much in error in their ridicule of the medicine of their day. The empiricism of Chinese and Thibetan medicine, formulated for centuries in aphorisms, loaded with demonology and spirit worship, are not more tedious than the writings and discussions of two centuries ago, are full of discussions as to the humors, the mineral, vegetable and vitalistic theories of disease. The advance from this to the science of disease of to-day is, in the last one hundred years, chiefly the work of France and Germany. The work may be grouped as: Pathological research, by Cruveilhier, Rokitansky, Virchow and his pupils; improved methods of clinical observation and record, introduced by Corvisart, Lænnec, Louis and his followers; the great triumph of Pasteur in his demonstration of the influence of micro-organisms in the causation of disease; and its corollary, the protection and cure by attenuated virus, followed by the discovery of specific germs by Koch, his co-workers and followers; later the study of bacterial poisons and the cure by serum-therapy, developed by Behring, Roux, Ehrlich.

Lister laid humanity under the greatest debt by the application of the germ theory to surgery, and saved to the English-speaking race the credit of a share in the magnificent medical triumph of the century. It is impossible to associate American medicine largely with these achievements. It is difficult to connect an American observer with the discovery and demonstration of the germ of a human disease. In the study of the bacterial poisons, out of eighty-nine observers mentioned in an American text-book on the subject, but six are Americans, Italy contributing twelve and Japan four. Leidy's discovery of the trichinæ in the hog and Jeffries Wyman's confirmation of Pasteur's investigations were of much value, but hardly more than contributory. The discovery of anesthesia was of inestimable value, but although it is a source of national pride, it can hardly be considered an effort of scientific medicine; it was an achievement of magnificent empiricism.

As if to show no absence of true scientific spirit in this country, the work of Welch, Councilman, Sternberg can be mentioned, and of Vaughan, Novy, Chittenden and Minot, Bowditch, Howell, Porter, but especially the fruitful investigation of Theobald Smith. The work on the Texas cattle-plague was conducted under the direction of the Department of Agriculture, but its value to medicine is not limited to cattle.

The demonstration that certain diseases are conveyed by insects, the discovery of the germ, the investigation of the development in the intestine of the insect-carrier and of the transmission of the disease from the insect to a second animal, are achievements of the highest importance, and have been the forerunners of the important work on malaria in man, by Laveran, Ross and Grassi, a work, however, which is largely to the credit of French, Italian and English investigators.

It has been said so often that allowances should be made for us, a young country, that the truth of this has been generally accepted among us, forgetting the underlying fallacy of the statement. The founders of the country were not savages, but selected men, bringing the traditions of advanced civilization. It was said that "The Lord winnowed three kingdoms to plant New England." The early limitations were those of poverty, not of inclination, and poverty has been overcome among us for nearly a century. Our oldest university is nearly three centuries old. It has also been said that the genius of the American people is practical and not theoretical, and that the gift to humanity to be expected of us is to be in contributions to human physical welfare rather than to thought or research — an opinion more calculated to satisfy our national complacency than to add to our national influence; nor does the opinion stand the test of examination.

The growth in material prosperity of the North

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[17] The mortality in Boston from croup and diphtheria has been brought through the efficient efforts of the Board of Health to as low a rate as that seen in England.

[18] Inferno III, Canto III.

American Republic has been so extraordinary that it is not strange that it should overshadow advances in other directions. But if material growth has been our only achievement we must admit that our civilization is as yet incomplete or a failure, for "That society," says Emerson, "can never prosper, but must always be bankrupt, until every man does that which he was created to do." Is it true, however, that there has not been remarkable advance in scientific pursuits in this country?

In astronomical investigation the work of this country is in the first rank; the science of meteorology may be almost claimed as a national product; as in America it was first placed on a scientific basis, and it is in this country that its application is most general and most appreciated. Paleontology, geology, ethnology, biology and botany have in our American universities representatives of the highest rank. The archeological work of North America has been naturally more directed toward the archeology of this continent, but the recent researches in Chaldea and Babylon, as well as in Greece, have been of such excellence as to be universally recognized.

It can certainly not be claimed that the country is incapable of scientific effort. And if this is granted, and there is no lack of ability in the medical profession, the lack of achievement in this country in research in the medical sciences is evidently a defect. If the bridge over the Nile at Atbara is given to Americans because they are the best bridge-builders in the world, and if more than half the new stars discovered in this decade have been found by American observers, why is it that in the recent scientific investigations which have revolutionized medicine — the discovery of germs, toxins and antitoxins —America has taken almost no part? It is not that there is lack of energy or of ability in our profession or of wealth in our communities. The difficulty lies simply in the fact that the profession has not yet addressed itself earnestly to the problem of scientific medical research, but has been contented with the training of medical practitioners. So much is this true that the defect has hardly yet been realized, for as common-sense in the practitioner is the ideal striven for by the profession, so scientific research has been left to the efforts of others. Common-sense was of value in the days of theoretical speculation. But of what avail is common-sense as a help to a patient dying of cancer, or tetanus, or hydrophobia? The world to-day is waiting for new research. Is the American profession to remain behind? The remedy for this condition is simple and lies with the profession. The public should be informed of the needs of the time — a public which has never withheld financial support where the want has been shown. Well appointed and well supported laboratories for medical research are needed in every community, at every medical school and every hospital. Our medical schools should be organized for a greater purpose than granting diplomas or licensing young practitioners of medicine.

America is destined to be the great distributor of the world's products — natural and manufactured; it is certain to be blessed with wealth almost beyond limit, but as our great preacher has said, "God's gifts do not measure our worth but our responsibilities," and it is a serious question how our debt to the world is to be paid.

When the fleet at Cavite fired the volleys heard around the world, unexpected anxieties unnumbered came upon the country, but one great benefit will follow if the nation is brought to a sense of responsibility to the highest standards. We are no longer a young country to be judged apart from the rest of the world — we are to be measured by what is expected of us. This, from a land of our resources, will be the greatest gift to human welfare possible in human effort. Nothing less than this will save us from the stigma of shortcoming. There are difficulties in rising to the level of our opportunities, but

> "Steep and craggy is the path of the gods,"

and this high standard is held up to us in art, in science, as in commerce and in power.

America has been said to breed

> "A race of victors,
> A race ready for conflict, the race of the conquering march."

The conflict of the next century will be against ignorance, sorrow and suffering, and in this the medical profession must be foremost in strenuous endeavor.

Original Articles.

THE NON-RETARDING ACTION OF COMBINED HYDROCHLORIC ACID ON STARCH DIGESTION.

BY A. E. AUSTIN, A.M., M.D.,

Professor of Medical Chemistry, Tufts Medical College, Boston.

I HAVE shown in my previous investigation[1] that different albuminous foods, both of animal and vegetable origin, combine with or neutralize the free hydrochloric acid of gastric juice, and contrary to the usual conception, hydrochloric acid thus combined with albuminous foods has no hindering action on the diastasic digestion of starchy food, and that such state of neutrality exists during a period of one to three hours after eating, which period is proportional to the amount of nitrogenous food eaten; thus, practically the larger part of the starchy food we eat is digested in the stomach by the action of ptyalin of saliva before the free hydrochloric acid of the gastric juice presents its appearance and accumulates to the point where it hinders the salivary digestion of starch food.

The object of this effort is to supplement and confirm the results of my previous experiments in the human stomach. With the usual diet the amount of albuminoid food constitutes approximately one-fourth and the starchy or carbohydrate food constitutes two-thirds; the remainder, one-twelfth, consists of fats and other elements, whether the person is a meat eater or vegetarian. The former derives his albuminous material chiefly from animal food, such as meat, fish, etc., while the latter derives the nitrogeneous matter principally from leguminous food, such as peas and beans. I have observed the fact that all grains and other vegetables contain more or less albuminoid bodies, and they have the same properties of combining with hydrochloric acid as animal, so that the digestion of starchy food occurs in the stomach for the period of one hour, at least, even when one takes vegetable food only.

In carrying out this experiment Mr. McL., a student of mine, who has a rare faculty of being able to evacuate a portion of his stomach contents at his own will, without feeling any inconvenience, volunteered his services. He was in perfectly normal health.

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[1] Boston Medical and Surgical Journal, April 6, 1899.

The free hydrochloric acid was indicated by the use of one-per-cent. alcoholic solution of dimethyl-amido-azo-benzine as indicator, and then quantitatively determined by the decinormal solution of sodium hydrate. The total acidity was indicated and determined by the use of rosolic-acid solution as indicator. The presence of other acids was also tested for, such as butyric, lactic and acetic, each time, but having found the quantity was very small, no quantitative determination was made. Neither were acid phosphates determined.

The following are the results of the experiments:

No. 1. The lunch Friday, March 17, 1899, consisted of one plate of fish chowder, fried perch with salt pork, chicken liver sauté au Maderia, mashed potatoes, boiled rice, squash, cold boiled ham, four slices of bread (four ozs.), bottle of beer, hard crackers, American cheese, coffee.

The stomach contents were tested thirty minutes after eating. They contained no free hydrochloric acid, but contained a small quantity of combined acid and plenty of undigested starch.

At one hour after the meal a sample was again taken. There was no free hydrochloric acid; amount of total acidity increased with plenty of starch still undigested. At one and one-half hours another sample was taken, and the contents at this hour showed the presence of free hydrochloric acid and quantitative determinations of the acidity were as follow:

Total acidity	0.020805 grm. in 10 c. c. or 2 per m.
Free acid	0.006185 grm. in 10 c. c. or 0.6 per m.

No. 2. Normal case. Breakfast, March 18, 1899; finished 8.45 a. m.; consisted of one plate of oatmeal with milk and sugar, one cup of tea, one slice of bread with butter, one small steak.

Sample at thirty minutes after eating showed no free acid. The sample that was taken at one hour after the meal showed the following results:

Total acidity	0.01350 grm. in 10 c. c. or 1.3 per m.
Free hydrochloric acid,	0.004745 grm. in 10 c. c. or 0.4 per m.

At three hours a sample was taken; showed a marked increase of free hydrochloric acid, and, in order to prove that the albuminoid food does neutralize the free hydrochloric acid, two raw eggs were eaten; fifteen minutes afterward the contents taken showed no free hydrochloric acid, thus proving the complete neutralization of free acid by the egg albumin.

No. 3. Normal. Breakfast, March 20, 1898, consisted of one large saucerful of oatmeal, with milk and sugar, two fried eggs, two slices of bread with butter, one cup of coffee with sugar and milk.

A sample taken thirty minutes after eating showed no free hydrochloric acid, but showed the presence of a large quantity of starch. A sample taken at the end of one hour showed the amount of free hydrochloric acid to be as follows:

Total acidity	0.0219 grm. in 10 c. c. or 2.1 per m.
Free hydrochloric acid,	0.00949 grm. in 10 c. c. or 0.9 per m.

No. 4. With atropine. The foregoing are the results of tests on normal stomach contents, and, in order to see the effect of cutting off the supply of saliva upon starch digestion in the stomach, one-fiftieth grain of atropine sulphate was given half an hour before the meal, which stopped the flow of saliva to a remarkable extent.

The lunch following the atropine was taken March 20, 1899, and consisted of the following dishes: One plate of consommé vermicelli, fried cod with salt pork, pork chops with fried apples, potato salad, orange sherbet, one glass of milk.

Forty-five minutes after the meal a sample was taken, which showed a very slight digestion, and contained no hydrochloric acid, while the starch was practically untouched. Second sample, obtained one hour and fifteen minutes after eating, was still thick, and showed very slight digestion and no free hydrochloric acid. Third sample, taken after one and three-quarters hours, showed the presence of free hydrochloric acid and plenty of undigested starch.

Total acidity	0.01642 grm. in 10 c. c. or 1.6 per m.
Free hydrochloric acid,	0.00730 grm. in 10 c. c. or 0.7 per m.

No. 5. With taka-diastase. Breakfast, March 31, 1899, consisted of one saucer of oatmeal with milk and sugar, two slices of bread and butter, one beefsteak, boiled potatoes, one cup of coffee with milk and sugar.

A dose of taka-diastase was given at the end of the meal. The first sample, taken in thirty minutes after eating, showed no free hydrochloric acid and indicated the presence of a slight quantity of starch. Second sample, obtained one hour after eating, showed some acidity and a very small quantity of undigested starch, consisting chiefly of pieces of crusts of bread.

Total acidity	0.019710 grm. in 10 c. c. or 1.9 per m.
Free hydrochloric acid,	0.008395 grm. in 10 c. c. or 0.8 per m.

No. 6. With taka-diastase. Lunch, March 21st, consisted of one Manhattan cocktail, one plate consommé, barley, broiled shad, maître d' hôtel, one bottle of beer, calf's liver and bacon, baked macaroni with cheese mashed potatoes, boiled onions, watercress salad, vanilla eclairs, jelly tarts, one cup of coffee, three slices of bread with butter.

At the end of the meal a dose of taka-diastase was given. The first sample, taken forty-five minutes after eating, showed no free hydrochloric acid and some undigested starch. A second sample, taken after one hour, showed no free hydrochloric acid, but still some starch. The third sample, taken after one and one-half hours, possessed no free hydrochloric acid, and starch was shown to be present to a very slight extent. Fourth sample, taken two hours afterward, showed that the starch particles were practically digested, with the exception of a few specks here and there, which consisted of hard starch particles from the food.

Total acidity	0.025915 grm. in 10 c. c. or 2.5 per m.
Free hydrochloric acid,	0.010220 grm. in 10 c. c. or 1 per m.

This case shows a remarkable contrast to experiment No. 1, in the diminished amount of undigested starch left in the stomach.

No. 7. With taka-diastase. Breakfast, March 22, 1899, consisted of one saucer of oatmeal with milk and sugar, piece of beefsteak, fried potatoes, two slices of bread and butter, one cup of coffee, with dose of taka-diastase after the meal.

The first sample was obtained one hour afterward and found to contain no free hydrochloric acid, while the starch was practically digested.

Total acidity was found to be 0.015885 grm. in 10 c. c. or 1.5 per m.

Three and one-half hours after eating the stomach was practically empty, so that no sample could be procured.

No. 8. With taka-diastase. Lunch, March 22, 1899, consisted of one plate of consommé printanière, fried perch with pork, one bottle beer, lamb sauté bourgeoise, mashed potatoes, squash, cold ham, celery salad, one slice of bread and butter, hot gingerbread, orange cream, one cup of coffee; dose of taka-diastase was taken after meal.

The first sample was taken one hour after eating and some starch was found, but no free hydrochloric acid. The second sample, taken one and a half hours after eating, contained no free hydrochloric acid, while the amount of undigested starch was greatly diminished. The third sample was taken after two hours. Still there was no free hydrochloric acid and the starch was practically all digested. Fourth sample was obtained two and a half hours afterward and showed presence of free hydrochloric acid, while the starch was practically gone. The quantity of acid was as follows:

Total acidity . .	0.014965 grm. in 10 c. c. or 1.4 per m.
Free hydrochloric acid,	0.005475 grm. in 10 c. c. or 0.5 per m.

No. 9. With Ewald-Boas's test meal. Breakfast, March 23, 1899. In order to determine the period of the first appearance of the hydrochloric acid where the usual test breakfast is given, in order to compare that result with those of ordinary meals, the Ewald-Boas meal was given, which consisted of two slices of bread, one cup of tea, one glass of water.

First sample was taken twenty minutes after eating and showed presence of a trace of free hydrochloric acid. The second sample was obtained thirty minutes after eating, and the acidity was as follows:

Total acidity . .	0.0113505 grm. in 10 c. c. or 1.1 per m.
Free hydrochloric acid,	0.007665 grm. in 10 c. c. or 0.7 per m.

Quite a visible quantity of starch was left undigested. Third sample taken at the end of one hour showed:

Total acidity . .	0.021535 grm. in 10 c. c. or 2.1 per m.
Free hydrochloric acid,	0.014600 grm. in 10 c. c. or 1.4 per m.

Some starch was still undigested, which was comparatively large for the small amount of starchy food taken, namely, one slice of bread.

These experiments confirm all the previous records on such test meals where very little or no nitrogenous foods are taken, that is to say, the free hydrochloric acid makes its appearance at the end of twenty minutes after eating, and at the end of thirty minutes the amount of free hydrochloric acid already equals that amount which one finds one hour after eating an ordinary lunch. At the end of one hour the amount of free hydrochloric acid is doubled as compared with the sample of half an hour and corresponds to about the quantity of free hydrochloric acid found two or three hours after one has eaten an ordinary lunch. This shows that the stomach under investigation is that of an average healthy person. It strikes me that some of the previous investigators observed the condition of secretion of hydrochloric acid after giving a light, non-albuminous test meal, and applied the result of such investigation to the condition of the stomach after eating the usual meal, thus causing a misunderstanding or mistaken representation of the actual secretion of acid in stomach.

No. 10. With taka-diastase. Lunch, March 23d, consisted of one glass of rye whiskey with water, consommè, Italienne paste; broiled schrode, maître d' hôtel; one bottle of beer, fricassee of turkey wings with peas, Boston baked beans, mashed potatoes, potato salad, pineapple frappé, jelly roll, one glass of milk. A dose of taka-diastase was taken directly after the meal.

First sample was taken one hour after eating; there was no free hydrochloric acid. A comparatively small quantity of starch was found. The second sample was taken half an hour after eating, which contained no free hydrochloric acid. The amount of starch was decreasing. Third sample was taken two hours after eating. No free hydrochloric acid. Fourth sample was taken two and one-half hours afterward and still there was no free hydrochloric acid, while the starch was practically digested. Fifth sample was taken three hours and ten minutes afterward and showed the presence of free hydrochloric acid, and the result of its determination was as follows:

Total acidity . . .	0.02007 grm. in 10 c. c. or 2 per m.
Free hydrochloric acid,	0.00912 grm. with 10 c. c. or 0.9 per m.

No. 11. Normal. Breakfast, March 24, 1899, consisted of one bowl of oatmeal, two fried eggs, two fresh biscuits and butter, one cup of coffee.

First sample taken at the end of an hour showed:

Total acidity . .	0.013505 grm. in 10 c. c. or 1.3 per m.
Free hydrochloric acid,	0.00803 grm. in 10 c. c. or 0 8 per m.

No. 12. With atropine and taka-diastase. Lunch, March 24, 1899. Half an hour before the meal one-fiftieth grain atropine sulphate was taken to stop as much as possible the secretion of saliva, and the meal was as follows: one plate of clam chowder, fried deep-sea flounders with pork, one bottle of beer, baked macaroni with cheese, cold boiled ham, mashed potatoes, vanilla cream. A large dose of taka-diastase was taken during the meal to supply the deficiency of the flow of saliva.

First sample was taken half an hour after eating. No free hydrochloric acid in start, remarkably well digested in comparison with No. 4. A second sample was taken one and one half hours after; there was no free hydrochloric acid and a small quantity of starch. Third sample was taken two hours after eating. No free hydrochloric acid and very little starch left. Four hours after eating the acidity was as follows:

Total acidity . . .	0.02518 grm. in 10 c. c. or 2.5 per m.
Free hydrochloric acid,	0.01314 grm. in 10 c. c. or 1.3 per m.

It will be observed that the digestion of starch in this case is very much similar to that of the normal, proving that the taka-diastase will perform the function of natural saliva, and in case, therefore, where the diastatic power of saliva becomes deficient from the weakening of its power or from its lessened quantity, the use of taka-diastase will benefit the case to a remarkable and satisfactory extent.

No. 13. Breakfast, March 25th, consisted of one plate of oatmeal, two lamb chops, fried potatoes, two slices of bread with butter, one cup of coffee.

A sample half an hour afterward showed no free hydrochloric acid, and a sample one hour after eating showed the following acidity:

Total acidity . . .	0.02198 grm. in 10 c. c. or 2.1 per m.
Free hydrochloric acid,	0.01350 grm. in 10 c. c. or 1.3 per m.

CONCLUSIONS.

The foregoing experiments seem to prove the following facts:

(1) That when a non-albuminous test meal is given, free hydrochloric acid makes its appearance at the end of twenty minutes after eating, and at the end of half an hour the amount of free hydrochloric acid equals that of one or two hours after eating where albuminous foods are taken, as shown by experiment No. 9.

(2) Under normal conditions, the ptyalin of saliva digests most of the starchy constituents of food in the stomach within one or two hours, which takes

place before free hydrochloric acid accumulates in the stomach to such an extent as to interfere temporarily with the diastatic action of saliva on starchy food. Those portions of starchy food which remain comparatively undissolved, and pass over to that portion of the digestive canal where they are acted upon by the pancreatic diastase, constitute a very small portion of the starchy food taken.

(3) That the administration of isolated diastase considerably enhances the digestion of starchy food in the stomach even under normal conditions is shown in experiments Nos. 7, 8 and 10.

(4) The elimination of the supply of the ptyalin of saliva to the stomach will cause marked retardation of starchy digestion in stomach, as shown in experiment No 4.

(5) A maldigestion of starchy food, due to the deficiency of the diastatic power of saliva, can be regulated by the administration of isolated diastase, as shown in experiment No. 12.

(6) The impression held by many that the diastase of saliva becomes non-active fifteen or twenty minutes after eating is totally erroneous.

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LOCATION OF THE RIGHT AND LEFT BORDERS OF THE HEART BY DISTANCE FROM THE MEDIAN LINE.

BY FRANCIS H. WILLIAMS, M. D., BOSTON.

I wish to advocate a determination of the right and left borders of the heart by their distance from the median line because it is a more accurate method that the one now generally used of designating its left border by reference to the nipple and its right border by reference to the sternum. In women the nipple line is too indefinite to be considered, and in men the position of the nipples varies considerably; for instance, in 21 men in one of my wards at the Boston City Hospital, the distances between the nipples averaged 21.5 centimetres; the shortest distance was 18.5, the longest 25.5 centimetres. In other words, in 21 patients the variation between the extremes was 7 centimetres, from nipple to nipple, or 3.5 between the median and the nipple lines. Thus we see that the position of the nipple may vary in its distance from the median line by more than an inch, or, to be exact, by one and three-eighths inches. Such a variation in the size of the heart as this might mean serious disease. The statement that the left border of the heart is a little inside the nipple line would not strike us so forcibly as if we were told that it was an inch further to the left than in health. Moreover, if we determine the right border of the heart as so many centimetres or inches to the right of, and the left border as so many centimetres or inches to the left of, the median line, we determine not only how much it is to the right or to the left, but by adding the two quantities together we readily get the total width of the heart. The width cannot be obtained so accurately when the right border is determined with reference to the sternum, and the left body with reference to the nipple.

The Deadly Headache Powder. — Three deaths from the taking of headache powders are reported to have occurred recently in Allegheny County, Pa.

Clinical Department.

CHRYSAROBIN A SPECIFIC FOR WARTS.

BY O. W. FITZ, M.D., CAMBRIDGE,

Assistant Professor of Physiology and Hygiene, and Medical Visitor, Harvard University.

Since 1895, when Dubreuilh[1] called attention to the presence of warts on the feet, the characteristic differences between warts and corns have been more or less generally recognized. Warts on the feet are readily distinguished by their location (usually upon the plantar aspect of the foot) and by their bleeding from a central, vertical bundle of papillae arranged like a pepper-box and ordinarily projecting somewhat above the pared surface. This central bundle of papillæ is surrounded by a thickened area of skin penetrating to a greater or less depth and an outer painful zone of inflamed skin.

In 1891 I saw for the first time a wart in this situation and attempted to cure it with salicylic acid in collodion. I found after a trial of three weeks that this was not effective. I was then led, from its superficial resemblance to the lesion of psoriasis (bleeding points), to try a solution of chrysarobin in gutta-percha. The wart was thoroughly pared until there was profuse bleeding and the solution applied to the denuded surface. The patient was directed to cut the surface every night and apply the chrysarobin. In a few days the pain disappeared, and the wart seemed diminished in size. In two weeks' time the wart was practically gone and the surface restored to its normal condition.

Since that time I have been able to apply chrysarobin in eight cases of warts similarly located. Some were apparently due to stone bruises; others, to the irritation of defects in the boot; and of others, again, no history could be obtained. In one case there were three warts on the ball and two upon the heel of the same foot. Several of the cases came to me after having been treated for months by salicyclic acid without success, even though the physician in charge had made the application himself each week.

In most cases the chrysarobin produced little effect before the end of the first week, except that the pain became less and the wart did not increase; in the second week, change was rapid in most of the cases, although in a few cases there was still little effect. In the third week the majority were cured.

In the series of eight cases there have been no failures. Two apparent failures were traced to difficulty in paring the wart and as soon as this was remedied by sandpapering the cure progressed favorably. On the whole, careful thinning of the surface with a sharp fine glass-paper gives better results than paring with a knife, as the patient is less afraid of injuring himself and can more conveniently handle the paper.

My experience has been that chrysarobin may be applied either in a ten-per-cent. solution of the ordinary gutta-percha solution or in a ten-per-cent. ether solution. It is best to apply the chrysarobin at night and to advise the patient to put on an old stocking. to prevent soiling the bed-clothing. Application once a day in this way seems ordinarily to be sufficient, but in obstinate cases it should be applied both night and morning.

The influence of the chrysarobin seems to be not only upon the keratinized portion of the skin but also upon the proliferated blood-vessels in the papillary central part, for both disappear and true skin is formed over the surface. No scab was thrown off, but a considerable thickness of the surface was removed in each case by cutting and sandpapering.

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[1] Annales de Dermat. et de Syph., May, 1895, reviewed by Bowen in Boston Medical and Surgical Journal, vol. cxxxv, p. 262.

A correspondent has reported two additional cases of cure with chrysarobin, making the total number of cases ten. The attempt to try the effect of chrysarobin on warts on other parts of the body has been possible in but one case (warts on the hand), where it had the same favorable effect.

Experiments with chrysarobin on corns shows that it has practically no effect.

The claims of chrysarobin as a specific for warts may be summed up as follow:

(1) Success in a series of ten cases of warts on the sole of the foot in which the diagnosis was perfectly clear.

(2) Similar success in one case of warts on the hands.

(3) No failure in any case where the application was made repeatedly on the denuded surface of the wart.

(4) No subsequent recurrence of the warts.

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Reports of Societies.

AMERICAN SURGICAL ASSOCIATION.

Abstract of the Proceedings of the Twentieth Annual Meeting, held in Chicago, May 31, June 1 and 2, 1899.

The Association met in the hall of the Chicago Medical Society, and was called to order by Dr. W. W. Keen, of Philadelphia.

Professor de Laskie Miller, of Chicago, delivered an Address of Welcome, which was responded to by the President.

The first Vice-President, Dr. Albert Vander Veer, of Albany, then took the chair, and President Keen delivered his Address. He selected for his subject:

THE TECHNIQUE OF LARYNGECTOMY.

He began by saying that he has been ill satisfied with the usual technique of laryngectomy, and, as in a recent case he adopted a method which rendered the operation one of simplicity, caused but little loss of blood and little shock, and avoided the danger of aspiration pneumonia, he ventured to bring it before the Association in the hope that it will be tested by others so as to determine its real value. Instead of being a very severe and dangerous operation, as it has hitherto been regarded, he hopes this will place it in the category of safe operations.

Nearly all authors, whether surgeons or laryngologists, speak of the operation as an extremely severe and dangerous one, and this view is warranted by its past high mortality.

Thus Rutsch speaks of the "recovery as very doubtful." Sendziak states that up to 1881 30 cases had been operated upon with 17 deaths, a mortality of 56.7 per cent., and that in all the 30 there was only one definitive cure, that is, in which three years or more had passed without recurrence. Later statistics, fortunately, have proved progressively more favorable. Thus Sendziak tabulated, from 1873–1894, 188 cases of laryngectomy for carcinoma. The results are thus tabulated: (1) Recurrence, 32.45 per cent.; (2) relative cure (less than three years), 6.9 per cent.; (3) definitive cure (three years or more), 5.85 per cent.; (4) death, 44.7 per cent.

Schmiegelow has tabulated 50 cases of total laryngectomy from 1890 to 1897, and these still later statistics are far from encouraging. His table shows: (1) Recurrence 20 per cent., a fall of 12 per cent. from Sendziak's table; (2) relative cure, 48 per cent., a rise of 41 per cent. from Sendziak's table. (3) definitive cure, 10 per cent., nearly double that of Sendziak's table; (4) death, 22 per cent., one-half that of Sendziak's table.

The mortality, it will be observed, therefore, has been halved and the definitive cures doubled, as compared with Sendziak's statistics. Were the cases occurring from 1890 to 1894 excluded from Sendziak's statistics the relative difference would be even more favorable.

The causes of the mortality are chiefly: (*a*) weakness of the patient by reason of the disease, the poor aëration of the blood, and the entrance of septic discharges from the diseased larynx into the lung before the operation; (*b*) shock, including hemorrhage during the operation; and (*c*) after the operation, septic pneumonia, due to the aspiration of infected wound fluids. This is the greatest danger of all. The sources of these wound fluids are twofold: *First*, the tracheotomy wound if, as is usual, tracheotomy has been done; and, *Secondly*, the wound left by the removal of the larynx. These wound fluids are usually infected from the food, the secretions of the mouth, and the packing by iodoform gauze, which renders primary union impossible.

While the method which he wished to describe did not obviate the weakness or any other unfavorable influence from the general condition of the patient prior to operation, it minimizes the other causes of death, and especially the possibility of pneumonia.

He cannot claim originality for any one of the steps, for they have all been employed, he believes, by others. Thus Bardenheuer closed the communication between the trachea and the pharynx, but he only kept it closed until the wound became covered with granulations, and complications were no longer to be feared, say fourteen days. The communication was then reopened for the insertion of an artificial larynx. After adopting this method he had had four recoveries, while by the former method he had had four deaths. Cohen united the stump of the trachea to the skin, one of the most important improvements in the technique, since it prevents in a large measure the access of wound fluids to the lungs. Other surgeons also have used the Trendelenburg posture, etc. But as a systematically planned operation, combining many advantages, the present technique as a *tout ensemble* may be called original.

(1) The general preparation of the patient is the same as for any other operation.

(2) *Preliminary Disinfection.* — As in all cases about the mouth, nose, pharynx and larynx, he is particularly careful to make a systematic attempt for two or three days beforehand to secure at least partial disinfection. While partial disinfection is not as good as complete, yet the results in treatment of fractures of the base of the skull, in the extirpation of rectal tumors, etc., show its great value.

He has the teeth very carefully cleansed by the toothbrush. If there are any old stumps of teeth present it is better that they should be extracted, and the operation deferred a few days until these dental wounds heal. For two or three days before the operation every two hours, when the patient is awake, he has the mouth and each nostril sprayed separately with a solution of boric acid, listerine, or both.

(3) *Tracheotomy.* — Nearly all authors recommend a tracheotomy either as the first step of the operation or, more frequently, ten to fourteen days before operasion. In the few cases in which dyspnea is great he should be disposed to do a tracheotomy, say two weeks before the laryngectomy; not, however, with a view of preventing the entrance of blood and wound fluids into the lungs by the introduction of a tampon canula, but for the purpose of improving the general condition of the patient. In the case which is the basis of this paper he did a tracheotomy at the time of operation, but removed the tracheal tube at the termination of the laryngectomy, immediately closed the wound in the trachea, and obtained absolutely primary union. In any future case he is strongly of opinion that it would be better to omit tracheotomy entirely. As he would show, it was not, in his opinion, needful, and by omitting it we would eliminate one cause of septic pneumonia.

(4) *Posture.*— The entire operation, after the trachea is invaded, is done with the patient in the Trendelenburg position. He is quite persuaded that the majority of surgeons do not appreciate to its full the advantages which this posture possesses in all operations about the upper air passages. As he had pointed out in a previous paper, he employs it in epithelioma of the lip, in extirpation, or other operations on the upper and lower jaw, in removal of the tongue, in cleft palate, in operations on the tonsils and pharynx and all similar operations. Blood will not run up hill any more than water, hence, if we employ this posture in laryngectomy, we avoid one of the chief reasons for tracheotomy and the employment of a tampon canula.

The disadvantages of tampon canulæ are very great. Kocher, like himself, has lately dispensed with them entirely. The three most commonly used are those of Trendelenburg, Hahn, and Gerster. Of the three, Gerster's is distinctly, in his opinion, the best. It can be more accurately adapted to larynxes of varying sizes, and is much less likely to injure the parts either by undue pressure or by difficulty of introduction. In one case in his attempts to introduce a Hahn canula the rings of the trachea were considerably torn. The objections to Trendelenburg's canula are arrest of respiration, which sometimes follows its introduction, the production of pressure gangrene in the trachea, obstruction to the lower end of the tube by the rubber ballooning into the trachea beneath it, the bursting of the rubber or its being cut, and if none of these mishaps occur, the air often gradually escapes, and thus renders it useless.

The Hahn canula cannot be made aseptic so easily as the others; and as Lennox Browne has pointed out, it requires sometimes twenty minutes for the expansion of the sponge after its introduction.

(5) *Anesthesia.* — This is done at first through the mouth, and is so continued until the larynx or trachea is invaded. A large tracheotomy canula (twelve millimetres in diameter) is then introduced, and held in place by disinfected tapes tied around the neck, The inner tube of this canula is removed and the metal tube of a Hahn canula, which precisely fits it, introduced. A rubber tube connects this with the ordinary funnel for the administration of chloroform.

(6) *The Operation Proper.* — He described the operation in connection with the case reported, and then indicated the improvement in technique, which he purposed adopting in the next case he might have.

(7) The after-treatment:

(*a*) *Posture.* — The patient is kept in the Trendelenburg position by placing a chair under the foot of the bed. This posture prevents any wound fluids from running down (or rather up) into the lungs. This position is to be maintained for one day. On the second day the bed is lowered to the horizontal plane. On the third day he is allowed to sit up in bed on a bed-rest; on the fourth to get out of bed and sit in a reclining-chair; and on the fifth day he may walk about the room.

(*b*) *Food.* — For two days nutritive enemata only are to be used. After that a teaspoonful of liquid food is given, at first every half-hour, always followed by a tablespoonful of sterile water to wash away any food that might possibly leak into the laryngeal wound. At the end of a weak full diet as to quantity may be given, but no solid food is to be given until the tenth day. No catheter or esophageal tube is required. The present patient could swallow from the very first.

(*c*) *Dressing.* — The primary dressing was described in connection with the case. On the day after the operation the small gauze drain is to be removed. Half of the stitches may be taken out on the fourth day, and the remainder on the sixth day. In the case reported the temperature on the day after the operation rose to 101.8° F., and fluctuated between the normal and 101° for a week, when it fell to the normal.

(8) *Objections.* — The only objection to this method which occurred to the author is, that it absolutely precludes the use of any artificial larynx. But the possession of voice is nothing when compared with a speedy recovery and a greatly diminished danger of a fatal result. Rutsch believes such a larynx is very unsatisfactory.

Of course, he recognizes the fact that one case does not prove the value of any method, but its advantages were so striking in this case that, as laryngectomy is a relatively rare operation, he has not thought it best to wait until he could accumulate a much larger experience before bringing it to the attention of the profession.

(9) *Final Results.* — Of course, it is too early yet to draw any inference as to the possibility of recurrence in this particular case; nor is this his purpose. His intention had been rather to demonstrate a method of laryngectomy which would diminish more especially the immediate mortality of the operation and secure speedy recovery by primary union. The changes of recurrence are no greater, nor yet any less, after operation by this method than by any other. This particular patient has been able to go out in all weathers during the past extremely severe winter, though living as far north as Waterville, Me., where the thermometer has been many degrees below zero.

At the conclusion of the President's Address a symposium on

THE SURGERY OF THE SPANISH WAR

was taken up.

The first paper was read by DR. NICHOLAS SENN, of Chicago, entitled

THE FIRST-AID PACKAGE IN MILITARY SURGERY.

He stated that two things were brought out clearly during the Russo-Turkish War, namely, the value of first-aid antiseptic occlusive dressing in the prevention of wound infection, and the importance of immediate immobilization of compound gunshot fractures. He suggests the following first-aid package for field use and emergency work: Two pieces of lintin, a form of compressed cotton, four inches wide and sixteen inches long, sterilized and folded twice lengthwise; a teaspoonful of the boro-salicylic powder in a small waxed aseptic envelope; between them a piece of sterile gauze, forty-four inches square, with two safety-pins, folded to corresponding size with the lintin compress; all of these articles wrapped in tin foil; two strips of rubber adhesive plaster, an inch wide and eight inches long, the whole to be sewed in an impermeable canvas or linen cover. In using the package the powder is applied to the wound, when the lintin is used as a compress, held in place by the strips of adhesive plaster, and the gauze bandage over it. If two wounds are to be dressed at the same time, as is usually the case in modern warfare, the contents of the package are equally divided and used, which can be done without materially impairing the efficiency of the dressing. The slight hemorrhage in wounds inflicted by the small-calibre bullet will soon saturate a part of the dressing which by evaporation will soon convert the antiseptic powder and the cotton into a dry antiseptic crust, the very best protection for the wound against infection. Many military surgeons have expressed themselves recently as being opposed to the employment of the first-aid package by any one else except medical men. This position Dr. Senn thinks will be found untenable during any great war, when the number of wounded would greatly exceed the working capacity of the limited number of surgeons.

In summarizing he emphasized the following conclusions:

(1) First-aid packages are indispensable on the battlefield in modern warfare.

(2) The first-aid dressing must be sufficiently compact and light to be carried in the skirt of the uniform, or on the inner surface of the cartridge or sword belt, to be of no inconvenience to the soldier or in conflict with military regulations.

(3) The Esmarch triangular bandage is of great value in the school of instruction, but in the first-aid package it is inferior to the gauze bandage.

(4) The first-aid package must contain in a waxed aseptic envelope an antiseptic powder, such as boro-salicylic powder, sterilized pins wrapped in tin foil, and between this package and the outside impermeable cover, two strips of adhesive plaster an inch wide and eight inches long.

(5) The first-aid dressing must be applied as soon as possible after the receipt of the injury, a part of the field service which can be safely entrusted to competent hospital corps men.

(6) The first-aid dressing, if employed behind the firing line, should be applied without removal of the clothing over the injured part and fastened to the surface of the skin with strips of rubber adhesive plaster, the bandage being applied over and not under the clothing.

(7) The first-aid dressing must be dry and should remain so by dispensing with an impermeable cover over it, so as not to interfere with free evaporation of the wound secretion.

(8) The first-aid dressing should not be disturbed unnecessarily, but any defects should be corrected at the first dressing station.

DR. N. M. FEREBEE, Medical Inspector of the United States Navy, Norfolk, Va., followed with a paper on

THE BATTLESHIP IN WAR.

He described a modern battleship, spoke of the preparations for war and the conditions during war. He also narrated his experience with modern rifle bullets and with shells, closing his paper by detailing interesting cases.

DR. GEORGE R. FOWLER, of Brooklyn, read a paper on

THE ORGANIZATION AND EQUIPMENT OF MILITARY FIELD HOSPITALS.

The question of the establishment of division hospitals in the volunteer army met with lively debate and at times violent opposition early in the Spanish-American War. Regimental commanders, supported to a greater or less extent by the regimental surgeons themselves, took very decided ground against sending their sick away from their own organization. Experience and careful consideration impel the conviction that, as against small regimental hospitals on the one hand, and top-heavy division hospitals on the other, the brigade hospital offers a logical compromise. Under the head of organization, the essayist dealt with executive offices, dispensary, property office, post-office, quartermaster's office, commissary office, medical ward, surgical ward, operating tent or pavilion, pathological and bacteriological departments, cooking department, diet kitchens, sanitary and disinfection department. In referring to location and arrangement, he spoke of the selection of a site of open spaces, which he said were to be preferred to wooded areas, soil, drainage, arrangement of wards, sinks, the cremation of garbage and typhoid excreta, kitchens and mess tents.

In referring to equipment, he spoke of tentage, pavilions, furniture, linen, medical supplies, anesthetics and antiseptics, instruments, sterilizers, operating tent furniture, ligature and suture materials, dressing materials, splint material, and transportation facilities. Lastly, he dwelt upon the *personnel* which comprises executive and administrative officers, professional staff, ward officers, operating staff, ophthalmologist, aurist, dentist. Officers serving in a professional capacity should be relieved of all property responsibility. He then spoke of male nurses, female nurses, hospital corps, medical-department quartermasters and commissaries.

DR. CHARLES B. NANCREDE, of Ann Arbor, Mich., followed with a contribution on

THE EFFECTS OF MODERN SMALL-ARM PROJECTILES AS SHOWN BY THE WOUNDED OF THE FIFTH CORPS.

Reports show that about fourteen hundred wounded were cared for at the hospital with which he was connected, for nearly all of the injured in the Fifth Corps who survived for twenty-four hours sooner or later passed through their hands, so that fresh wounds and those of a day to a week or more were observed.

Flesh wounds were always of a trivial nature, unless the ball became deformed by striking some extraneous object, or when stripping its mantle, as it sometimes did. This immunity enjoyed by the flesh wounds caused by Mauser and Krag balls resulted, *first*, from the slight amount of contusion caused by the rapidly moving ball; *second*, the aseptic condition of the ball, and *third*, the rarity of the carriage of fragments of clothing into the wound, as was not uncommonly done by the 43-calibre Remington, brass mantled balls. If maintained aseptic, the majority of flesh wounds healed almost as if they had been incised wounds, not uncommonly cicatrizing under the primary field dressing made with the first-aid package.

Contusions, or slight wounds of the great vessels leading to so-called traumatic aneurisms, or aseptic or septic sloughing of the vessels many days after the receipt of the wound, were far from uncommon. Thus, he saw one wounded subclavian where the patient survived over three weeks to finally succumb to hemorrhage during an attempt to ligate the vessel, which was torn for a long distance. He also knew of another dying on the table some weeks after being wounded during an attempt to secure the same vessel. He tied the common femoral for wounds and assisted a colleague in securing another days after the receipt of the injury. He tied one radial for secondary hemorrhage and ordered the tying of an ulnar for ball injury several days after their division, and was compelled to amputate an arm, after failing to secure a bleeding brachial in an apparently aseptic wound, two weeks after the man had been shot.

Largely because all important vessels which were wounded did not give rise to immediate death from hemorrhage, conjoined with the less severe character of the head, thoracic and abdominal injuries than was anticipated, the mortality on the field was much lower than was expected, about one-fifth of those struck perishing on the field. Some of the saving of life was doubtless due to the prompt aid given the wounded by the surgeons, who rendered aid under fire.

The greatest advance in military surgery on the battlefield in recent times is the first-aid packet, and the greatest boon conferred on the wounded soldier has been asepsis and antisepsis, because, in the majority of instances, rendering his injuries so painless and their complications so slight that even anesthetics no longer occupy the chief place as a blessing to the wounded, because comparatively rarely needed.

Antiseptic occlusion also proved the best treatment for most of the thoracic, abdominal and articular injuries. The confidently prophesied violent hemorrhage from the small vessels of the lung parenchyma did not occur in any case seen by him. The amount of bleeding into the chest cavity never required primary intervention for its arrest, and, he is informed by others, rarely required operation later, even then aspiration usually proving amply sufficient, because infection had been avoided.

All perforating ball wounds of the abdomen operated upon, he was informed, perished, while a number he saw recovered without intervention, antiseptic occlusion being relied upon. Wounds of the liver and kidneys did not seem to give rise to dangerous infection in the small number treated. If section cannot be done before peritoneal infection has become well established, both civil and military surgeons have long believed that poor as are the chances of recovery, they are lessened rather than increased by a section.

Dr. M. H. Richardson, of Boston, read a paper on

APPENDICITIS.

(*a*) SHOULD EVERY CASE BE OPERATED UPON AS SOON AS THE DIAGNOSIS OF APPENDICITIS IS MADE?

(*b*) SHOULD THE APPENDIX BE REMOVED IN EVERY CASE?

At the bedside, in a specific case of appendicitis, there would be doubtless little difference of opinion among even those surgeons who seem to differ materially in the expression of their views. What one may describe as a severe case another may regard as a mild one; what one may consider a hopeless infection another only a desperate one, and so on. The conclusions arrived at are the result of experience in more than 900 cases, personally observed and treated, and of personal observation of many others in the practice of hospital colleagues. The total number is 904. In 259 cases of operation in acute cases 72 died, 4 of these deaths were in the hands of other surgeons; 189 acute cases were not operated upon. Of these, 31 died, probably all moribund at the time of first examination. The total operations are 569, of which 238 were interval operations, without a death. Total number of operations in acute stage, 331; mortality in acute stage, 21.5.

Many of these fatal cases were desperate ones. All were severe. The mortality in acute cases without operation was fully 31 in 189 cases. But practically all these fatal cases were moribund and hopeless when first seen. Had all acute cases been operated upon, the mortality after operation would have been reduced, because most of the acute cases not operated upon would have recovered also with operation. In fact, most of the cases were operated upon in the interval. Deductions from mortality tables are misleading. It would be as unfair to conclude because a long series of bad cases had died after operation, that therefore no operation should ever be performed, as to conclude that because practically all the reader's acute cases unoperated upon recovered (excluding the moribund), therefore no operation is ever necessary.

There is a wise middle course by which unnecessary operations are avoided, and necessary ones are performed. In the initial stage severe symptoms of onset demand immediate intervention. These symptoms are pain, vomiting, tenderness, rigidity, shock — those common to most acute abdominal emergencies. In many cases these symptoms will subside, but the general trend of a case cannot be determined at one observation. Exploration is therefore indicated. The surgeon must expect often to find other lesions than appendicitis at the initial stage, but lesions quite as important and often demanding intervention even more urgently. Cases of mild onset may well wait until a second observation shows the probable course of the case. Time thus spent is wisely spent.

The most important question is not whether to operate in appendicitis, but rather when to operate. In view of the great mortality after operation in severe cases, of the disadvantages following the drainage necessary in septic cases, weakness of muscles, stretching of scars, hernias, and the like, the best time to operate is in the period of perfect health following the attack. In a large percentage of acute cases recovery from the acute attack will take place, and operation can be safely performed through a small incision which will not weaken the abdominal wall. Cases must not be watched, however, unless there are reliable signs of convalescence.

After the initial stage the question of intervention becomes more difficult; when observed for the first time on the second, third, or fourth days severe cases should be operated upon at once, unless they are improving so rapidly that there is a strong expectation of complete recovery and interval operation. Intervention is still more strongly indicated if the symptoms are increasing in severity. Operation is indicated, too, if the symptoms after marked improvement recur as if, though moderate, they are not improving.

In the consideration of symptoms after the early hours, the character and extent of pain, tenderness and rigidity are important as determining the width and depth of the area of infection. The constitutional signs are less reliable than the local; they may be deceptive guides.

The chief objection to operating in every case is the danger of converting a localized into a general infection. Every case which at the time of operation has an uninfected general peritoneal cavity, and which dies with general infection after operation (and they are more numerous than we know), excites the doubt as to the wisdom of operating in every case. We know that very many cases of localized peritonitis recover and are successfully operated upon in the interval; cases showing improvement in an enormous proportion go on to recovery and intermediate operation.

If the patient is improving with a successfully localized peritonitis of considerable extent, especially if centrally localized, as in the pelvis, let operation be postponed until intervention can be safely practised, because these cases comprise, in the absence of general peritonitis, the most dangerous ones. Moreover, intervention becomes safer with a few hours' or days' delay in improving cases: *First*, because the general exudate, so easily infected during operation, becomes absorbed; *second*, because the local exudate diminishes in size; *third*, because walling off with gauze is practicable when the adhesions are firm, impossible when they are thin; *fourth*, operation ruptures at once the localized peritonitis, and starts the too often fatal peritonitis. Moreover, the patient's general strength improves with the local improvement. If the patient is not actually improving, this serious danger must be deliberately encountered, because the localized peritonitis will probably do so by itself, that is, rupture, which is chiefly to be feared at operation. When there is a tumor situated to the right side, or directly under the abdominal wall, so that walling off with gauze is practicable, operation may be performed under conditions that would contraindicate intervention when the tumor is centrally located or in the pelvis. Cases on the verge of the grave should obviously be let alone, on the ground that the simplest active intervention will turn the scales against the patient. In areas with firm walls simple drainage by a small incision is preferable to removal of the appendix because of the risk of causing general infection by separating adhesions. Of 105 cases of simple drainage, all recovered but two. Many were operated upon subsequently for hernias and for removal of appendix.

An attempt should always be made to remove the appendix whenever the peritoneal cavity is opened unless the patient's condition forbids prolonged search. In many cases of abscess with firm walls a slough will be found which on examination will prove to be a necrosed or exfoliated appendix. In such cases no subsequent operation for removal of the appendix will be necessary.

If, after recovery from simple drainage in acute appendicitis, there is evidence of renewed appendicular trouble, the appendix should be removed, the scar of the original wound incised and the wound carefully closed. This operation is especially desirable if there is hernia in the scar, or even stretching or discomfort. Hernia of itself after all operations for acute appendicitis should be operated upon if it causes disability or discomfort. In very rare instances there may be a recurrence of infection in the region of the ileo-cecal valve, even after removal of the appendix. In the writer's experience two such cases have been noted, one recovering from operation, the other requiring drainage.

The discussion on Dr. Richardson's paper was opened by **Dr. John B. Deaver**, of Philadelphia, who said that the paper had brought out many points on appendicitis about which an active warfare has been waged for some years. Upon the surgeon's individual decision at the bedside often depends the life of the patient, and in every case the very points about which the paper dealt have to be faced and a decision made. As to the question, should every case be operated upon as soon as the diagnosis is made, his answer is, yes, with two exceptions: *First*, acute active general peritonitis; *second*, collapse. Should the appendix be removed in every case of appendicitis? Yes, with the exception of those cases where the bowel forming a part of the abscess wall has undergone necrotic changes rendering the bowel friable and apt to rupture during the necessary manipulation.

Dr. Richardson has most wisely divided his first heading into two classes, those in which the diagnosis has been made in the early hours — and the speaker takes it for granted that he means within twenty-four hours — and those in which a diagnosis is made after this period of time has elapsed. In answer to the first question, Dr. Deaver asserts most emphatically that the early hours are the time *par excellence* for operation in this most serious of intra-abdominal affections: *First*, because practically all cases operated upon at this time get well or at least give the lowest mortality, this mortality increasing with the interval between the onset of the attack and the time of operation. Thus, of 18 cases operated upon within the first twenty-four hours, only one died, a mortality of 5.5 per cent. Of 30 acute cases, on the other hand, operated upon within forty-eight hours, 10 died, a mortality of 33.3 per cent. As far as his experience goes, a careful examination of the statistics of acute cases convinces him that the local pathological changes reach by progressive stages their severest limit within the first forty-eight hours, and after that period the changes are more in the nature of sequelæ following the primary stage of infection. *Second*, the percentage of cases that have one attack and then remain perfectly well and free from other attacks is very small. Of 460 of his own cases, 312 of them had more than one attack. In fact, it seems to him unjustifiable to offer a patient the faint hope of any attack of appendical inflammation being the last.

Should we operate when the diagnosis is made after the early hours, if the symptoms are severe? He would say that his experience has led him to the belief that symptoms are very unreliable and are not in proportion to, nor do they indicate, the severity of the pathological processes which are taking place in the belly. Many times he has opened the belly of a patient with a normal temperature, flat belly walls, and a quiet, retentive stomach, in whom tenderness or deep pressure was the only sign of persistent trouble, and has found pus or a gangrenous and perforated appendix. The surgeon who waits, in the case of appendicitis, for the appearance of severe symptoms, or, worse yet, waits until the symptoms increase in severity, for an indication to operate, will have many unnecessary deaths to his credit.

Should the appendix be removed in localized abscess with firm walls? The success in the removal of the appendix in a localized abscess with firm walls depends upon the skill and the technique of the surgeon. Under these conditions the appendix should be removed, the only occasion for a difference of opinion being as to the time of its removal, that is, at the primary operation or at a subsequent operation. If the appendix can be removed at the primary operation without additional risk to the patient, it seems to him that this is the time of election. That it can be done without additional or any risk has been repeatedly demonstrated, and in his own practice he does it in nearly all cases, because in 257 primary removals his death-rate in the past has been 16.7 per cent., and in 13 secondary removals the death-rate was 30.7 per cent.

The reasons for the removal under these conditions are that surgeons do not subject their patients to the danger of an attack of acute appendicitis occurring before the secondary operation. There is less likelihood of fistulæ, either fecal or simple. The patient is cured with one operation instead of two, with the consequent saving of a veritable period of invalidism for the patient.

When a patient's strength does not permit a prolonged search, a prolonged search for the appendix should not be necessary. The appendix can hold but one of a few positions. It must be either post-cecal, pointing into the pelvis, toward the spleen, or confined in the ileo-colic or sub-cecal or ileo-cecal fossa. If the appendix is embedded in exudate, the exudate itself will indicate its position. He agrees with the essayist as to the necessity of the ultimate removal of the appendix, differing from him only in the length of time before the complete operation is performed.

DR. CHRISTIAN FENGER, of Chicago, endorsed in the main nearly everything Dr. Richardson had said. He, however, disagreed almost entirely with the views expressed by Dr. Deaver.

DR. FRANCIS B. HARRINGTON, of Boston, thinks there is very little difference of opinion between Dr. Richardson and Dr. Deaver. He said Dr. Deaver does not operate on every case; he considers the condition of the patient. If the patient is in collapse, he waits, and so did all surgeons. It is better to wait, not only in cases of collapse, but in other instances. He likes to remove the appendix in every case where it is possible to do so. On the other hand, there are certain conditions in which he is inclined to wait perhaps twelve or twenty-four hours, or even longer, before operating.

DR. S. H. WEEKS, of Portland, Maine, considers the teaching of Dr. Richardson safe, relative to the treatment of this disease. It must be remembered that most of the members are teachers of surgery, and it is unsafe to instruct students to operate and remove the appendix in every case.

DR. JOSEPH RANSOHOFF, of Cincinnati, thought the doctrine advocated by Dr. Deaver would do a great deal of harm if followed by most men who operate upon cases of appendicitis. An important point to remember was this, that five-sixths of the operations for appendicitis are performed by general practitioners, men who have had very little experience in handling the intestines, in dealing with abscesses within the cavity of the abdomen, etc.

DR. NICHOLAS SENN, of Chicago, said uniformity of practice in the treatment of appendicitis would never probably prevail. Each man formulates his own indications and follows his own rule of practice. Personally he feels weakest in making an early diagnosis in the first attack. Dr. Senn narrated two instructive cases in which it was extremely difficult to make a differential diagnosis between perforative appendicitis and perforative typhoid ulcer, one of the cases being his honored colleague, the late Dr. John B. Hamilton.

DR. P. S. CONNER, of Cincinnati, believes it is not wise to be governed in surgical judgment by the citation of one or two cases. It is not wise, on the other hand, to neglect the warning of a few cases. He does not operate on all cases, but he does believe in subjecting to operation suitable cases, and at the proper time, if it can be had.

DR. DUDLEY P. ALLEN, of Cleveland, removed the appendix in an increasing number of cases, but of those cases of abscess with sloughing of the wall, in which he has not removed the appendix, there were but three that did not heal of themselves. He had seen fecal fistulæ follow a considerable number of cases, some of which had persisted, but others which had healed of themselves.

DR. RICHARD H. HARTE, of Philadelphia, favors the removal of the appendix in cases of early operation. He thinks conservatism in the treatment of this disease is a great mistake, and maintains that in nine cases out of ten the appendix can be successfully removed.

The discussion was further participated in by DRS. H. H. MUDD, JOSEPH W. HEARN, B. F. CURTIS, N. B. CARSON, all of whom substantiated in the main the views taken by the essayist.

DR. THEODOR KOCHER, of Berne, Switzerland, contributed a paper entitled

ON SOME CONDITIONS OF HEALING BY FIRST INTENTION, WITH SPECIAL REFERENCE TO DISINFECTION OF THE HANDS,[1]

which was read by the Secretary in the absence of its author.

The conclusions of the author as to the possibility of securing primary union of operation wounds with or without gloves are the following:

(1) Either, do use sterilized rubber gloves for every operation when you wish to be quite independent as to the form of your nails, the touching of everything you like, and the liberty to wash or not to wash your hands, and when you can spend plenty of money. Put your covered hand from time to time in a strong

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[1] See No. 23, page 541 of the Journal.

antiseptic solution (best, two-per-cent. sublimate) during a long operation, if you wish to be very careful.

(2) Or, never wear gloves for operations; do what you like between your operations, but poison yourself every time you operate by brushing and bathing your hands for ten minutes in a strong, hot sublimate solution after thorough washing and cleansing with hot water, soap and alcohol for fifteen minutes. Repeat a short antiseptic ablution frequently during a long operation, when you wish to be very careful.

(3) Or, go the golden middle way; avoid touching with uncovered hands any infective or septic material between the operations, or wash it carefully away at once; cut your nails as short as possible; brush your hands thoroughly with hot water, soap and alcohol (85 to 95 per cent.), avoiding any poisonous disinfectant before you operate, and, if you wish to be very careful, put cotton, silk, or, best, rubber gloves on when you touch the threads for ligatures and sutures, and when you have much to tear the tissues and to rub your fingers in the depth of a wound.

(4) But don't forget that the healing of the wounds *per primam intentionem* does not depend exclusively upon your hands, but also upon the same preparation of the patient's skin, upon sterilization of everything else coming in contact with the wound and its surroundings, upon complete arrest of bleeding, exact closing of the wound by sutures, or avoiding accumulation of fluids in cavities necessarily left by drainage, and, last but not least, upon the use of antiseptic threads for ligatures and sutures, as long as impermeable threads are not yet invented."

NEPHRECTOMY VERSUS NEPHROTOMY.

Dr. **Joseph Ransohoff**, of Cincinnati, read a paper on this subject. He said that renal surgery is essentially the product of the past twenty years. The occasional operations on the kidney performed before that time paved the way for a clearer appreciation of the conditions demanding operative relief. Betterments in the mode of examination, and the consequently greater accuracy in diagnosis, the recognition of the early gross changes wrought by disease, as seen by operation rather than by autopsy, and the comparative safety of incisions through healthy kidney tissue have brought to the fore the element of safe conservatism in the domain of renal surgery. Several interesting and instructive cases of pyonephrosis were reported. Nephrotomy, *per se*, is doubtless an operation nearly devoid of danger. When performed on a healthy kidney, as for stone, the mortality is less than 5 per cent. When performed for suppurative diseases, the mortality arises. He has tabulated records of 78 nephrotomies for pyonephrosis, exclusive of tuberculosis, published within the last three years from various clinics. Of these 78 nephrotomies, 17 were followed by death, a mortality of 21.8 per cent. In the hands of some surgeons the mortality has been very large. Four out of 5 cases were fatal in the Vienna clinic. Out of 6 cases of nephrotomies at the Roosevelt Hospital 3 died. On the other hand, Israel lost only 1 out of 8, and Thornton, 1 out of 12. From the same sources he has tabulated 37 primary nephrectomies with 9 deaths, giving a mortality of 24.3 per cent., and 17 secondary nephrectomies, with 7 recoveries and 10 deaths, a mortality of 58.8 per cent.

The advantages of nephrotomy for pyonephrosis are obvious: (1) it is an operation readily tolerated even in patients greatly reduced by fever; (2) it permits the surgeon to determine the condition of the opposite kidney; (3) by it the saving of even a small amount of functionating kidney tissue may throw the balance in favor of recovery. In dealing surgically with a pyonephrotic kidney, statistics can guide the operator only in a general way in the choice between nephrectomy and nephrotomy. Nephrotomy is indicated in pyonephrosis, (1) when the condition of the opposite kidney cannot be ascertained; (2) when the reduced condition of the patient will not permit the major operation if this is indicated. The nephrotomy is then but the preliminary step to be followed by nephrectomy as speedily as possible; (3) when the operation reveals the pressure of considerable kidney tissue, and approach to the normal on the part of the pelvis and proximal portion of the ureter. Here a later ureteroplasty may avert the need of nephrectomy; (4) when there is evidence of suspicion of disease in the other kidney.

Primary nephrectomy is indicated, (1) when there is a sound second kidney; (2) when inspection of the exposed kidney shows many or large pouches that cannot be successfully drained; (3) when there is little kidney tissue left; (4) when an examination of the pelvis and proximal portion of the ureter makes it reasonably certain that a return to the normal cannot take place; (5) in para- and peri-nephric suppurations where the kidney acts as a valve impeding successful drainage (Israel).

HERNIA FOLLOWING OPERATIONS FOR APPENDICITIS.

Dr. **Francis B. Harrington**, of Boston, read this paper. He made a personal examination of the condition of the abdominal wall in 236 cases of appendicitis which had been operated upon at the Massachusetts General Hospital by various surgeons. They represented all varieties of the disease. The period which had elapsed since operation varied from nine months to nine years. No case was included which was operated upon since July, 1897. Total number examined, 236; males, 190; females, 46; 27 true hernias in all, 11½ per cent.; 21 true hernias in males, 11 per cent.; 6 true hernias in females, 13½ per cent. Eighty-five wounds closed at the time of operation, 3 hernias, 3½ per cent.; 85 wounds partly closed at the time of operation, 11 hernias, 12½ per cent.; 63 wounds left entirely open at the time of operation, 13 hernias, 20 per cent. If with these cases of true hernia is included 10 cases of punctiform hernia, and 53 cases of more or less bulging in the scar which did not constitute true hernia, the following percentage of weak scars is noted: In 85 closed wounds, 6 per cent.; in 88 partly closed wounds, 51 per cent., and in 63 open wounds, 62 per cent.

Intermuscular Spaces. — An opening between muscles or tendons or both could be detected in the scars. In 85 closed at the time of operation, 26 per cent.; in 88 partly closed at the time of operation, 83 per cent.; and in 63 open wounds, 87 per cent.

General Abdominal Bulging. — In 85 closed incisions, 7 per cent.; in 88 partly closed incisions, 45 per cent., and in 63 open incisions, 46 per cent.

During the period in which these cases were operated upon, that is, from 1888 to 1897, some of the muscles or tendons were cut at right angles to their fibres in the acute cases, and often in the cases which were tightly closed at the time of operation. The writer advocates the use of an enlarged McBurney incision in all acute cases, which will obviate the cutting transversely of any muscle or aponeurosis.

Résumé. — Hernia and bulging occur frequently after operations for appendicitis, and result from the separation of muscles and other tissues in the scar. They are more common when drainage has been used. The muscular and tendinous tissues should not be transversely cut in any appendix operation unless it is unavoidable. As little drainage material as safety will permit should be used, and when necessary at all, the wound should be closed as far as possible with sutures and the drainage removed early. If the wound can be closed immediately the tissues should be restored to their normal position by suturing each layer. Stout belts and trusses are of little value in preventing hernia and may even do harm. The abdominal muscles from the earliest period possible after operation should be developed by appropriate muscular exercises. If hernia or marked bulging appears, operation for cure is safe and satisfactory.

Dr. Albert Vander Veer, of Albany, N. Y., followed with a paper on

SOME UNUSUAL CASES OF APPENDICITIS WITH COMPLICATIONS.

Operative surgery, in its relation to the appendix, will ever present rare and unusual cases. This was brought out strongly last year when the President of the Association and others gave the histories of some very unusual lesions of the abdomen. Surgeons may examine their cases with ever so much skill, employing diagnostic intelligence to the best advantage, yet when they enter the peritoneal cavity they must be prepared for surprises. From the knowledge acquired from these isolated and rather rare cases, it is more possible to increase the percentage of recoveries. A hernial sac with the appendix therein is not particularly rare, but to find it with a foreign substance, like a pin, immediately in the appendix, and not having caused trouble, is somewhat unusual. To operate for the relief of femoral hernia and find not only the appendix but a prolapsed bladder in the female is certainly decidedly rare. Dr. Vander Veer then detailed eight somewhat unusual and complicated cases.

Dr. Solon Marks, of Milwaukee, Wis., reported an interesting case of forward dislocation of the fifth cervical vertebra.

Dr. Dudley P. Allen, of Cleveland, Ohio, presented a paper entitled

CASES OF FRACTURE OF THE SKULL, FOLLOWED BY RECOVERY.

He reported 10 cases of fracture of the skull, all but 1 of them involving the base. The first 5 reported were fractures at the base of the skull without any injury to the vault. Of these, 3 were rendered totally unconscious at the time of the accident, 1 was in a semi-conscious condition, and the third, so far as could be ascertained, retained consciousness. Bleeding from both ears occurred in 2 of these cases, whereas in 3 of the cases there was bleeding at only one ear. Deafness in 1 case occurred in both ears at the time of injury. Whether in the other cases deafness occurred at the time of injury could not be definitely determined. In 2 of these cases, however, deafness was complete and permanent in one ear, and in 1 case the hearing was much impaired in one ear. Loss of smell was complete in 1 case and greatly impaired in 1 case. Paralysis of one side of the face occurred in 2 cases, in 1 of which it remained permanent. These 5 cases of fracture confined to the base of the skull are alive and well at the present time, except for the disabilities just described.

There were 2 cases of children who fell from heights upon the vault of the skull, causing most extensive fracture and great deformity of the cranium. In 1 of these cases there was a great deal of hemorrhage from the ears. In both the scalp was lifted, the cranium was laid bare, and by means of a hook the fragments making up the depressed vault were raised to their normal positions. Both cases have recovered. One, however, has impaired hearing in one ear.

Two cases reported received injuries in the frontal region extending into the base. In 1 of these there was extensive injury to the frontal bone and a large amount of bone and considerable larcerated brain tissue were removed. There was a fracture in this case extending across above the frontal eminence to the temporal fossa, upon the opposite side of the skull to that which received the greater injury, and there was a fissure from the base of the skull extending from the frontal bone backward to the sella turcica. This case has a large cerebral hernia. In the other case injury to frontal region and involvement of bone was small.

The point of interest in the latter case was the temperature, which rose gradually at two different periods to 105°, the case presenting many of the symptoms of typhoid fever with a relapse of the same. The other characteristic symptoms of typhoid fever were, however, entirely lacking, and the presence of optic neuritis, indicating probably a basal meningitis, placed the diagnosis of the cause of fever in considerable doubt. Both cases made a complete recovery.

The tenth case was one of severe injury in the region of the right parietal bone, followed in some weeks by impairment of mental activity, and also of motion of the right arm and leg. This was found to be due to a large subdural collection of blood upon the left side, notwithstanding there was no evidence of injury upon this side. The accumulated blood amounted to several ounces. It was removed and the patient is now well.

These cases which have recovered are reported because of the interest attached to the symptoms attending fracture, namely, hemorrhage from the ears, facial paralysis, loss of hearing and loss of smell.

Dr. W. Joseph Hearn, of Philadelphia, reported an interesting case of

REMOVAL OF AN ESOPHAGEAL DIVERTICULUM,

and in the discussion **Dr. M. H. Richardson**, of Boston, narrated two interesting cases.

Next place of meeting, Washington, D. C., in conjunction with the Congress of Physicians and Surgeons. Time, May 1, 2 and 3, 1900.

University Honors for Kipling. — It is the belief of the London Academy that Mr. Kipling will not be long lacking honors from the universities of both England and America. The McGill University, of Montreal, has started the ball rolling by conferring the degree of LL.D. upon the poet and story teller. To this news our London contemporary adds a quatrain which is not bad :

> Why have you been so long, McGill?
> Where were you when our friend was ill?
> It's surely wrong to wait until
> He's well to "doctor" him. — *New York Times.*

Recent Literature.

Human Anatomy. A Complete Systematic Treatise by Various Authors, including a Special Section on Surgical and Topographical Anatomy. Edited by Henry Morris, M.A., M.B. (Lond.), Senior Surgeon to the Middlesex Hospital; Examiner in Surgery in the University of London; Member of the Council, and Chairman of the Court of Examiners of the Royal College of Surgeons of England; Honorary Member of the Medical Society of the County of New York. Illustrated by 790 woodcuts, the greater part of which are original and made expressly for this work by special artists; over 200 printed in colors. Second edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1898.

The second edition of this well-known work shows evidences of careful revision both in regard to the text and illustrations. A description of the skin, by Mr. Anderson, and a section on vestigial and abnormal structures, by Dr. Robinson, are the chief additions which characterize the new edition.

The chapter on the Abdominal Viscera, by Mr. Frederick Treves, is worthy of commendation for the lucidity of its descriptions, and for the illustrations, especially those relating to the embryology of the intestinal canal, a knowledge of which is so important to the understanding of adult abdominal anatomy.

The illustrations in the chapters on the Vascular and Nervous System, as well as the Muscular System, are clear, well-chosen and sufficient, but are not up to the modern standard in artistic beauty. The illustrations in the chapter on the Bones are especially lacking in this respect, though the system adopted of indicating the origins and insertions of the muscles by colored lines adds to their value as aids to the student. The drawings of the ligaments and joints are particularly careful and accurate and not over-conventionalized. The importance of lavish and accurate illustrations in works on anatomy for the student can hardly be overestimated.

The chapter on Surgical and Topographical Anatomy, by Jacobson, is well and carefully written, well illustrated, and makes the work valuable as a book of reference for the surgeon.

The descriptive text throughout the book is in the main accurate and concise, and the volume takes a high rank among text-books of anatomy.

Diseases of Women. A Manual of Gynecology, designed especially for the use of Students and General Practitioners. By F. H. Davenport, A.B., M.D., Assistant Professor in Gynecology, Harvard Medical School; Assistant Surgeon to the Free Hospital for Women, Boston. Philadelphia and New York: Lea Brothers & Co. 1898.

In this third edition Dr. Davenport has somewhat enlarged the scope of his book by adding to it directions for the performance of the more familiar operations. They are written in the same clear and careful style which already distinguishes the subjects treated on in the early editions, and the book maintains its high place as perhaps the best of the handy guides for the general practitioner in his daily work in gynecology.

Holden's Human Osteology, comprising a Description of the Bones, with Delineations of the Attachments of the Muscles, the General and Microscopic Structure of Bone and its Development. Edited by Charles Stewart, F.R.S., Conservator of the Museum of the Royal College of Surgeons of England; Hunterian Professor of Comparative Anatomy and Physiology, Royal College of Surgeons, of England, and R. W. Reid, M.D., F.R.C.S., Regius Professor of Anatomy in the University of Aberdeen. Eighth edition. London: J. & A. Churchill; Philadelphia: P. Blakiston, Son & Co. 1899.

The eighth edition of this standard work presents comparatively few changes from former editions. The book will always have permanent value for its excellent literary form, which distinguishes it particularly from the majority of similar works, and makes it perhaps the most readable of them all. The subject is considered from the broadest standpoint, and the real interest and enthusiasm of the writer for his subject appeal to the dullest and least interested of students.

Modern Gynecology. A Treatise on Diseases of Women, comprising the Results of the latest Investigations and Treatment in this Branch of Medical Science. By Charles H. Bushong, M.D., Assistant Gynecologist to the Demilt Dispensary, New York; formerly Attending Physician to the Northern Dispensary. New York: E. B. Treat & Co. 1898.

This book makes no effort to enter the field already occupied by the systematic text-books on gynecology. It is a hand-book devoted to the elucidation of the practical details of such minor, and mainly office, gynecology as the general practitioner must constantly deal with. It is in places old-fashioned. It is surprising at this date to see an author recommending the use of anteversion and stem pessaries, and the replacement of the retroverted uterus with the sound, but the practitioner who has been well enough trained to pick out such faults will find much that is of value in it.

An American Text-Book of Gynecology, Medical and Surgical, for Practitioners and Students. By Henry T. Byford, M.D., J. M. Baldy, M.D., Edwin B. Craigin, M.D., J. A. Etheridge, M.D., William Goodell, M.D., Howard A. Kelly, M.D., E. E. Montgomery, M.D., William R. Pryor. M.D., George M. Tuttle, M.D. Edited by J. M. Baldy, M.D. Philadelphia: W. B. Saunders. 1898.

The first edition of this book has found so definite a place among the text-books on the subject as to make it only necessary in noticing the second to speak of the changes that have been made. The rapid advance in knowledge of the urinary diseases of women has been met by considerable additions and many alterations of these chapters. Much has been done in the direction of arranging subjects which were treated of repeatedly by different authors in the first edition under individual and separate headings in this, thus making the book considerably clearer, and many of the illustrations have been much improved.

A Bankrupt's Doctors. — An ex-broker of this city (New York) filed a petition in bankruptcy recently, with liabilities $29,357 and no assets except clothing worth $75. Among his debts were $1,460 owed to twenty-eight doctors and $350 to three dentists. — *Medical Record.*

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THE NEW INFIRMARY FOR HARVARD UNIVERSITY.

FOR many years the need of a properly-equipped hospital in connection with the University has been felt, for the treatment of students or officers who might be taken ill during the course of the academic year. Owing to the persistence of the committee which has had the matter in charge and the liberal bequest of Mr. James Stillman, of New York, plans have finally taken definite form, and ground for the new building is soon to be broken, with the expectation that the structure will be ready for use in the fall. The land upon which the building is to be placed is situated in the immediate vicinity of the Cambridge Hospital, and commands, therefore, a broad view over the Charles River from the rear. The cost of land and building has been defrayed by Mr. Stillman and also the assurance of maintenance for at least four years.

The structure, which will be known as Stillman Hall, will consist of three buildings closely joined together, and so situated that space will be left for others, should necessity require. The infirmary will harmonize in appearance with the older college buildings, and will be built of dark-red, hard-burned brick. There will be no ornamental features, with the exception of the entrance and the window above it.

The administration building will have on the first floor the offices, reception-room, matron's room and a large dining-room, the last-named to be used by students in general as well as by infirmary patients. The other two stories will be equally divided between large wards and single rooms. Throughout the administration building the floors and woodwork are to be of quartered oak.

The rear building will be divided into large wards and single rooms on the first and second stories. The top stories will be devoted to rooms for nurses and servants, with the necessary bathrooms and lavatories.

In the basement of the buildings will be placed boilers, engines and ventilating machinery, a laundry, engineer's room, nurses' dining-room, a laboratory, servants' dining-room and cold-storage rooms and closets.

It is expected that those students who can afford to pay for medical care and service will do so, employing, if they so desire, their own physicians. Others who cannot pay will be treated, free of charge, by the medical visitor of the college. The benefits of the infirmary will also be available for those not actually ill, but in need of rest or the undisturbed quiet which such an institution would provide.

Although experience has shown that the danger from contagious and infectious diseases is not great in a college community with the modern well-ordered sanitary appliances, yet it behooves the college authorities to take every possible precaution should such diseases arise. To this end it is desirable, and, in fact, rapidly becoming imperative, that colleges should have at their disposal accommodations of the most approved sort for the care of their students should they become ill. The transference of a student to a city hospital is often a matter of great discomfort to him and of positive distress to his family and friends.

In so large a community as the University has grown to be, it is inevitable that there should always be a certain amount of illness apart from acute infectious processes, which may demand isolation and special care. The infirmary, as we understand its scope, is to offer a place of retreat for these, as well as the more dangerously ill, until they may again be able to take up their life with others. The injuries, if we may breathe such a possibility, which occasionally occur in the course of athletic contests, and the more unfortunate effects of overwork, will alike find in such an infirmary a place for recuperation. In short, we have no doubt that after a few years the infirmary will be regarded as almost a necessary adjunct of every large educational institution, so wide will be its range of usefulness.

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THE LONG ISLAND HOSPITAL.

IN a late issue we noted the fact that the first class of nurses in a two-year course had recently been graduated from the Long Island Hospital, Boston Harbor. Such an event, in itself, is of too frequent occurrence to excite special comment, but in this particular instance it has a significance which it is desirable for us to recognize.

In the first place, we have come to realize that a hospital without nurses is not deserving of the name, and that any attempt to establish an institution on a basis of efficiency in the treatment of the sick presupposes adequate nursing. The establishment of a training school on Long Island, therefore, marks the beginning of a hospital. For many years an institution, little known to the profession at large, has existed on Long Island, the function of which has been to care for the dependent poor of the city. Until within a very few years no systematic attempt has been made to introduce modern methods into its hospital department. The word "chronic" has been quite enough to discourage efforts on the part of medical men toward radical reform in the care of the sick. Fortunately for the institution, and for the credit of the laity and physicians of the community, the last few years have seen a change, which has led, among other things, to the training of nurses and the introduction of hospital methods in general.

It should be clearly understood also that there is at such an institution for chronic disease a rare opportunity for study on the part of the physician and for an exacting discipline and training on the part of the nurse. Curiously enough, we have been slow to recognize these palpable facts, and quite behind other cities. New York and Philadelphia for many years have been using with credit to themselves and with advantage to students and physicians their great institutions of similar character, and we always have before our minds one of the greatest hospitals the world has known, the Salpêtrière of Paris, raised from an almshouse for women to its place of eminence by the genius of one man.

We, therefore, regard it as a most significant fact, and one which may well prove of growing importance to this community, that the Long Island Hospital, through its Training School for Nurses and its board of visiting physicians, has begun its career as a hospital, and not merely as a refuge for the hopelessly sick. Its development as a centre both for learning and teaching depends in great measure upon the interest which the profession at large will take in it, an interest which we feel sure will increase when its possibilities come to be more and more recognized, and when we, as a profession, fully realize that the study of chronic disease is essential to a well-rounded medical education.

YELLOW FEVER AT SANTIAGO.

An outbreak of yellow fever has recently occurred at Santiago, a number of the cases appearing among the troops of the 5th U. S. Infantry, stationed at that place. Several deaths have occurred, the diagnosis in each case being confirmed by autopsy. Among those affected with the disease is Acting Assistant Surgeon Fabricius, the pathologist of the hospital at Santiago. The 5th Infantry has largely been quartered in the Spanish barracks, which it was supposed had been thoroughly cleansed and disinfected. Every precaution is being taken to prevent the spread of the disease. The sick and suspects have been isolated in special hospitals, the troops have been removed from barracks and encamped in the hills back of the city, while the equipments and effects of the soldiers have been disinfected in the floating disinfecting plant of the Marine-Hospital Service in Santiago Harbor. The cause of the outbreak has not been as yet determined, but it is not anticipated that the present visitation of the disease will develop into an epidemic.

In the absence of general statistics for the island the number of cases of yellow fever occurring among the Spanish troops is of interest. For the year 1896 the number of cases of yellow fever, per 1,000 strength, for the Spanish forces scattered over the entire island, was as follows: January, 8.1; February, 7.3; March, 4.35; April, 4.2; May, 7.35; June, 11.85; July, 36.60; August, 30.50; September, 26.90; October, 27.75; November, 29.90; December, 18.75. Using these figures, together with the mortality statistics of the Spanish Army for the same period for this disease, and estimating the United States forces on the island, in round numbers, at 15,000 men, about 2,200 cases of yellow fever, with about 700 deaths, may be anticipated to occur among our troops during the remainder of the present year. It is not thought, however, that the sick-rate and mortality among our forces will approach the above figures of the Spaniards, through the great precautions which have been everywhere taken by the military authorities to prevent the occurrence or control the spread of this disease.

MEDICAL NOTES.

Plague at Alexandria. — Plague has appeared at Alexandria, in Egypt.

The Canadian Medical Association. — On August 30, 31, and September 1, 1899, the next annual meeting of the Canadian Medical Association will be held at Toronto under the presidency of Mr. Irving H. Cameron. It is ten years since this Association met in Toronto.

Something for the Antivaccinationists. — When an epidemic of small-pox broke out in the Province of Santiago, General Wood sent a fresh regiment of soldiers to cope with the necessities of the situation, having previously subjected every soldier to compulsory vaccination. Not a case occurred among these troops.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, June 28, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 64, scarlet fever 16, measles 71, typhoid fever 9, small-pox 2.

The Harvard Dental Alumni. — This Association had its annual dinner Monday evening, June 26th. Dr. Frederick Bradley, of Newport, R. I., presided.

Small-Pox in South Boston. — Another case of small-pox has been discovered in South Boston in the person of a neighbor of the family, who first brought the disease from New Hampshire. The man was removed to Gallop's Island.

The Harvard Medical Alumni Association. — This Association held its annual meeting and dined at the Hotel Vendôme, on Tuesday, June 27th. More than two hundred members were present at the dinner.

Dr. D. W. Cheever presided, and the speakers were President Eliot, Gen. Leonard Wood, Drs. H. L. Burrell and E. H. Bradford, and Dr. Freeman Allen, for the graduating class. Dr. Francis H. Brown read the report of the Committee on the Medical School.

A Large Bequest to the Harvard Medical School. — By the death of Miss Ellis and under the will of the late Dr. Calvin Ellis, the property of the latter, estimated at $400,000, goes to the Harvard Medical School. Dr. Ellis provided that his bequest should be used for the benefit of the departments of anatomy, physiology and pathology.

Free Vaccination. — The Boston Board of Health has begun free vaccination.

Annual Address in Medicine. — The Annual Address in Medicine before the Yale University Medical School was delivered by Prof. Charles S. Minot, of Harvard University, Tuesday, June 27th, on the subject, "Knowledge and Practice."

Death of two Centenarians. — Mrs. Mary Tuttle of Stratham, N. H., died on June 22d at the age of one hundred and one years. She was the oldest woman in Rockingham County, and was a native of Exeter. Mr. Michael McNerney of Orange, Conn., who if he had lived until November would have been one hundred and five years old, died on June 27th.

NEW YORK.

A Yellow-Fever Serum. — Dr. Doty, Health Officer of the Port, has made public the announcement that he has successfully isolated the bacillus of yellow fever, the discovery of which Professor Sanarelli, of Montevideo, claimed early in 1897 in the Annals of the Pasteur Institute of Paris, and has also produced, by inoculating horses with cultures of the microbe, a serum which he believes to be an efficient remedy for this disease. For the past two years, in conjunction with Dr. Charles B. Fitzpatrick, who was formerly a student in the laboratories of Pasteur and Koch, he has been working on the matter in his bacteriological laboratory on Swinburne Island; and the material for making his investigations was obtained from patients who had contracted yellow fever in Panama and died in the New York Quarantine Hospital. It took over eighteen months of diligent labor to perfect the serum, but recently, Dr. Doty claims, the latter has proved absolutely efficient in curing guinea-pigs inoculated with virus which produced fatal results in all cases in which the serum was not employed, and also in securing immunity in all guinea-pigs which were treated with the serum prior to being inoculated with yellow-fever virus. As yet the serum has not been tested on the human subject, but a supply of it has been sent to Havana for an early trial there, and it will be used on the first yellow-fever patient that is met with at the New York Quarantine.

Christian Science and the Law. — "Christian Science and the Law" was the subject of the discussion at the last meeting of the Medico-Legal Society, held June 21st, and among those taking part in it was Howard Ellis, who made a strong argument in favor of placing Christian Science healers under the laws which apply to practitioners of medicine in general. In a paper contributed by Carol Norton, who recently gave an exposition of the tenets of Christian Science at the Metropolitan Opera House, it was claimed, curiously enough, that its healers were not medical practitioners because they did not make use of any drugs. The principal paper of the evening was read by ex-Coroner Moritz Ellinger, who made a vigorous arraignment of the present fad. No alleged cure, he said, which depended on the superstition of the people whom it pretended to aid should be tolerated, and the severest penalties should be enforced against those who practised it. That practice was iniquitous, and the law should be invoked to supress it, as it does other species of charlatanry. There was one feature of it, however, which the members of the regular medical profession might adopt with advantage to themselves, and that was the invariable collection of fees in advance. According to Mrs. Eddy, payment in advance was necessary as an earnest of the faith of the patient.

Graduation of Nurses at the Manhattan State Hospital. — The second annual commencement of the Training School for Nurses of the Manhattan State Hospital for the Insane was held at Ward's Island on June 14th. The graduating class contained 110 members, 60 of whom were women, and the music for the exercises was furnished by two orchestras, one composed of male and the other of female attendants of the hospital.

Dr. Ewing Appointed to the Cornell Faculty. — At the annual meeting of the Trustees of Cornell University, held at Ithaca on June 22d. Dr. James Ewing of New York, was appointed professor of pathology in the Medical Department, and a resolution was adopted in approval of the proposed establishment of a school of public hygiene and sanitation in connection with the Cornell Medical College in New York.

Public Aid and Medical Charities. — The Medical League, through its Committee on Charities and Legislation, has recommended to Controller Coler, that steps be taken to cut off from any share of the public funds the following classes of institutions: (1) All hospitals or institutions connected with a medical school; (2) all institutions which show a surplus over and above what they receive from the city; (3) all dispensaries; (4) all institutions which have used any portion of the city's appropriation for building or any other purpose than the maintenance of the sick. The committee also makes the following recommendations: The authorities of every institution asking for an appropriation, to make oath that in the preceding year it has not used any part of the appropriation from the city for repairs, improvements or additions to buildings. Any institution requesting public aid should show under oath that seventy-five per cent. of its income is derived from other sources than the public treasury.

ARMY NOTES.

OPERATIONS ABOUT MANILA. — In a report concerning operations about Manila, First Lieutenant F. M. Kemp, assistant surgeon United States Army, says: "I cannot speak too highly of the work of my men during the entire engagement. They performed their tasks cheerfully and well, under a most galling fire in and about the trenches, and carried the wounded over a mile to the rear through an open space swept constantly by the enemy's bullets. At no time during the engagement was the Red Cross respected and the enemy's sharpshooters seemed to take particular pains to hit the wounded and those that were attending them. The beneficial results of instruction in "first aid" to the enlisted men were demonstrated by the fact that, to my knowledge, not a single man died of primary hemorrhage, all wounded being intelligently treated before they could lose much blood."

HOSPITAL SHIP "RELIEF." — The hospital ship *Relief* sailed from Manila for San Francisco on June 22d, with 250 sick and wounded on board. On arrival her patients will be transferred to the large army hospital, capacity 1,000 beds, which has been constructed near San Francisco to meet the needs of the Philippine service.

ARMY HOSPITAL, SAVANNAH. — The army winter hospital at Savannah, Ga., is about to close for the next six months, as no patients are being received from the forces in Cuba and Porto Rico on account of quarantine regulations.

Miscellany.

GEN. LEONARD WOOD, M.D.

AN exception is made to the JOURNAL's usual rule against verses, in favor of those which follow. They were written by Dr. J. Bapst Blake and read at the annual meeting, in February last, of the Boston City Hospital Medical Club, shortly after the rejection by the academic alumni of the proposition to extend to graduates of the professional and other schools the franchise for the Board of Overseers of the University. The Club was unfortunately deprived of General Wood's presence on that occasion by his sudden return to Santiago. His presence this week at the annual dinner of the Harvard Medical Alumni Association, and at Cambridge on Commencement Day, when the University made him an LL.D., thus granting the privilege of a ballot for her overseers, suggests publication of Dr. Blake's lines.

Having declined the lucrative presidency of a profitable industrial undertaking, Gen. Leonard Wood now goes back to Santiago to resume his old duties, and in addition to cope with yellow fever. Bravo, General and Mrs. Wood! Such an example, we hope, will not be lost upon our young men and young women. It is "better than money."

Mr. President and gentlemen (although 'twas my intent,
To address you not as Mister, but as *Doctor*, President),
I resemble a repeater, though I trust you'll kindly note,
A repeater votes too often, while my hero cannot vote.
I'd call to your attention a maxim of geology,
More important far than politics, polemics, or theology,
And if its application isn't quickly evident,
Please don't throw things at the reader, — his intentions are well meant.

This world is very ancient, as each one of us can tell,
It has passed through many ages and has stood them very well.
The first one was the Stone Age, and a rocky one at that;
The next one was the Iron, when Blaud's pills grew wild and fat;
Then came the Age of Copper, which sends stock markets flying,
And then the Age of Silver, — *that died* with Billy Bryan;
And then there came the Golden Age, which did us little good,
And finally the present Age, and that's the Age of WOOD!!

To the village of Pocasset, in the year of '62,
Came a baby, squirming, sneezing, as babies often do;
And the neighbors crowded round him, and they all agreed that he
Was about the finest baby it was possible to see.
They said he'd grow to be a man illustrious and great,
A bulwark of the Nation, a Pillar of the State;
In war-time and in peace-time, he should shine among his peers, —
And might *even cast a ballot* for the HARVARD OVERSEERS!!!

And the Lord looked on the baby, and He saw that he was good,
And He bade him grow and flourish, and He called him Leonard Wood,
And He gave him many talents, which have doubled with the years,
But He didn't give him ballots for the Harvard Overseers.

Now the neighbors made an error, tho' they meant it for the best,
They judged the baby rightly, but they didn't know the rest,
And the baby's later story, with your leave I shall relate,
And tell how Fate caressed him, — ah, were Man as kind as Fate!
He grew to be a boy, and then he grew to be a youth;
He found that Medicine alone meant Truth and only Truth;
And at the Harvard Medical he started his career,
Quite forgetting he had sacrificed a vote for Overseer.
For he might have been a bachelor, and sported an A. B.,
Instead of which he's married with a family of three,
He might have gone to Cambridge and loitered through the College,
But, instead, he joined the Army and collected *Useful* Knowledge.

His first attempt at fighting was with a man named Miles,
And he gave him points at boxing, mid a galaxy of smiles;
Then he trained a band of soldiers so that sprinters they should be,
And he rounded up the Redskin and the modest Apaché.
He taught the first-class Private how to eat as well as drink;
He told him how to exercise, he showed him how to think,
He made him turn his toes in, and use his eyes and ears,
But — he didn't cast a ballot for the Harvard Overseers.

And when the ugly war-clouds came sweeping o'er the land,
McKinley called "Rough Riders!" and he put Wood in command.
Republicans and Democrats agree with little strife,

That McKinley's never showed us better judgment in his life.
And Leonard taught them fighting with all the strength he could,
And Teddy's tearing terrors for once took to the Wood,
Who brought them into Cuba, *without horses*, but with skill,
Till he led them into battle up the slopes of Kettle Hill!!
And really when you think of it, it seems a trifle queer,
He's not worthy of a ballot for the Harvard Overseer.

Oh, Leonard Wood, you're handsome! Oh, Leonard Wood, you're brave!
When the Dago takes a tantrum you teach him to behave.
You show him new maneuvers with water and with soap,
And he's *mastered* the foundations, and *now* there's room for Hope.
You let him hold his meetings, talk and wrangle till he's through,
Knowing well that all he ought to do he finally will do.
So you can *elevate his feelings*, you can subjugate his fears,
But you *cannot* cast a *ballot* for the *Harvard Overseers!!*

Oh, Graduates of Harvard, on whose finger tips is twirled,
That mass of men and maggots that goes to make this world!
You gave unto the Negro the sacred right to vote;
You held Man's Equal Brotherhood to be your trumpet note,
Your policy has ever been the freest of the free,
But of course some *certain limits* to Freedom there must be,
And Brotherhood and Suffrage must weaken, it appears,
When it comes to casting ballots for the Harvard Overseers.

Ye doctors of Fair Harvard, Physicians wise and good,
Your ranks are full of Heroes, Burrell, Brackett, Prescott, Wood,
Your college may be proud of you, but still 'twould hardly do,
To give *votes* as well as *vetoes* to *barbarians* like you!
But your reward is coming, and the Prophet can descry,
Waiting for you in the distance — in the *coming By-and-By*,
When Life's sad dream is over, and the Heavenly Shore appears,
Not a crown — but just a BALLOT for the Harvard Overseers.

Leonard Wood, of old Pocasset, here's a triple health to you,
Administrator, *doctor*, and a *son of Harvard*, too;
May the biggest bit of sorrow that shall shade your later days
Be the Acts of the Alumni and their funny little ways!
May you civilize the Cubans, then save the Philippines,
And come back again to greet us, in this town of Brains and Beans,
For the sentiments we offer you, with laughter and with cheers,
Are worth FIFTY *times* the ballot for the HARVARD OVERSEERS!!

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Correspondence.

THE PATHOLOGY OF PHLEGMASIA DOLENS (SECOND LETTER).

ROXBURY, June 23, 1899.

MR. EDITOR: — Notwithstanding the strictures of Dr. Frank Woodbury (JOURNAL, June 22, 1898) in my letter of March last (JOURNAL, March 30, 1899), I believe I am strictly in accord with the best modern pathologists in considering phlegmasia dolens as an infective thrombosis of the pelvic veins. This infection may take place by the direct absorption of septic matters into the veins, or indirectly by septic absorption into the lymph spaces of the connective tissue, thus causing a septic pelvic cellulitis and, secondarily, a septic phlebitis and thrombosis. Innumerable observations, dissections and bacteriological examinations of puerperal and surgical cases prove this to be the ordinary source of the disease.

I see no reason to doubt that the same thing takes place in typhoid fever. The intestines, in this disease, are loaded with septic material, and the open mouths of the intestinal ulcers form the ready portals of infection. The fact that the intestinal veins pass upward through the mesentery, and do not connect directly with the iliac veins, makes it seem probable that absorption in typhoid more commonly takes place through the connective tissue, and so spreads to the contiguous veins. I regret that I have no autopsies to cite in confirmation of this view, yet I did find clinical confirmation of it in the one and only case of typhoidal phlegmasia dolens which I ever had the fortune to see. In this case (alluded to in my former letter) the right iliac fossa was completely filled by a firm, resistant mass easily recognizable as a cellulitis by the touch. The temperature, 105.8° F., was pathognomonic of infection. The patient quickly succumbed.

In the cases reported by Dr. Da Costa chills and high temperature were the invariable accompaniments of typhoidal phlegmasia dolens. How he or his spokesman, Dr Woodbury, can reconcile this fact with their theory of a purely passive, non-septic thrombosis, I will leave to them to explain.

So far as I am aware, no vigorous demonstration of the existence of such a form of thrombosis has ever been made public. I cannot for a moment admit that observations like those of Virchow, Liebermeister and their compeers, made in old ante-bacillary days, can possibly be considered as a scientific demonstration. We need the most thorough bacteriological investigations before we can logically commit ourselves to this theory.

Septic thrombosis and septic phlegmasia dolens are diseases of everyday occurrence. Their pathology has been demonstrated necroscopically and bacteriologically in the most conclusive manner. If the same diseases ever do proceed from non-septic causes, it is the duty of the dualists (as we may properly term them) to prove it, not by the citation of musty authorities, but by the most approved modern methods of research. They must show us a case or cases of phlegmasia dolens without bacteria. Until they can do this they have no rightful standing in court.

Respectfully yours,
EDWARD J. WILLIAMS, M.D.

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ACCLIMATIZATION OF THE WHITE MAN IN THE TROPICS.

CAMBRIDGE, MASS., June 17, 1899.

MR. EDITOR: — Some few weeks ago I wrote the editor of the *Lancet*, asking for an expression of opinion as to the acclimatization of the white man in the tropics, based on the experience of Great Britain and, as I believed, set forth in her army and navy medical reports. I felt sure that an expression of opinion of this sort would be of great interest to Americans at the present time. The editor of the *Lancet* has complied with my request by publishing, in two numbers of his journal, an editorial on the subject of "Climate and Acclimatization." This editorial, published in two instalments, appeared in the *Lancet* for May 27th, pages 1440-1441, and for June 3d, pages 1501 and 1502. I take the liberty of calling your attention to it, as I believe that it would interest, and possibly instruct, the medical men who would see the article. The selection and care of troops who are to serve in a tropical climate is especially dwelt upon.

Faithfully yours,
ROBERT DEC. WARD,
Instructor in Climatology, Harvard University.

METEOROLOGICAL RECORD

For the week ending June 17th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...11	30.19	65	74	56	31	53	42	N.W.	S.	4	12	C.	C.	
M..12	30.18	68	78	57	65	74	69	S.W.	S.W.	12	15	C.	F.	
T...13	30.05	75	86	64	73	74	73	W.	S.W.	5	14	C.	C.	
W..14	29.93	80	92	67	82	71	76	S.W.	W.	13	3	O.	O.	.03
T...15	29.89	66	73	58	97	100	98	E.	N.W.	6	2	O.	R.	.21
F...16	29.89	66	74	58	66	49	57	W.	N.W.	12	12	F.	C.	.25
S...17	30.13	62	68	56	69	69	69	N.	S.W.	9	10	O.	C.	
☞	30.04		78	59			69							.49

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 17, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup	Cerebro spinal men.
New York . .	3,438,899	1070	422	15.66	11.07	6.39	3.69	1.26
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	159	48	6.93	13.23	1.89	1.26	.63
Baltimore . .	506,389	146	45	13.80	4.14	8.97	1.38	2.07
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	85	—	11.70	5.85	2.34	1.17	2.34
Pittsburg . .	295,000	86	40	33.33	6.96	4.64	—	—
Washington .	277,000	88	28	14.82	11.40	4.56	1.14	5.70
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	49	21	12.24	8.16	8.16	—	—
Nashville . .	87,754	24	18	12.48	12.48	12.48	—	—
Charleston . .	65,165	52	23	28.80	1.92	21.12	—	—
Worcester . .	108,240	30	7	6 66	13.33	—	—	6.66
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	19	4	21.04	10.52	10.52	—	—
Lowell . . .	88,641	36	16	10.62	5.31	5.44	2.77	—
Lynn	66,703	19	2	—	5.26	—	—	—
New Bedford .	66,340	22	9	16.60	24.90	12.45	—	—
Somerville . .	61,101	10	1	—	20.00	—	—	—
Lawrence . .	57,263	25	13	20.00	—	12.00	4.00	—
Springfield . .	56,501	19	4	5.26	—	5.26	—	—
Holyoke . . .	43,424	10	4	—	10.00	—	—	—
Brockton . .	37,278	7	—	—	—	—	—	—
Salem. . . .	36,883	10	7	10.00	—	10.00	—	—
Malden . . .	34,613	2	1	—	—	—	—	—
Chelsea . . .	33,468	17	2	11.76	—	5.88	5.88	—
Haverhill . .	32,022	4	—	—	—	—	—	—
Gloucester . .	30,589	3	1	—	—	—	—	—
Newton . . .	29,716	7	—	14.28	14.28	—	—	14.28
Fitchburg . .	29,438	2	—	—	—	—	—	—
Taunton . . .	28,167	13	2	—	7.69	—	—	—
Everett . . .	25,338	4	1	—	—	—	—	—
Quincy . . .	23,549	—	—	—	—	—	—	—
Pittsfield . .	22,643	3	—	—	—	—	—	—
Waltham . .	21,812	8	2	12.50	—	—	—	—
North Adams .	20,971	5	2	—	—	—	—	—
Chicopee . .	17,842	5	4	40.00	—	40.00	—	—
Medford . . .	16,511	2	—	—	—	—	—	—
Newburyport .	14,915	6	3	—	16.66	—	—	—
Melrose . . .	14,032	4	—	—	25.00	—	—	—

Deaths reported 2,062; under five years of age 731; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 451, diarrheal diseases 284, consumption 224, acute lung diseases 198, diphtheria and croup 50, cerebro-spinal meningitis 30, measles 23, typhoid fever 22, scarlet fever 18, whooping-cough 15, erysipelas 3, small-pox 2.

From measles New York 16, Lowell 3, Charleston 2, Cleveland, Pittsburg, Washington and Cambridge 1 each. From typhoid fever New York 6, Cleveland and Pittsburg 4 each, Boston, Baltimore and Charleston 2 each, Washington, Lawrence, Chelsea and Melrose 1 each. From scarlet fever New York 13, Pittsburg 2, Cambridge, New Bedford and Waltham 1 each. From whooping-cough New York 9, Boston and Providence 2 each, Pittsburg and Washington 1 each. From erysipelas New York 2, Boston 1. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending June 10th, the death-rate was 16.4. Deaths reported 3,591; acute diseases of the respiratory organs (London) 216, measles 162, whooping-cough 79, diphtheria 62, diarrhea 42, fever 27, scarlet fever 23, small-pox (London and Hull 1 each) 2.

The death-rates ranged from 10.8 in West Ham to 22 9 in Manchester; Birmingham 15.3, Bradford 17.4, Cardiff 13.7, Gateshead 13.2, Hull 17.1, Leeds 14.8, Liverpool 20.9, London 15.7, Newcastle-on-Tyne 15.1, Nottingham 18.1, Plymouth 17.6, Salford 21.0, Sheffield 16.7, Sunderland 20.8.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 24, 1899.

L. W. Atlee, surgeon, detached from the "Boston" and ordered to the "Bennington."

B. R. Ward, passed assistant surgeon, detached from the "Bennington" and ordered to the "Boston."

F. M. Furlong, assistant surgeon, detached from the "Independence," June 30th, and ordered to the "Solace" temporarily, for passage to the Asiatic Station.

G. G Herndon, surgeon, on completion of temporary duty at recruiting rendezvous at Chicago, Ill., Cleveland, O., etc., ordered home to wait orders.

R. A. Marmion, medical inspector, detached from the Washington Navy Yard, July 1st, and ordered home to wait orders.

S. H. Dickson, surgeon, ordered to the Washington Navy Yard, July 1st.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JUNE 22, 1899.

Irwin, Fairfax, surgeon. Granted leave of absence for three months from July 8, 1899, with permission to go beyond the sea. June 16, 1899.

Carter, H. R., surgeon. Detailed as quarantine officer of the port of Havana, Cuba, under the provisions of executive order of January 17, 1899. June 22, 1899.

Banks, C. E., surgeon. To proceed to New York, N. Y., for special temporary duty. June 22, 1899.

Wertenbaker, C. P., passed assistant surgeon. To proceed to Danville, Va., for special temporary duty. June 17, 1899.

Smith, A. C., passed assistant surgeon. Granted leave of absence for thirty days from July 15th, or when relieved. June 20, 1899.

Stewart, W. J. S., passed assistant surgeon. Granted leave of absence for fifty-two days from June 19, 1899. June 16, 1899.

Cofer, L. E., assistant surgeon. To proceed to El Paso, Tex., as inspector. June 16, 1899. To proceed to Mexico, Mex., for temporary duty. June 16, 1899.

Sibree, H. C., acting assistant surgeon. Granted leave of absence for ten days from June 21, 1899. June 21, 1899.

Wakefield, H. C., acting assistant surgeon. Granted leave of absence for thirty days from June 15, 1899, on account of sickness. June 16, 1899.

Gahn, Henry, hospital steward and chemist. To proceed to New York, N. Y., on special temporary duty. June 16, 1899.

Mason, W. C., acting assistant surgeon. Granted leave of absence for six days from June 26, 1899. June 18, 1899.

PROMOTION.

Slough, Charles, junior hospital steward. To be senior hospital steward. June 16, 1899.

RESIGNATION.

Stewart, W. J. S., passed assistant surgeon. Resignation as passed assistant surgeon accepted as tendered, by direction of the President, to take effect August 9, 1899.

RECENT DEATH.

Walter Melvin Wright, M.D., M.M.S.S., of Orange, died June 24, 1899, aged fifty-three years.

BOOKS AND PAMPHLETS RECEIVED.

Marriages of the Deaf in America: An Inquiry concerning the Results of Marriages of the Deaf in America. By Edward Allen Fay, M.D. Washington, D. C.: Volta Bureau. 1898.

Transactions of the Twentieth Annual Meeting of the American Laryngological Association, held in the City of Brooklyn, N. Y., May 16, 17 and 18, 1898. New York: D. Appleton & Co. 1899.

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Address.

THE CAVENDISH LECTURE ON THE ETIOLOGY AND DIAGNOSIS OF CEREBRO-SPINAL FEVER.[1]

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In practice we occasionally meet with a meningitis which is not tuberculous, which is not a complication of pneumonia or ulcerative endocarditis, and which is not a sequence of ear disease or of injury, and which is not a terminal infection in some chronic malady. As the meninges of both brain and cord are diffusely inflamed, we label the conditions cerebro-spinal meningitis. At intervals, in certain regions, the cases multiply, and we then speak of epidemic cerebro-spinal fever. Until recently my experience, though somewhat varied, had been confined to a few instances in which the absence of the usual factors justified the diagnosis of the sporadic form of this disease. Within the past year a small outbreak in Baltimore has enabled me to study certain points in the etiology and diagnosis of this most interesting affection, and has thus determined my choice of a subject on which to address you.

I. SUMMARY OF THE FEATURES OF CEREBRO-SPINAL FEVER AS AN EPIDEMIC.

Upon these I shall only touch very briefly.

(*a*) One of the most fatal of all acute diseases, it fortunately takes a very humble position among epidemics as a destroyer. No fever attacks so few individuals in a community during its periods of prevalence; so that the general mortality may be but slightly increased. On the other hand, scarcely any known fever kills so large a proportion of those attacked. The recent epidemic in Boston illustrates this very well. Of 111 cases in three hospitals 76 died, a mortality of 68.5 per cent.

(*b*) The outbreak occurs in certain waves or periods, of which the fourth during the present century is at present prevailing in the United States. For several years there have been local epidemics of the disease in widely separated regions, usually in villages and country districts; but in 1896, 1897 and 1898 a slight epidemic occurred in Boston, and in the latter year cases began to be recognized in Baltimore and other towns. From a recent collective investigation, made under the direction of Surgeon-General Wyman, of the United States Marine-Hospital Service,[2] we learn that cerebro-spinal fever has prevailed during the past year (as a rule, in a mild form) in twenty-seven States, and in the District of Columbia. It is not possible to say that the movement of troops last summer had anything to do with the spread of the disease. The limitation for a year or more to one district or city without spreading to adjacent towns, the localization even (as at present in Washington and Philadelphia) to special districts of a city, the recrudescence for several seasons in succession, are well-known features illustrated by the present epidemic.

(*c*) Among specific diseases cerebro-spinal fever stands in some points close to pneumonia. Sporadic cases of both occur in intervals of epidemic prevalence, though in pneumonia they are much more numerous, while epidemics of pneumonia, like those of cerebro-spinal fever, are most striking in barracks, asylums and jails. Even when not prevailing as an epidemic, there may be remarkable house epidemics of cerebro-spinal fever. The seasonal relations are the same in both, and the two diseases may prevail together. The abrupt onset, the great frequency of herpes in both, the leucocytosis, "the almost identical characters of the fibrino-purulent exudate in the two diseases" (Netter), the frequent complication of pneumonia in epidemic cerebro-spinal fever and of meningitis in pneumonia are additional points of contact. The degree of contagion is about the same in both diseases, and, lastly, it has been claimed that the organism described in cerebro-spinal fever is only a variety or a degenerate form of the pneumococcus.

On the other hand, Leichtenstern, speaking against the view that the pneumococcus is the cause of epidemic cerebro-spinal fever, says: "Pneumonia is a disease spread over the entire earth, and appears at all times, there being no land immune from it. Epidemic meningitis is very rare, and in many countries is still unknown. Croupous pneumonia attacks every age, the disposition increasing somewhat with increasing age, epidemic meningitis is a disease which affects children and young people; beyond thirty-five there is slight disposition to it. Croupous pneumonia has a typical course and a crisis; epidemic meningitis has no crisis. The complications of the two diseases are different, etc." (Quoted by Councilman, Mallory and Wright.[3])

II. BACTERIOLOGY OF CEREBRO-SPINAL FEVER.

Until within the past few years the etiology of cerebro-spinal fever has been obscure, and a majority of observers regarded the organism found in the meningeal exudate as the pneumococcus, or a variety of it. More than twelve years ago, however, Weichselbaum described a diplococcus with special cultural peculiarities, which he regarded as the specific organism of the epidemic form of the disease. Little or no attention was paid to his communication until 1895, when his observations were confirmed by Jaeger. So little notice, indeed, had they attracted that neither Ormerod in "Allbutt's System" (vol. i, published in 1896), nor Latimer in "Loomis and Thompson's System," published in 1897, mention Weichselbaum's organism. The work of Heubner,[4] in Germany, and more particularly the studies of Councilman, Mallory and Wright, have fully confirmed the observations of Weichselbaum, whose organism, known variously as the meningococcus and the diplococcus intracellularis meningitidis, is now regarded as the specific cause of the disease. As the bacteriology of the subject is very fully discussed in the monograph by Councilman and his associates, and in the just issued article by Netter, in vol. xvi of the "Twentieth Century Practice," I shall confine my remarks to an account of our experience in the study of the cases which have been in my wards during the past year. To Dr. Norman B. Gwyn, who has charge of the bacteriological work in my clinical laboratory, and to Dr. N. McL. Harris, bacteriologist in the pathological department of my colleague, Professor Welch,

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[1] Read before the West London Medico-Chirurgical Society, June 16, 1899. — From advance sheets courteously furnished by the editor of the West London Medical Journal.

[2] Public Health Reports, vol. xiv.

[3] Epidemic Cerebro-spinal Meningitis. A Report of the State Board of Health of Massachusetts. Boston, 1898.

[4] Jahrbuch für Kinderheilkunde, 1891, and the Deutsche medicinische Wochenschrift, 1897.

I am under special obligations for their careful study of the cases during life and after death.

The meningococcus in cover-slips made from the exudate has usually a diplococcus form, and lies within the polynuclear leucocytes; hence the definition, *intracellularis*. Many of the cells may be stuffed with them. They may also occur free. It stains with the ordinary staining reagents, and is decolorized by the Gram method. It grows best on Löffler's blood serum, on which it forms "round, whitish, shining, viscid-looking colonies with smooth, sharply-defined outlines, which attain a diameter of 1 to 1½ millimetres in twenty-four hours" (Councilman). In cultures it is usually short-lived; but Netter states that Germano has found that it resists desiccation, and has preserved its vitality to the end even of 90 days. He states also that Neisser has shown that the organism is transportable by atmospheric currents, even the most feeble, and that it is very susceptible to aërial convection. It is found in the cerebro-spinal exudate, rarely elsewhere in the body; but it has been isolated from the blood, the pus from the joints, the pneumonic areas in the lungs and the nasal mucus.

The organism is feebly pathogenic for animals. Rabbits and mice resist subcutaneous inoculation. Huebner, and Councilman and his associates have produced typical meningitis by inoculating cultures of the meningococcus beneath the spinal membranes of goats.

Our clinical and pathological experience with the organism is as follows: In 21 cases which I have seen, the lumbar puncture was made in 16. In three patients seen in consultation the diagnosis seemed so clear that lumbar puncture was not made. In Cases 1 and 2, both mild, the puncture was made, in one on the seventh day, in the other on the sixth; but no organisms were found. Cases 3 and 4 were admitted late in the disease, and it was not thought necessary to perform it. Of the remaining 14 cases, in 13 the diplococcus intracellularis was present on cover-slips and in cultures. In the remaining case its presence was doubtful on the cover-slips, and the staphylococcus grew in culture. Of the cases which came to autopsy, five in number, the bacteriologic results, as given by Dr. Harris, are as follow: Autopsy No. 1,104; meningitis, meningococcus; the pneumococcus from a pneumonic area in the lung. No. 1,189, a case with extensive arthritis, in which the diplococcus intracellularis was found in the blood and joint tissues during life, as well as from the meninges. Post mortem, the meningococcus was separated in pure cultures from the cord and brain, and from the lung the pneumococcus and the bacillus lactis aërogenes; from the blood in the coronary arteries the pneumococcus. The other organs were sterile. In Case 10 (Autopsy No. 1,247), on which laminectomy had been performed, the spinal meninges at the time of his death (about two months later) were perfectly normal. At the operation, the staphylococcus pyogenes grew from the culture. In No. 1,314, a case in which laminectomy was performed, the meningococcus was isolated from the meninges, both during life and after death. The bacillus coli communis, the bacillus lactis aërogenes, and the staphylococcus pyogenes albus were also isolated; from a broncho-pneumonic area in the lung the pneumococcus and the staphylococcus pyogenes aureus, from the spleen the staphylococcus pyogenes citreus, and from a thrombus in the superior longitudinal sinus and from the pelvis of the left kidney the streptococcus septicus liquefaciens (Sternberg). This case had a diphtheritic and hemorrhagic cystitis. No. 1,364, a very protracted case, in which death occurred in the twelfth week, and from which the meningococcus had been isolated from the spinal fluid twice, from the meninges post mortem the streptococcus pyogenes and the bacillus coli communis were isolated; and the staphylococcus pyogenes aureus and the bacillus coli communis from the broncho-pneumonic areas in the lungs. In a fatal case outside the hospital, the meningococcus, the pneumococcus and the bacillus coli communis grew in cultures from the cerebral meninges. There was no focus of pneumonia in the lungs.

The following memoranda by Dr. Harris are of interest:

Cultural methods employed. In the first cases we followed the method recommended by Councilman; namely, the use of blood-serum "slants." Such was found to be almost useless on account of contaminating organisms, for, out of a series of eight tubes, only one gave pure cultures.

In the other cases the exudates and fluids were plated out in alkaline five per-cent. glycerin-agar. This procedure gave entire satisfaction, in that the growth of the meningococcus was quite vigorous, and that associated organisms in the exudate (Cases 1,314 and 1,324 A) were readily separated and classified.

Upon certain points our observations agree with those mentioned in Councilman's article.

(*a*) We have never seen, as Jaeger states, a capsule formation, nor in any case unassociated with other pyogenic organisms were we able to stain the specific organism by Gram's method.

(*b*) The cases coming to autopsy at the height of the disease furnished upon cover-slip and culture abundant evidence of the presence of the meningococcus, whereas cases which succumbed late in the disease yielded feeble results, or, as in Case 1,364, no evidence at all.

(*c*) The biological features of our several cultures gave practically the same results as Councilman obtained, except that in a few cases, after carrying the organism through several generations, litmus milk was found to be slightly bleached, but with no evidence of acid formation.

Regarding potato-culture, Councilman's statement of an invisible growth on this medium should be expanded by remarking that microscopic preparations invariably show evidences of moderate increase, and that the organisms are much larger than on ordinary media.

At no time has a blood-serum culture been observed to bear any striking resemblance to a growth of pneumococcus on a similar medium.

As in Councilman's experience, great variations in viability of the organisms were noted. But it is worthy of mention that when there is condensation water in the tube and growth present in it, the organisms as a rule will be found to be alive many days after life has ceased in the growth upon the surface of the medium.

Staining Reactions. — Supplementary to Councilman's remark upon focal staining points when using methylene-blue, it might be said that if old Löffler's methylene-blue solution is used, the coloration of that focal point is a decided violet-blue.

Animal Experiments. — Subcutaneous inoculation in rabbits and mice (white and gray house-mice) was resisted in every case.

In rabbits inoculated below the dura mater, or into the ventricles of the brain, death occurred in all within fourteen days to six weeks, and in no instance were we able to find evidences of gross pathologic lesions, nor the presence of the meningococcus on cover-slip or culture. The animals were all greatly emaciated.

Mice inoculated into pleural or peritoneal cavities died in from three to four days, in most cases with general septicemia.

Special Remarks. — Regarding Jaeger's observation of the occurrence of chains of cocci in exudate or spinal fluid, it may be said that it has not been observed, but on blood serum growths it was quite common to find chain-formation with the unstained light line of cell-division running parallel to long axis of chain. However, this feature is not by any means uncommon amongst the pyogenic staphylococci.

Attempts to isolate the specific organism from any other site than the spinal fluid, and the meninges of spinal cord and brain, have in every case been attended with failure. This is especially noteworthy in Case 1,189, which presented arthritis. A large quantity of the sero purulent fluid was inoculated, incubated for three days, and the plates were found sterile, and yet cover-slips of the fluid showed considerable numbers of intracellular diplococci. The heart's blood of this case failed to give positive results at autopsy, although during life the organism had been isolated from the blood as well as from the joint lesion.

Pneumonic or broncho-pneumonic foci have always given the pneumococcus, either alone or with the pyogenic staphylococci.

One Case, No. 1,314, brings out a possible source of error in the use of Gram's stain upon the cover-slip preparations of the exudate in cases where a secondary infection may be present. The cover-slips from the meningeal exudate in this case were examined by Gram's method before cultures were ready, and cocci were found which did not decolorize, thus causing some surprise, but it was cleared of doubt by finding the staphylococcus pyogenes albus in association with the meningococcus upon the agar-plate.

Case 1,325A is most interesting in that from the exudate on the cerebral meninges the meningococcus, the pneumococcus and the bacillus coli communis were isolated, and positively identified. A mouse was inoculated intrapleurally with 3 cubic centimetres of a twenty-four-hour-old blood-serum condensation-water growth, and succumbed upon the third day with a general infection.

Another mouse received 5 cubic centimetres of a strong suspension in Durham's medium of a twenty-four-hour-old agar-agar culture of the pneumococcus, but showed no evidence of illness. The milk culture of this organism when stained by Welch's capsule stain exhibited well-defined capsules and stained by Gram's method.

Microbic Association in Cerebro-spinal Fever. — Councilman, Mallory and Wright state that "Mixed infections with other organisms were not uncommon. The pneumococcus was found seven times, once in connection with Friedländer's bacillus. Terminal infections with staphylococci and streptococci were occasionally found."

Netter refers to this point in the following terms: "In a very small number of cases observers have reported finding at the same time with the pneumococcus or the diplococcus the staphylococcus pyogenes, the streptococcus, the colon bacillus, the bacillus proteus, and the capsulated bacillus. These microbic associations are always secondary, however, and we must refrain from regarding any but the two agents above described as the primary causes of cerebro-spinal meningitis."[5]

In the report on the bacteriology of the post-mortems by Dr. Harris, the frequency and number of microbic associations will have been noticed. Three points are of interest in this connection: In chronic cases, as 10 and 17 of our series, the diplococcus intracellularis may no longer be present; we have obtained it, however, for the first time on the 25th, 31st, and 41st days of the disease. Of the two cases referred to, No. 17 presented a most typical picture of the disease, and the diplococcus intracellularis was obtained in the spinal fluid on the 31st and 35th days. At the autopsy the meninges showed a moderate amount of exudate, and there was fluid (purulent) in the posterior horns of the ventricles. The diplococcus intracellularis was not found, but the streptococcus pyogenes and the bacillus coli communis were isolated from the meninges.

Case 10 is of particular interest, and I give here a brief summary of the history.

A sailor, John F., aged twenty-five, was admitted October 29, 1898. The illness had begun on October 26th, with swelling and pains in the right ankle, and the next day the left ankle became swollen, and then the right hip. He was able, however, to walk to the hospital. On admission there were also redness and tenderness of the left wrist. For the first week we were very doubtful as to the nature of his trouble. The temperature was between 102° and 104°, and we rather suspected typhoid fever. On the 31st he complained of pain in the back and hips, and on November 1st it was noticed that his head was in a very retracted position. On November 4th he had retention of urine. On the 6th it was noticed that he could not move his legs. Lumbar puncture was then performed, and two drachms of a thick creamy pus removed which showed cells and numbers of diplococci, some in cells, but a majority free and in groups. Dr. Cushing performed laminectomy, and drained away a large amount of purulent exudate, and irrigated the spinal meninges with normal salt solution. Cultures made from the fluid obtained by the lumbar puncture and at the operation grew the staphylococcus pyogenes aureus. From the history and symptoms the case was doubtless one of cerebro-spinal fever, subsequently affected with the staphylococcus.

More frequently the pneumococcus has been found in association with the diplococcus intracellularis. In our series it was present only once (Case 13) in the fluid obtained by lumbar puncture. On the 5th day 20 cubic centimetres of a faintly cloudy fluid were removed, and both organisms grew in culture. On the 7th day the pneumococcus was isolated from the blood. Netter found the pneumococcus associated with the diplococcus intracellularis (post mortem, I take it, though it is not so stated) in 10 of 16 cases of cerebro-spinal meningitis.

The third point is the occasional association of the tubercle bacillus with the diplococcus intracellularis, but so rarely that it is not a point of much practical importance.

On the whole, then, our observations support those of Weichselbaum, Jaeger, Heubner, Councilman and others, that in epidemic cerebro-spinal fever there is an organism with special cultural peculiarities which may reasonably be regarded as the exciting cause of the disease. Netter alone, among recent observers, seems to doubt this, and says that he only found the diplococcus intracellularis in 16 out of 39 cases, and in 10 of these the pneumococcus was present at the same time. His most recent statement in the "Twentieth Century Practice" (1899) is worth quoting: "Certain observers, and more particularly Jaeger and Heubner, believe that the diplococcus intracellularis is the sole pathogenic agent in epidemic cerebro-spinal meningitis, and that the pneumococcus has no influence whatever in the production of true epidemic meningitis. Councilman is a little less emphatic, although he appears disposed to adopt this way of thinking. I do not, however, in any way accept this view. The pneumococcus can, without any doubt, cause meningitis, and in spite of Heubner's experience, the rôle of the pneumococcus has been most surely established experimentally. The frequent occurrence of pneumonia complicating meningitis and of meningitis complicating pneumonia, and the coincidence with meningitis of many other inflammations which may be excited by the action of the pneumococcus, imply that between pneumonia and meningitis there exists a relation which cannot be denied." He seems to think that the diplococcus intracellularis may be a degenerate form of the pneumococcus, and in support of this view cites: "Its intracellular position is evidence of a phagocytosis going on, the impossibility of cultivating most of the individuals, as shown by the small number of colonies obtained, its decolorization by Gram's method, and its usual innocuousness in animals. I would not, however, insist upon this opinion, nor lay too much stress upon the arguments just mentioned, for the question is only hypothetical as yet."

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[5] Twentieth Century Practice, vol. xvi, p. 193.

It does not seem to be altogether clear, from certain of Netter's observations, that he has been dealing with the meningococcus. Thus, in his communication,[6] the coccus which he found in the eight cases was rounded, usually in pairs, sometimes in short chains; at other times capsules were seen. They stained by Gram's method, and in bouillon long chains developed, and mice resisted infection when inoculated subcutaneously. He concludes, from these observations, that the meningococcus is nothing more than a degenerate pneumococcus. Dr. Harris, in a note on this, remarks: "Such conclusions are entirely unwarranted, or if his observations are correctly stated, he evidently had the veritable pneumococcus to deal with, and, by some strange mode of reasoning, concludes that he has the meningococcus in his series of cases, and that it is identical with the pneumococcus, though of a degenerate form!"

Netter's position is most illogical and confusing. Throughout the article in the "Twentieth Century Practice" — in many ways one of the very best in literature — he assumes that the specific disease, cerebro-spinal fever, may be caused either by the pnemococcus or the diplococcus intracellularis. That a primary cerebro-spinal meningitis may be due to the pnemococcus is universally acknowledged; but it is in the highest degree unlikely that a remarkable specific affection, like cerebro-spinal fever, should be caused by two different organisms. Towards the close of the article the inconsistency of this view seems to impress him, for he says certain peculiarities "prevent us from concluding that the two diseases (that is, pneumonia and cerebro-spinal fever) are absolutely identical."

III. DIAGNOSIS OF CEREBRO-SPINAL FEVER.

Meningitis is not always easy to recognize clinically. Mortifying post-mortem disclosures are even more common with it than with pericarditis. The unexpected meningitis of pneumonia, of Bright's disease, and of other chronic affections, teaches us how latent may be the process; on the other hand, who has not in typhoid fever and in pneumonia made a positive diagnosis of meningitis, and has found post-mortem the cerebro-spinal membranes perfectly free. Sooner or later the truth of Stokes's dictum is brought home to each one of us: "There is no single nervous symptom which may not, and does not, occur independently of any appreciable lesion of the brain, nerves or spinal cord." The anatomical classification of leptomeningitis is not very satisfactory, and, as I have stated, there is a great lack of uniformity in the terms employed. The nomenclature of the Royal College of Physicians recognizes four groups — purulent, tubercular, syphilitic, and cerebro-spinal fever. An etiological classification, possible to-day in part, is of necessity incomplete. In the annexed diagram I have made a provisional grouping of the chief forms:

ACUTE LEPTOMENINGITIS.	Primary.	1. Of cerebro-spinal fever.	(*a*) Sporadic. (*b*) Epidemic.	Diplococcus intracellularis.
		2. Pneumococcic.	Meninges alone involved or in a general pneumococcus infection.	Pneumococcus.
	Secondary.	1. Tuberculous		Bacillus tuberculosis.
		2. Pneumococcic.	(*a*) Secondary to pneumonia, endocarditis, etc. (*b*) Secondary to disease or injury of cranium or its fossa.	Pneumococcus.
		3. Pyogenic.	(*a*) Following local disease of cranium or a local infection elsewhere. (*b*) Terminal infection in various chronic maladies.	Various forms of staphylococci and streptococci.
		4. Miscellaneous acute infections.	In typhoid fever, influenza, diphtheria, gonorrhea, anthrax, actinomycosis and other acute diseases.	Typhoid bacillus, influenza bacillus. diphtheria bacillus, gonococcus, etc.

The acute primary leptomeningitis in a large proportion of all cases follows an infection with the diplococcus intracellularis or the pneumococcus. It will be a great gain if Still's observations (to which I shall refer later) on the posterior meningitis are confirmed. I do not know where Quincke's meningitis serosa should come in an etiological grouping. Of three cases diagnosed as such in our records, in one a micrococcus was isolated, but nothing further is stated as to its identification. It is highly improbable that, as Netter holds, cerebro-spinal fever either in the sporadic or epidemic forms is caused by the pneumococcus. The body of evidence accumulated within the past few years in Germany and America is strongly in favor of the specific relationship of a definite, easily-recognized organism, the diplococcus intracellularis. The pneumococcus may produce a primary meningitis, and pneumonia at certain seasons and in certain regions may frequently be associated with this lesion, but both clinically and bacteriologically this form can be distinguished from the disease under consideration.

While the possibility of the occurrence must be admitted, I have not recognized a primary meningitis caused by the pyogenic organisms[7] or by the tubercle bacillus. The terminal meningitides I have placed among the secondary forms; and, as in the terminal pleurisies and peritonitides, a variety of organisms are found. Even in cerebro-spinal fever the streptococci and staphylococci, always on the watch for a *locus minoris resistentiæ*, may drive out the original foe, as in Cases 10 and 17.

To the secondary forms of meningitis in the table I shall not refer, except to call attention to the importance of the pneumococcus in this group also; nor can I discuss within the limits of this lecture the clinical features of the varieties of meningitis, and must confine my remarks to a few special points in the diagnosis of cerebro-spinal fever, and to a consideration of certain sporadic forms of meningitis.

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[6] Bull. et mem. Soc Méd. des Hôp. de Paris, xv, p. 407, 1898.

[7] The case of John Brooks (autopsy No. 1,605) is of interest in this connection. He had an illness of eight weeks' duration, with obscure cerebral symptoms. On admission he had an urethral discharge. At autopsy there was found an extensive cerebral meningitis, with distention of the ventricles and slight meningitis of the dorsal cord. From the exudate and from the urethral discharge streptococci and staphylococci were isolated. The slight urethral secretion might readily have been overlooked, and the case regarded as a primary pyogenic meningitis.

(1) *Certain Features in the Symptomatology of Cerebro-spinal Fever.* — No other form of meningitis presents a symptomatology of the same fulness — general, cerebral, spinal, and peripheral features are present in almost every case. This results in part from the extent of the cerebro-spinal involvement, in part from the very frequent implication of the nerves, and to some degree is a consequence of the very chronic course. I shall discuss only a few of the important symptoms.

(*a*) *Onset.* — In striking contrast to other forms, particularly the tuberculous, cerebro-spinal fever sets in abruptly. Without warning, while at work, or awakening the patient from a sound sleep, comes the pain in the head, etc. This peculiarity may also be met with in primary pneumococcic meningitis; but in the form secondary to pneumonia, and in that which arises in endocarditis, latency of onset in the rule.

(*b*) *Fever.* — There is no constant type of fever in any form of meningitis. In cerebro-spinal fever the pyrexia is very variable, and I have given here a few charts in illustration.[8] There may be no fever at onset. Of our epidemic cases, all had fever on admission.

Irregularity in the fever may be present from the start. There is not a steady rise at first to a fastigium, but even on the third or fourth day the temperature may fall to normal. Chart I shows this extreme irregularity in a two-hour record. The remissions were very pronounced, and the temperature rose to 108° just before death.

In other cases the course is singularly like that of typhoid fever, and for days the two-hour temperature chart may not show a variation of more than a degree. This is well illustrated in Chart II from Case 17. This patient (as shown on the lantern slide) had the facial aspect of a case of typhoid fever. Chart III from Case 13 shows also a very steady fever with but slight remissions to the time of death on the fifteenth day. Chart IV from Case 15 presents a still more marked resemblance to a typhoid-fever curve, particularly in the daily remissions, giving the spiked chart with which we are all so familiar in the third week of the disease. Intermissions, exacerbations, and great irregularities similar to those in tuberculosis are very pronounced in the more chronic cases. Chart V from Case 16 gives the maximum and minimum daily temperature from the twenty-ninth to the seventy-ninth day. It will be noticed how variable is the time of the highest point of daily fever. On thirteen days the maximum temperature was in the morning — an inverse type, to which many writers have referred, in this disease. The exacerbations are better shown in a two-hour record. In Chart VI from Case 15 the intermittent type is shown, but the paroxysms are distinguished from those of tertian malarial intermittent fever by their prolonged course.

In cases of this sort, when chills occur, the picture is very suggestive of malaria, and one can understand why some of the older writers regarded the disease as a manifestation of paludism. The chart of Case 8 is worth a passing comment. After a very steady temperature on the 9th, 10th, and 11th days, the record on the 12th day was normal. On the 13th day there was a paroxysm without a chill, lasting from 10 P. M. on June 19th to 4 A. M. on the 21st. On the 14th and 15th days the temperature was normal. On the evening of the latter the fever rose, and the paroxysm lasted through the 16th day, and at 4 P. M. the patient complained of decided chilliness. On the 17th day no fever. At 10 A. M. on the 18th day the patient had a rigor, in which the temperature rose to 104.5°; the paroxysm lasted more than thirty hours. Then on the 20th, 21st and 22d days he had recurring attacks, two with chills; the one on the 22d, without chill, extended into the 23d day. After this the patient's temperature remained normal, and he recovered rapidly. During these attacks he complained of a great deal of pain in the head and back. The spleen was not enlarged. The blood was examined daily for the malarial parasites, but none were found. And lastly, Chart VII from Case 15 illustrates the relation of the lumbar puncture to the temperatures. After the sixth, seventh and eighth puncture the fever dropped; after the twelfth it rose.

(*c*) *Skin Rashes.* — Various skin rashes are common in cerebro-spinal fever, and form an important feature in the diagnosis. Of 21 cases which I saw during the epidemic, in 13 a skin eruption of some form or other was present. Herpes, of course the most common, was present in 8 cases. A diffuse erythema about the chest and abdomen, and over the joints, was present in 4 cases. Petechiæ were noticed in 8 cases, extensive in only 3. In 3 cases a very remarkable and peculiar rash was present in the neighborhood of the joints, particularly over the extensor surfaces of the knees and elbows, and about the ankles. There was a diffuse, livid erythema of great intensity, on which pupuric herpes developed — a vesicular rash, the individual vesicles of which became filled with blood. As the erythema faded and the vesicles dried, they could be felt as little nodular hemispherical bodies, which persisted for a week or ten days.

(*d*) *Blood.* — A careful study of the blood was made in all of our cases. A leucocytosis was present in every instance. In four the first blood count was made on the third day, and the leucocytosis was 25,900, 14,500, 40,800, and 32,000 per cm. The first blood count was made on the fourth day in four cases, and the leucocytosis was 26,240, 31,800, 19,300, and 7,600 per cm. In only four cases did the leucocytes exceed 40,000 per cm., and the maximum count was on the ninth day in a fatal case, 47,000 per cm. The leucocytosis persists even in the most protracted cases. In a lad who died in the twelfth week of the disease the leucocytes were 23,000 per cm. shortly before death. As a rule there was no special reduction in the red blood corpuscles. In one case a moderate anemia developed, and in the fifth week the red corpuscles were only 3,100,000 per cm. In one case the diplococcus intracellularis was isolated from the blood during life.

Leucocytosis has no special value in the differential diagnosis of the various forms of meningitis. I had an impression that it was not so constant in the tuberculous variety, but Dr. Parfitt analyzed the records in 11 of our cases and found that in only 3 was a leucocytosis absent. The lowest count was 65,000 per cm. Of 8 cases with leucocytosis there were 4 with 20,000 or more white corpuscles per cm. The highest count was in a child aged eight — 24,333 per cm. Altogether the leucocytosis seems not to be so high or so persistent in the tuberculous meningitis.

(*e*) *Arthritis,* or more often periarthritis, much more common in cerebro-spinal fever than in other forms, was present in two of our cases. In Case 7 the joint lesion came on with great rapidity, and by the fourth day he had a multiple suppurative arthritis, resembling an acute pyemia. The diplococcus intracellularis was isolated from the pus in the joints. In the other (Case 10) the disease began with arthritis.[9]

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[8] The charts were not received in time to print.

II. *Kernig's Sign.* — Described by a Russian physician, and studied in Germany and France, this interesting sign has not attracted the special attention of English and American physicians, though J. B. Herrick, of Chicago, at the last meeting of the Association of American Physicians, spoke of its value. It has been present in all of our cases in which it has been looked for. It is, I think, an old observation that the subjects of protracted meningitis, particularly children, very often lie with the thighs flexed upon the abdomen, and with the legs in a state of partial contracture, so that they are with difficulty extended. To test for Kernig's sign the patient should be propped up in bed in the sitting position, then, on attempting to extend the leg on the thigh there is contraction of flexors which prevents the full straightening of the leg. On the other hand, in the recumbent posture the leg can be fully extended. Many patients with meningitis are not in a condition to sit up, and the test can be equally well made by flexing the thigh on the abdomen, when on attempting to extend the leg, if meningitis be present, the limb cannot be fully extended. Friis found the sign in 53 or 60 cases, and Netter in 45 or 50. It is stated to be present in all forms of meningitis when the spinal meninges are involved. The presence of the sign is no indication of the intensity of the spinal involvement, as it existed in a very marked degree in a recent case of pneumococcic meningitis, in which there was no positive exudate on the spinal meninges, only a turbid fluid. Netter's explanation of the phenomenon is as follows: "In consequence of the inflammation of the meninges the roots of the nerves become irritable, and the flexion of the thighs upon the pelvis, when the patient is in the sitting posture, elongates and consequently stretches the lumbar and sacral roots, and thus increases their irritability. The attempt to extend the knee is insufficient to provoke a reflex contraction of the flexors while the patient lies on his back with the thighs extended upon the pelvis, but it does so when he assumes a sitting posture."

(To be continued.)

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Clinical Department.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

Regular meeting Wednesday, March 8, 1899, Dr. J. W. Elliot in the chair.

Dr. F. A. Higgins showed a case of

IMPERFORATE RECTUM.

Robert N., age four days, was brought to the Children's Hospital, November 24, 1891. His general condition was very good, but there was considerable abdominal distention and tenderness. The anus admitted tip of little finger to a depth of nearly an inch and a half, but no fluctuation above could be felt. Dr. Burrell operated immediately after seeing the case. An incision was made backward in the median line from the outer margin of the sphincter ani, extending up on the dorsum of the sacrum. The coccyx and the left half of the sacrum up to the second sacral foramen were excised with bone-forceps. An opening of considerable size was thus obtained with the rectum lying exposed directly in front. The rectal and anal portions of the bowel were seen to be continuous, and the obstruction found to be due to a membranous diaphragm stretched across about two inches above the anus. The anus was dilated, the diaphragm punctured from below, the opening stretched, and the wound sutured. The stricture was dilated with a glove-stretcher every three or four days while the child remained in the hospital. The recovery was uneventful, and the child was discharged from the hospital on the eighteenth day. Now at the age of seven he is apparently perfectly well, and has had perfect control of the sphincter since infancy. This case is, so far as I am able to find out, the first case of imperforate rectum for which the coccyx and sacrum have been excised in operating for its relief.

Dr. Farrar Cobb presented a

CASE OF IMPERFORATE ANUS.

It is my wish to very briefly report the following case, because it demonstrated the value of the posterior operation and the long incision, close to the left-hand border of the sacrum and coccyx (the so-called para-sacral incision), when I had failed to find the rectal pouch by the usual median perineal section. Congenital ano-rectal imperforation and its treatment has been reviewed by Matas, of New Orleans, in 1897, and I can only refer to his paper for a complete study of the subject.

A male infant of Italian parents was brought to the Carney Hospital thirty-six hours after birth. It had passed no meconium, and was said to have cried almost constantly and to have regurgitated all liquids given. I saw the child forty-eight hours after birth and operated without delay. It was a large, well-developed boy. The abdomen was moderately distended and tense. The anus was normal in appearance, but the rectal opening consisted of a shallow depression in the skin — no fluctuation or mass could be felt through this depression. The urine passed normally and was free from meconium.

The infant was placed in the lithotomy position with heaters around it; ether, a few drops at a time, well mixed with air, was used to obtain partial anesthesia. A careful and rather prolonged dissection was made in the median line of the perineum, the incision extending from the root of the scrotum to the tip of the coccyx through the anal tissues, and being carried as deep as I dared to go, but no rectal pouch could be seen or felt. From the normal formation of the anus, I had been led to hope that the case might be a simple one, and the rectal ampulla be found just beyond the external skin, but the external appearance was no guide to the situation of the rectum, and the use of a trocar or exploring needle would have done no good and some mischief. Rather than resort to opening the abdomen it was decided to try and find the rectum by the posterior route, being prepared to do resection of the coccyx and, if needed, partial resection of the sacrum. The previous incision was then prolonged along the left border of the coccyx and sacrum to a point nearly or quite as high as the sacrosciatic notch, the infant being held in an exaggerated lithotomy position. By this incision I was surprised to find how the pelvis became accessible. The coccyx bent back readily, and by using strong lateral retractors very good access to the pelvis for the eye and fingers was obtained. The rectal pouch was found high up surrounded by peritoneum. It was not necessary to cut away the coccyx or any part of the sacrum, although this could have readily been done. At the time of the operation I did not know that this long para-sacral incision had been used and advocated by Vincent for this class of cases.

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[9] A full report of these cases is given in the Boston Medical and Surgical Journal, December 29, 1898.

The peritoneum was opened, the rectal pouch was pulled down to the anus and stitched to its margins with fine silk sutures and opened, the peritoneal cavity being walled off above the gauze. Gauze was left in the wound to protect the peritoneal cavity and to check some obstinate, deep, venous oozing. The external wound was sutured, provisional stitches being left where the gauze strands led out beside the rectum, at the anal border.

The child remained in the hospital about ten days and did very well. It was fed on cream mixture and had free and apparently normal movements. The gauze was removed in forty-eight hours and the provisional sutures tied. The external wound united well and without suppuration. The parents insisted on taking the child home against my wishes, and when it left the hospital it was apparently well. On looking up the case some months after, I learned that it had died of "fits" soon after leaving the hospital. I do not think the operation was a cause of this death, for apparently it was successful, and the child's nutrition was good when it was taken home — but, at any rate, the case cannot be shown you to-night.

In conclusion, I want to note a few practical points in the surgery of this class of cases.

The situation of the rectum cannot be determined by the external appearances (unless in those cases in which meconium is discharged through bladder or vagina). A trocar or exploring needle should never be used.

Primary abdominal section should never be resorted to except in those rare cases of delayed operation in which the child's condition is extremely precarious and immediate opening of the bowel is needed.

As a routine method preliminary dissection in the median line of the perineum should be done, using care to cut backward in the median line and not laterally. If this does not reveal the pouch the attack should be by the posterior route, either with or without resection of the coccyx and part of the sacrum. In many cases resection will not be necessary. In almost all cases the posterior route with resection of the cartilaginous bones will be sufficient. Abdominal section is seldom needed, and only as the last resort. The peritoneum can be safely opened from below.

Dr. Conant: If I am not mistaken I saw this case soon after Dr. Cobb operated on it, and can say that when the baby left the hospital its general condition was as good as one could expect in any child of that age irrespective of the operation, and I saw no reason, from what I knew of the case, why it should not go on and perform its functions in the ordinary way. It certainly was a very successful operation as far as the operation itself went.

After seeing the boy we have seen here to-night, and hearing Dr. Cobb's paper, it may seem presumptuous for any one to state that he believes in any other operation than this. I have seen, I think, five cases in all of this trouble, two at the Massachusetts General Hospital, and it was rather an interesting thing that the first abdominal operation I ever did after I was appointed an out-patient surgeon at the Massachusetts General Hospital was done in the house on a case of this sort. I did not then attempt to remove the coccyx or sacrum, and I don't know but what if I had that operation might have been a success. I tried the posterior operation without the removal of the coccyx and sacrum, and as nothing could be seen or felt it seemed wise to open the abdominal cavity and find out where the rectum was, whether wanting entirely or located in some abnormal position. On opening the abdomen there was found to be practically an absence of the rectum, and there was a point about on a level with the promontory of the sacrum which flared off and covered practically the whole brim of the true pelvis. Any attempt at puncture in that region from below without knowing where you were going would have brought you into the peritoneal cavity at once. Having found exactly where the gut was bulging, a trocar was passed into the incision previously made, and in such a way that practically you went into the gut without opening the peritoneal cavity in front or behind. That operation was done the latter part of May or June, and the child lived until the middle of August, and died of cholera infantum. I was impressed by the fact that the opening of the abdominal cavity made but very little difference in the child. There was not a rise of temperature or pulse to amount to anything. The wound healed by first intention; apparently no shock from opening the peritoneal cavity. The bowels were kept open by inserting a glove-stretcher or the finger. I was very much impressed with the ease with which it was possible to locate the exact position of the rectum, or what was left of the rectum, that is, the very uppermost portion of it, and the ability to demonstrate exactly where you wanted to pass your trocar.

I have been interested in collecting 100 cases reported by Cripp and perhaps they will add some light to the subject. His first series of cases were where the operation was for opening the colon in the groin. There were 16 of those cases, with 11 deaths, and yet if you take up most of the text-books on rectal diseases you find colotomy is one of the operations especially urged if the so-called posterior operation is not successful. He had 3 cases of colotomy in the loin, with 2 deaths. Out of 17 cases of puncture 14 died, which you would naturally expect. Unless you know where you are puncturing you probably go into the peritoneal cavity in front or behind. There were 8 cases of removal of the coccyx and resection of a part of the sacrum and 5 deaths. There was an incision in 39 cases and 14 deaths. He had a series of 14 cases where he made a communication between the rectum and vagina; 1 death. Another series of miscellaneous cases, 3 cases and 3 deaths; out of 100 cases 50 deaths. If you analyze those cases somewhat carefully you find the most deaths are in the class of cases in which you would expect to get death, that is, indiscriminate puncture in the operation of colotomy.

I say this because it seems to me a colotomy in a small child is a much more serious operation than simply opening the abdominal cavity, locating the exact position and tapping from below, knowing exactly where you are going. One interesting thing is his series of 8 cases with 5 deaths.

I suppose there is no question that in the smaller number of cases which may be called the more severe ones, there must necessarily be this division of opinion as to whether this anterior operation is more desirable than the posterior one where you take out the coccyx and sacrum. It seems to me there can always be an honest difference of opinion as to the wisdom of the two methods. If the rectum is as high up as in my case it seems to me it would have been almost impossible to have reached the rectum by any operation posteriorly, unless you take out practically all the sacrum. So that it seems to me there can reasonably be a certain class of cases in which this posterior and brilliant operation cannot be a success because you cannot get up to your sac. I believe this posterior operation has a place for itself and should be the first operation to try. If you can reach the gut in this way you can expect to get better results in the long run than where you have to do an abdominal operation, and then have to do what is known as the combined method, because it is extremely difficult in those combined methods to keep the trouble in the pelvis and in the peritoneal cavity entirely distinct, so that the risk of possible infection is very much greater.

Dr Whitney explained briefly the mode of development of the rectum, and how from a malformation the condition of imperforate anus could arise. Specimens from the Warren Museum illustrating this were shown.

Dr. Arthur T. Cabot said that he should fully agree with Dr. Cobb as to the advantage of the posterior (Kraske) incision in providing access to the pelvic cavity. While not having used this incision himself in a case of imperforate rectum, he had employed it many times in cases of cancer of the rectum, and felt that it would afford a most satisfactory approach to the lower end of the bowel in any case where the bowel descended into the pelvis, and would only fail when the pervious portion of the gut ceased above the pelvic brim.

He mentioned a case reported by him years ago, in which the bowel opened into the deep urethra. The patient had already lived many months with his fecal evacuations all passing *per urethram.* An incision made through the dimple in the skin which marked the seat of the sphincter ani, reached the bowel at a depth of about one and a half inches. The rectal wall was drawn down and sutured to the skin in the middle of the sphincter. The result was absolutely satisfactory, and the patient was seen some years later with good retentive power and a sphincter which acted in all respects normally.

In some cases the rectal sac lies too high in the pelvis to be found and properly treated by an incision from below, and in such cases an abdominal incision, as urged by Dr. Conant, is the easiest, safest and, consequently, the best method of learning the existing anatomical conditions. In some cases it may be possible with the knowledge thus gained to so direct an incision from below that it will enter the rectal pouch safely. When this cannot be accomplished, the bowel can be opened and stitched in the abdominal incision.

Dr. Mixter: Dr. Conant referred to a case he saw the other day upon which I operated, and did what one does not wish to do except under exceptional circumstances— I made an inguinal colotomy. The circumstances were such that I think it was the only possible thing to do. The child was three or four days old, a puny little thing, and the abdomen was so distended that the outside of it looked like a big abscess ready to burst. The skin was glassy and red, and the baby was absolutely blue; in fact, Dr. Whitney suggested it was a blue baby. The pressure had almost entirely shut off what little respiration the child had. It was impossible to give it ether, and I was sure I could feel the pouching rectum not far from the skin; so I made a median incision and not finding it, I did what I should not do except in exceptional circumstances — put in the trocar. Nothing came through the trocar, although I am sure it went into the rectum. Then I made a small incision through the abdominal wall, found an enormously distended gut and caught it by a stitch to the abdominal wall. Round on the inside of the abdominal wall, between that and the gut, was packed gauze, an opening made, and an enormous quantity of very sticky tenacious meconium came out. The child did perfectly well, the gauze was removed, feces came through this opening in the side for something like two weeks. At the end of two weeks the child had done well, was growing and eating well, and digesting its food well, and then a block-tin tube passed through the opening in the side could be passed down to the scar in the region of the anus, and a very slight dissection showed the rectal pouch, which was brought down and opened. The child has done well since then, that is, about a week ago. In that case the rectum was closed to the anus.

I have seen two cases interesting in this connection, being of the same origin as these two cases of anus aberrans Dr. Whitney has shown. One of these I operated upon with success. There was an opening from the vagina or vulva back to the middle of the mass of sphincter which could be easily found, and I did an operation like that for ruptured perineum closing the opening in the vagina. That was done two or three years ago, and the child has had perfect control of the bowels since.

I agree with Dr. Cabot that in most cases the preferable operation would be this lateral operation if it can be done. In certain cases, as in the one I spoke of, it would be impossible to prolong the dissection to that extent. The bowel can be opened from above in less than two minutes without the slightest trouble.

A CASE OF IMPERFORATE RECTUM.

Dr. C. A. Porter reported this case: In June, 1894, I saw, with Dr. Francis Murphy, of Roxbury, a well-nourished boy, two days old. He had not passed meconium. A shallow dimple marked the site of the anus, the levatores and sphincter were normal, Without ether an incision was made exactly in the median line from the penoscrotal angle to the coccyx; the latter was pushed back but not excised, after a long search; dissecting with the forefinger to the promontory of the sacrum, a bulging ampulla was felt, tapped and opened, with free discharge of meconium: The edges of the enteron were brought down and sutured to the skin, and a gauze plug introduced; the whole operation required one and one-quarter hours.

Dilatation with bougies was carried on for two months with satisfactory results, the bowels moving well; then the mother did not come for several weeks, and finally turned up with the baby in a sad plight. The end of the bougie had broken off and the rough end had been pushed into the bladder through the deep urethra. Most of the urine passed through the contracted rectal scar; much of the feces through the penis. The abdomen was tense and distended; the child very ill, vomiting everything.

Again a long median incision was made under ether; the rectum was reached, and a large rubber drainage-tube inserted into the sigmoid. The baby did well; feces ceased to pass through the penis, but a varying amount of urine passed *per anum.* This condition persisted for eight months, when the mother said urine ceased to escape from the anus; bougies were continued, and again the mother and child were lost sight of.

When the boy was nineteen months old the mother brought him in again; belly distended, scar contracted so that only a knitting needle could be passed up the bowel; feces *per urethram*; urine by rectum once more. A similar operation was performed with rapid improvement.

Examination by Dr. Brewster at the age of two years showed no escape of urine; the little finger could be passed with ease into the sigmoid flexure.

On September 21st, when twenty-seven months old, the boy died of diphtheria in the City Hospital.

Dr. A. Thorndike: One point in connection with the operation I think has not been emphasized, namely, that when you are dealing with a total occlusion of the rectum in these new-born babes you have practically the same condition as in a strangulated hernia, a total obstruction that brooks no delay, but must be operated on at once. I learned this to my sorrow in one case. A child twenty-four hours old came to the Infants' Hospital at nine o'clock at night. I expected to operate, but when I found that the anus admitted the finger about one inch and a half, that the light was poor and the child's condition good, I decided to wait for daylight. In the morning the child was all right; so I pierced a thin occluding membrane a little over an inch within the anus and dilated the opening. There was a copious evacuation of meconium, she took her food well all day and had two movements and was in good shape in the evening, but she died in the night suddenly. No autopsy was permitted. I believe that the longer an imperforate rectum is allowed to remain unoperated the worse it is, provided occlusion is complete. One should, however, be careful to discriminate between complete atresia of the rectum and the condition Dr. Mixter referred to as aberrant anus. They should not be classed together at all, and yet one hears of successful cases of operation for imperforate rectum or anus where a fecal discharge had existed for weeks by the vagina or urethra. We are learning by degrees to appreciate the difference in prognosis between the aberrant anus and the imperforate rectum.

Dr. C. A. Porter: I looked over the cases operated on at the Massachusetts General Hospital in the last fifteen years, and found 15 cases, of which 11 died before they left the hospital. Dr. Conant's case lived two and a half months, another sixty-one, and another twenty-three days, and the rest died within twenty-four hours. In only two cases were autopsies done, one, a case of imperforate rectum, which died from septic peritonitis definitely attributable to three punctures in the rectum through the peritoneal cavity, where the gut was finally found and sewed to the anus.

I should agree with Dr. Cobb that in the majority of cases the median incision behind would reach the gut, but if after fifteen minutes' search the gut cannot be found, one of two operations should be done: the intentional opening of the peritoneal cavity through the posterior incision, or an immediate incision of the left inguinal fossa, which I think gives the child a better chance than a long search through the posterior incision. In one case my father operated on no amount of search in the posterior incision could have found the gut, for there was occlusion of the small intestine in the middle of the ileum, where the gut was adherent to the umbilicus; below that point the whole intestine was much atrophied, though pervious, the rectal ampulla communicating with the anus by a tortuous channel barely admitting a biliform bougie.

Dr. Whitney: If I remember rightly, the bladder is developed from the allantois, which does not come in contact with the rectum, so that in the majority of these cases the opening would be into the vagina or urethra, and the communication of the rectum with the bladder must be extremely rare.

Dr. Elliot: I think the operation done by Dr. Cobb is the proper operation in most cases of imperforate anus. I have, however, had one case of absence of the rectum which was much like Dr. Conant's case. In such cases what is found is that the bowel ends in a great, flaring, blind sac, which fills the top of the pelvis and balloons up and fills the whole abdomen. In such a case — absence of the rectum — where the bowel is glued to the top of the pelvis, a dissection over the coccyx, even with the removal of part of the sacrum, does not reach the bowel. What I found in my case, and what Dr. Conant found, is that you cannot safely open the bowel from below. You feel a large bulging mass above; if you open into it from below you may open the peritoneum or you may open the bladder. The distance is too great for a safe dissection, therefore I think in such cases laparotomy is necessary. Dr. Matas has collected all the cases, and he finds there have been six such cases done where the two routes have been used in combination, and all these cases have recovered. At the time of his paper, however, there were only two cases alive. They died from other causes than the operation. My own case and one other were alive at that time. I think, then, that the reason for opening the abdomen in these cases where the rectum itself is nearly absent, and where the bowel is very high up, is that you may injure the bladder or may open the peritoneal cavity in the wrong place. My case was reported at the American Surgical Association in 1896, and I now have a sequel, which is not uninteresting. The child was two days old, and operated on in May, 1896, at the Massachusetts General Hospital. The coccyx and part of the sacrum were removed, but the bowel could not be reached from below. A laparotomy was done and the abdomen was found filled with the lower bowel distended. That was pushed down until it could be opened through the opening below. When it was opened it collapsed and could be pulled down, and was sewed into the opening by the side of the sacrum, as in a Kraske operation. The child recovered and did very well, but the scar of the artificial anus contracted and was dilated, under ether, in December, 1896. The child was born with a perfect anus, behind which was a blind pouch about one-fourth inch deep, which at the time of the operation I did not molest, as I made my incision entirely above it. In March, 1897, this artificial anus had again contracted so that I had to dilate it; after dilating it I dissected out the bowel from the Kraske wound and found that from the obstruction it had bulged down behind the artificial anus and had worked much lower than at the time of the operation. I therefore pulled it down and sewed it on to the natural anus and that healed, so I had the original relations entirely restored, and the child had moderate control of feces and comfort for the rest of its life. The child died in January, 1899, of nephritis, more than two and a half years after the operation, having grown fat, and having developed fairly well.

Dr. Wright: One of the cases to which Dr. Porter has referred came under my observation. The small intestine about midway in its course showed defective development, there being two blind pouches in close apposition to one another, and more or less adherent to the abdominal wall in the neighborhood of the umbilicus. The explanation is not clear. I should be very much obliged if some one would explain, on embryological grounds, how this condition could arise.

Dr. Whitney: That question is very interesting. There are several specimens in the museum where the small intestine has failed to develop midway in its course. From the adhesions in the neighborhood of the umbilicus mentioned by Dr. Wright it is possible that it is in some way connected with an omphalo-mesenteric condition, and in this case, instead of pulling out the gut, it has pulled it apart.

A CASE OF ACTINOMYCOSIS; OPERATION; RECOVERY.

Dr. Mixter showed a cured case of actinomycosis. This man had in the side of his neck a mass which we thought was an ordinary tubercular abscess, and on removing this thoroughly it was examined by Dr. Wright. I dissected out everything under the jaw, and here is simply the scar, such as you would see in the neck following any chronic abscess. In other words, this is a case of lump-jaw cured. I think it is interesting as showing that this thing can be cured. It was operated in September.

Dr. Cabot: How far beyond the visible edge of the disease does the infection actually extend?

Dr. Wright: In these cases I have seen and from what I know of the disease I should say it is not an infection which is like anthrax or some of the other infections, in which the extent of the disease is beyond our naked observation. I think one can tell with the naked eye very well how far the infection has spread.

THE PATHOLOGY OF ACTINOMYCOSIS.

Dr. J. H. Wright gave a brief account of some points in the pathology of actinomycosis. He considered that the disease is probably more common in man than is generally supposed, and that it often goes unrecognized. He referred to several cases that had come under his observation at the Massachusetts General Hospital during the past two or three years. In two of these the disease was superficial and localized, so as to be readily and radically removed. The methods of diagnosis by means of the microscopical examination of the characteristic granules found in the lesions were explained.

Dr. Whitney: We had known the disease in cattle, but I think this was the first instance in this immediate locality in which the disease was detected in man. As Dr. Wright has said, it is very often associated with foreign bodies. In this case a fish-bone had apparently perforated through the intestine and was present in the abscess. In cattle it is supposed that portions of wheat or rye are driven into the gum and alveolar process, and this seems to be the favorite locality for its commencement. I think Ponfick first described the lesion in man, and in his cases there were extensive prevertebral abscesses. I have one or two photographs of cases in man of the disease of the face. The general resemblance of the appearances to leprosy or tuberculosis is evident.

Dr. Mixter: I have had two cases, one of which I have shown to-night and the other Dr. Whitney has alluded to. I opened what I supposed was an ordinary abscess, and presently Dr. Whitney said it was a case of actinomycosis. The case was that of a man of sixty with a small mass just above the umbilicus. This I opened and found this peculiar looking pus, and Dr. Whitney found it to be actinomycotic. I excised the whole mass, taking out the umbilicus and portions of the rectus muscle down to the peritoneum and found that the whole thing was adherent to the intestine and had to be separated. I tied off the omentum and cut it away from the intestines so that I left only a little of the mucous membrane and did intestinal suture. Dr. Whitney hardened the mass. The interesting part is that in this mass were these two fish-bones which you see projecting. These had perforated through from the bowel. At the time of the operation I said before I began: "Gentlemen, this looks like a skewer abscess in a dog." Dogs are likely to get skewer abscesses from swallowing wooden skewers. The dog swallows these sharp wooden skewers in pieces of meat and becomes sick, if he does not die. Sometimes on the surface of the abdomen or elsewhere will appear a lump which will break, and out of it comes the skewer and the dog gets well. This thing was suggested to me. It was a perforation by a fish-bone. In this case the actinomycosis probably was not present in the fish-bones when they were eaten, but I suppose some of the actinomycotic tissue was taken into the stomach, and, finding this wound in the intestine, produced this thing. This mass was removed in 1894 or 1895. I had a letter from the man this last week. He said he was perfectly well except the hernia at the site of the operation; it was impossible to draw the wound together. But he is alive and well after four or five years and with this comparatively deep-seated process.

The man you just saw is a patient I saw with Dr. Swan, of Stoughton, and the abscess had been opened and had kept on discharging. It was supposed to be an ordinary tubercular abscess. I took him into my service at the Massachusetts General Hospital, and whether or not at the time of the operation we had the pus examined I have forgotten; at any rate Dr. Wright found these masses. It was a well-marked case and perhaps answers the question Dr. Cabot asked as to how far this disease extends, whether farther than you can see it. I curetted the thing fairly well and began to dissect out the base, and in the outlying tissue I took out where it looked inflamed Dr. Wright found absolutely nothing: it was only in the more softened parts. The thing healed up by granulation and there has not been any sign of recurrence.

Dr. J. W. Elliot reported several

CASES OF ACTINOMYCOSIS.

I have had several cases of actinomycosis in my hospital service. I have had one case like Dr. Mixter's fish-bone case. I opened an abdominal abscess which was filled with a peculiar material, finally a second operation was done and a fine-tooth comb came out in a mass of fibrous tissue. The thing looked different from anything I had seen before; I knew it was not an ordinary abscess, and I have little doubt that it was actinomycosis. I have had three other cases which were proved by the microscope to be actinomycosis, which shows that the disease is not very rare. The first case is the case Dr. Mallory discovered at the autopsy. That case I operated on for necrosis of the rib and I noticed a cavity in the chest full of what I supposed to be tuberculous material. It was packed with iodoform gauze and I never got to the bottom of it. The man finally died at the City Hospital, and Dr. Mallory discovered at the autopsy that it was actinomycosis. Another case Dr. Wright has already referred to — actinomycosis of the liver. I was called to the medical ward to see a man with a very high evening temperature with morning remissions, with evidently trouble in the liver. The liver was enlarged and felt very hard; I thought it might be cancer, but I had never seen cancer of the liver make such violent constitutional disturbance. Dr. Scudder, taking my service, made an exploratory incision, found nothing to attack and closed the incision. Later abscess of the liver developed, pointed and was opened. Dr. Wright made the diagnosis of actinomycosis from what came out, and the patient died practically of abscess of the liver.

The last case is a most interesting one clinically, and in every other way, as the man is now alive. Two years ago when I came on duty I found a man who had been in Dr. Homans's service, but Dr. Homans had not operated on him. He had one of those troublesome sinuses near the anterior superior spinous process of ilium, going down into the abdomen, which all surgeons dread to see because suggesting disease of the sacro-iliac synchondrosis, and that is what I supposed it was. I laid this sinus open and found that it led to an enormous cavity of actinomycosis, which I proceeded to clean out, regardless of its extent. I found everything was mushy near the opening, and I was led on from bad to worse, laying this sinus open deeper and deeper and finding this mushy tissue all over the right side of the abdomen, until before I had finished the operation I had removed the whole abdominal wall on the median line as far up as the umbilicus and out beyond the anterior superior spine down to Poupart's ligament, and up nearly as high as the rib on the side; the whole side of the abdomen was taken away and there must have been nearly a quart of mushy tissue scraped out. The disease was found between the intestines and had made an opening into the small intestine. While we were at work Dr. Wright reported it was actinomycosis, so we went on with more vigor and determination. It had extended all round the iliac artery, which seemed to be the only tissue in the region to resist its progress. We scraped the psoas muscle, took out the appendix and scraped the cecum and finally packed with gauze. The man recovered with fecal fistula, and about six months afterward I found that the disease was not returning deep down, but was returning back in the loin, so we etherized and scraped away another large mass of this disease. This time the scraping started where I left off in the loin and went back into the side. It had invaded the fatty tissues especially. By that time I had learned how the disease looked and could easily distinguish the diseased tissue from the sound. There were almost characteristic little holes of broken-down tissue which at first looked like tuberculosis. We stopped the disease in that direction by deep scraping. He recovered from that, and passed into the hands of Dr. C. B. Porter, and Dr. C. A. Porter has followed up the case and will tell us how he is now. The disease has already lasted about three years and I understand that he is now travelling in Europe.

Dr. C. A. Porter: I have not seen him for nine months. When I last saw him he was out, fairly well nourished, able to eat very well, his bowels moved well, though discharge from the fecal fistula continued. A little while before that visit my father found that the discharge from the granulation tissue still contained actinomyces. He went abroad, not wishing any further operation done.

I will speak of one other case that came to my notice as the result of Dr. Wright's lectures on this organism. I had been searching almost all summer among the alveolar abscesses in the out-patient department for actinomycosis; finally I found one which presented the appearances of an ordinary alveolar abscess which did not open on the outside. On opening the abscess and examining the pus the characteristic appearance was found. I excised the tumor afterwards and there has been no return. The man had broken his jaw six months before, and in all probability the organism entered through the fracture of the jaw and this small tumor developed six months afterwards. The process was quite circumscribed, the walls unusually dense and hard, on section no organisms were found in the granulation tissue, though several small clumps, the size of a pin-head, in the pus were unmistakable.

Dr. Wright presented several photographs of actinomyces showing the branching and general character of the filaments.

Dr. Monks: I have two specimens to show. The first one is a loop of intestine, part of which has been strangulated for eighteen hours. There was nothing remarkable about the case or the operation, except that the bowel was of a dark cherry-red color when strangulated, but, on relieving the constriction, the normal color at once returned. The Halsted method was used for radical cure. Before the man came out of his ether fully he tore off his bandage. Another one had to be put on. The next morning at nine o'clock he suddenly died. An autopsy was held by Dr. Mallory, who examined very carefully all the organs. The only abnormal condition found was edema of the lungs, and this, in the opinion of Dr. Mallory, was the cause of death. Everything about the field of operation was apparently normal. The lung edema may have had some connection with the anesthesia, but this is not certain.

The second specimen was removed by autopsy from a man upon whom I had done an intestinal anastomosis two years and a half previously.

The receipts of the bazaar in aid of the Charing Cross Hospital, London, last week were £13,500.

Medical Progress.

REPORT ON THE DISEASES OF CHILDREN.

BY T. M. ROTCH, M.D., AND A. H. WENTWORTH, M. D.

VALUE OF THE SIGN OF KERNIG IN THE DIAGNOSIS OF MENINGITIS.

NETTER[1] calls attention to this phenomenon, which was first observed in 1882 by Kernig, of St. Petersburg, and which was subsequently confirmed by Henoch, Ball, Blümm and Friis. It is elicited in the following way: The patient is placed in dorsal decubitus, care being taken that the legs are relaxed and fully extended at the knees. When the child is raised to the sitting posture it is found that the knees are more or less flexed, and, despite all efforts, cannot be completely extended on account of contracture of the posterior muscles of the thighs. In some cases the angle made by the thigh and the leg is a right angle, and in no case has it been found to be greater than 135° or 140°. Complete extension becomes possible when the patient is put upon the back again. According to Netter's observations in 46 cases of meningitis of whatever nature, this sign was wanting in but five cases, or about 10 per cent. It has not been observed in other conditions, having been found absent in numerous cases of typhoid fever, pneumonia, acute articular rheumatism, chorea, cerebral affections in infants, erythema nodosum and similar diseases. Netter believes that the presence of this sign confirms the diagnosis of meningitis when the symptoms are obscure, and suggests a latent meningitis when it is the only symptom present. Two cases are quoted. One was a clear case of typhoid fever, but Kernig's sign was present. The patient died of a perforation, and the autopsy revealed the presence of a meningitis due to the staphyloccocus aureus, together with the intestinal lesions of typhoid fever.

A second patient presented Kernig's sign, with slight symptoms of meningitis. Lumbar puncture was made but withdrew no fluid. After a remission of ten days fever reappeared, and a fluctuating mass was discovered over the sacrum. This was incised and the pus was found to contain the meningococcus. The infection had spread from the spinal canal, following the track made by the needle. The presence of meningitis was thereby established. All varieties of meningitis are said to produce this sign, including tubercular meningitis, secondary forms, and cerebro-spinal meningitis.

THE SYMPTOM OF BOLOGNINI IN MEASLES.

A. Koeppen[2] refers to a symptom described some years ago by Bolognini, as existing in measles. This consisted in a peculiar sensation of friction, felt when gently rubbing the tips of the fingers over the surface of the abdomen with gradually increasing force. This phenomenon, which, according to Bolognini, could be felt from the prodromal period well on to the end of the disease, was considered to be due to a morbillous eruption upon the peritoneum, and he considered that it offered a diagnostic sign of measles.

Recently, Koeppen had opportunity to control the observations in the course of an epidemic of measles, during which he specially examined 316 children, several of them on more than one occasion. The symptom of Bolognini was observed in only 154 of these patients. Moreover, the author has been able to convince himself that the phenomenon consists not in a sensation of friction (*frottement*) but rather in a fine crepitation, which recalls that given by subcutaneous emphysema, and seems to be due to the presence of bubbles of gas in the intestines. Indeed, most of the children in whom Koeppen found this symptom were suffering from diarrhea, with foamy stools.

Finally, the author has observed this symptom, though to a less marked degree than in measles, in children suffering from digestive troubles and who were free from measles. In healthy subjects he has never observed the phenomenon.

It follows from these later observations that the symptom observed by Bolognini, although frequently present in measles, cannot be considered as a pathognomonic sign of the disease.

THE SPECIFIC ORGANISM OF VACCINIA.

A. F. Stanley Kent[8] publishes the result of further studies upon the organism discovered by him in the tissues of the vaccine vesicle in 1894. This organism was described as a bacillus, exceedingly minute, measuring a bare micron in length; it appeared to occur, as a rule, in pairs, joined so as to form dumb-bells, not true diplococci. The individual bacilli were very slightly greater in length than in breadth. The bacilli occurred not on the surface, or, as far as could be ascertained, among a variety of organisms which were present in the superficial portion of the vesicle, but were deeply seated in large numbers and in practically pure culture in their special habitat beneath the line of incision.

The author's later studies have been devoted to elaborating a method of preparing pure cultures of this organism; investigating its staining properties; and conducting inoculation experiments with the cultures. He has succeeded in proving that in the organism described as the diplobacillus vacciniæ is found a virus which occurs in the vesicles (and tissues surrounding them) of ordinary vaccinia; that this organism has special morphological characteristics and staining reactions. Pure cultures of this organism inoculated into susceptible animals give rise to vesicles which are described as being indistinguishable from the vesicles produced by vaccine lymph. Animals thus injected do not react when vaccinated with active vaccine lymph. Sections through the vesicles thus produced are found to contain the organism in large numbers. These organisms exhibit the same morphological character, staining reactions and distributions in the tissues, as the organisms originally found in the vesicles of typical vaccinia.

THE VALUE OF METALLIC PERCUSSION COMBINED WITH AUSCULTATION IN THE DIAGNOSIS OF PLEURAL EFFUSION IN CHILDREN.

Moussons[4] calls attention to metallic percussion with auscultation (the coin test) in the diagnosis of pleural effusions in children, and considers it a most valuable means in distinguishing between the dulness due to pleural effusion and that depending upon pulmonary consolidation.

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[1] Société Medicale des Hôpitaux, July 22, 1898; American Journal of Medical Sciences, February, 1899.

[2] Centralbl. f. innere Medicin, 1898, No. 26, S. 673; American Journal of Medical Sciences, February, 1899.

[3] Lancet, December 17, 1899, p. 1,616; American Journal of Medical Sciences, March, 1898.

[4] Revue Mensuelle des Maladies de l' Enfance, January, 1889; American Journal of Medical Sciences, April, 1899.

The value of the coin test in adult patients in conditions other than pneumothorax has already been investigated by Pitres, and later by his pupil Sieur. Their observations have shown that when the lung is healthy the sound transmitted to the auscultìng ear is obscured, smothered, without metallic timbre. In the presence of an effusion in a pleural cavity free from adhesions, the transmitted sound has a clear, sharp, metallic ring.

Congestion of the lung and inflammatory or neoplastic consolidations fail to give the coin test in its purity. The same is true of foci of broncho-pneumonia or of tuberculosis, infarcts, encysted pleurisies and effusions into the pericardial cavity. Not only may the presence of fluid be recognized but the upper limit of the effusion can be detected in pleuro-pneumonia and in pleuritic effusions. The author has devoted several years to the study of this test as applied to young infants, with the hope of proving its value in a class of cases which offers greater difficulties in diagnosis than do similar conditions in the adult. The results have demonstrated to his satisfaction that this test constitutes a very valuable addition to the ordinary methods of diagnosis. He finds that in the young child, as in the adult, the metallic click is muffled and loses its ringing timbre in traversing the healthy lung. The percussion should be made more gently than in the adult, and the non-auscultìng ear should be stopped. The same quality in the transmitted sound is to be observed with broncho-pneumonia and croupous pneumonia. In these cases auscultation is made at the point where the vesicular murmur is suppressed or replaced by râles (whether dulness be present or not), the percussion being practised at a point on the hemithorax diametrically opposite. Not only is the sound impure and without metallic ring, but the sound of the stroke itself is enfeebled, and is notably more muffled than on the healthy side; sometimes it disappears altogether. In the presence of pleural effusions the coin test was very clear in four out of seven cases, and in the three remaining cases was clearer than on the healthy side, but lacked the silvery quality.

In six cadavers of young infants, varying in age from a few days to one year, with one of a child of six or seven years, artificial pleural effusions were produced with varying quantities of fluid, and the coin test compared with the results obtained before injection. In no case was the metallic timbre observed before the fluid was injected, while in only two instances after injection did the sign fail. In one of these the sound was clearer, but its metallic quality was not distinct. In both of these cases the test was successful after injecting larger quantities of fluid (above 200 grammes). (When one considers the frequent confusing results offered by physical examination of the chest in young children, even when fluid is present in considerable amount, the value of an additional physical sign, though not absolutely pathognomonic, cannot be too highly estimated. It is to be hoped that more extensive clinical experience will confirm the promises of Moussons's observations.)

THE ANEMIAS OF EARLY INFANCY.

R. Fischl[5] does not believe that it is possible to diagnosticate the nature of the anemias of early infancy by means of the microscopic examination of the blood. His reasons are briefly as follow:

During the early period of infancy the leucocytes present such polymorphous characters that were they found later in life they would have a pathological significance. No such significance can be attached to them in early infancy.

With regard to the erythrocytes, the great variation in size must be regarded as physiological in the early weeks of life.

Erythroblasts, which exist normally in the blood of the fetus, diminish progressively in number toward the end of fetal life, but small numbers of them are always present in the blood for a short time after birth. The appearance of large numbers of them in the blood of infants indicates abnormalities in the hemapoietic system. In general, the gravity of the anemia bears some relation to the number of erythroblasts in these cases, but this does not permit conclusions to be drawn relative to the nature of the disturbance.

There is no characteristic hematologic picture at this age by means of which one can differentiate anemias. All that can be determined by microscopic examination of the blood is the existence and the severity of the anemia.

It is not possible to conclude from the examination of the blood that this or that part of the hemapoietic system is abnormal, because the organs which take part in the formation of the blood during fetal life can continue to perform their functions to some extent for several months after birth.

On the other hand, the organs which in later life take part in the production of the blood have not reached their complete development in early infancy, and this helps to complicate any deductions which may be made from the appearance of the blood at this time.

The same uncertainty holds good in regard to the number and size of the erythroblasts and their nuclear division; to the appearance of poikilocytosis; and to the polychromatophilic character of the leucocytes. These appearances simply warrant deductions as to the degree of anemia present.

At the present time much of the diagnostic value which was formerly attached to the histological examination of the blood is lost, and it is necessary to search in some other direction for explanations of the blood changes.

Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

Meeting of the Section on the Practice of Medicine, Columbus, Ohio, June 6, 7 and 8, 1899.

FIRST DAY.

In a short address the Chairman, Dr. Frank Billings, of Chicago, called attention to the advantages of preliminary epitomes and was inclined to advise that a compulsory abstract be in the hands of the Secretary by the first week in May.

The first paper read was by Dr. N. S. Davis, of Chicago, and was entitled

WHAT ARE THE PHYSIOLOGICAL PROCESSES OR FUNCTIONS THAT IMPART TO THE LIVING HUMAN BODY ITS VITAL RESISTANCE OR IMMUNITY TO THE ACTION OF THE TOXIC AGENTS TO WHICH IT MAY BE EXPOSED; AND HOW CAN THAT BE AIDED IN THE TREATMENT OF DISEASE?

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[5] Jahrbuch f. Kinderheilk, vol. xlix, p. 26, 1899; Revue Mensuelle des Maladies de l' Enfance, Mars, 1899, tome xvii.

In discussing the subject Dr. Davis touched briefly upon physiologic processes by which the living body maintains its vitality and metabolism in health, how these natural processes are affected by the chief causes of disease, both chronic and acute, and the chief means by which the physician may effectually aid the natural processes in restoring health after disease or disorder has been produced. He strongly advocated the reinforcement of the *vis medicatrix naturæ*.

A COMPARISON OF THE VARIOUS METHODS OF ESTIMATING HEMOGLOBIN

was the title of a paper read by DR. B. M. LINNELL, of Chicago, Ill. The author considered the various color tests, and basing his observations on a number of cases, pointed out the errors of both the Fleischl and Gower instruments. He also spoke of the variations between the different eyes and between the same eyes at different times and under different circumstances. He strongly advocated the approximate estimation by known dilution of the examined blood and considered by far the most accurate Hammerschlag's, or the specific gravity method, in his experience. The normal specific gravity, according to his method, was 1.0605 in healthy adult life. He believed that the variations in hemogloblin were not sufficient to interfere with the specific gravity tests, and also showed a convenient case for applying this method.

In discussion, DR. JUDSON DALAND, of Philadelphia, remarked that there is a certain amount of error in the Fleischel instrument, possible by its delimiting the field of observation and comparison by a perforated cap over the cylinder. He considered the Gower instrument subject to very wide ranges of error and advocated a series of comparative tests by the three different methods.

DR. GEORGE DOCK, of Ann Arbor, Mich., corroborates the testimony as to the efficiency of the Hammerschlag method and condemned the Gower instrument. He described an instrument already on the market similar to that suggested by Dr. Deland, for limiting the field of vision, and recommended an improved pipet, in which definite quantities could be employed. This instrument, however, was very expensive and no better than the specific gravity apparatus.

DR. H. D. ARNOLD, of Boston, directed attention to the importance of the specific gravity method in cases of chlorosis, in which the blood has a very low specific gravity.

DR. LAMBERT OTT, of Philadelphia, then read a paper on

THE SPREAD OF DISEASES IN SCHOOLS, AND ITS PREVENTION.

He contended that most children's diseases are obtained in the intercourse of school life, by kissing, the common use of drinking-cups, the habit of putting pencils in the mouth, etc. The diseases usually spread in school are diphtheria, scarlet fever, whooping cough, measles, varicella and variola or varioloid. To prevent the spread of disease in schools he urged that children convalescent from contagious disease should not be allowed to return to their studies until a certain lapse of time. For diphtheria he fixed four weeks from the inception of the disease, with an additional week in outdoor life, and quite as long a period for scarlet fever. For measles at least two weeks should elapse from the inception of disease, and one week in outdoor life, before the child should be permitted to return to school. Children convalescing from small-pox should not be allowed to return before the expiration of two months from the onset of the disease, and should spend also at least one week in outdoor life. So long as there is a vestige of the symptoms, children convalescing from whooping-cough should be kept away from school. Teachers should be taught to recognize the contagious diseases and by what means they are spread, and children should be instructed in simple rules in hygiene. In all cities there should be a medical superintendent of public schools, and a trained corps of assistants to trace sources of contagion, etc. The author also spoke of the laws of Pennsylvania relating to small-pox and vaccination.

In discussion, DR. ARNOLD, of Boston, described a very successful method of medical examination of the schools in that city by district physicians. He also thought that the period of absence from school prescribed by Dr. Ott was certainly not too short.

DR. J. H. MUSSER, of Philadelphia, considered the subject of such importance that he moved that a committee of three, with Dr. Ott as chairman, be appointed to bring it before the general session, which motion was unanimously carried.

DR. REYBURN, of Washington, believed that a partial remedy for the conditions considered might lie in forbidding children from being sent to school before the age of seven. No child during the period of its most rapid development should go to school for more than one session of three hours a day.

DR. BRAGDON, of Minneapolis, and DR. AXTELL, of Denver, also participated in the discussion.

DR. T. N. MILLER, of Rockford, Ill., in a consideration of

CEREBRO-SPINAL MENINGITIS,

presented the bacteriology and clinical types, the diagnosis and prognosis of this affection, and believed that it was not contagious. He considered symptomatic treatment useless, and hoped for the discovery of antitoxin. He advocated ergot and calabar in the early stages, with perhaps bromides in children. He strongly advised against bleeding, even though it were apparently indicated. Opiates are of great use in all stages of the disease, and the continued use of iodides is advised. Counter-irritation is of value, but he had never used cold application. The best hygienic surroundings should be provided for the patient. The author presented a clinical report of two cases of markedly intermittent type. The infection was evidently through the nasal chambers, and was accompanied by mucopurulent discharge, in which were found large numbers of the diplococcus of intracellularis meningitidis. He gave extensive descriptions of the post-mortem lesions.

DR. C. M. MILLS, of Illinois, spoke of the rheumatic nature of the disease.

DR. J. C. WILSON, of Philadelphia, dwelt upon three points: (1) The importance of Kernig's sign; (2) the isolation of the patient, even though there is evidence to believe that the disease is not transmissible, if it is proven of micro-organismal origin. Certainly any other means of procedure is fraught with danger; it is far better to be on the safe side; (3) the overwhelming importance of opiates in large doses often repeated.

In the discussion DR. DIDAMA, of Syracuse, N. Y., gave a history of the successful use of opium many years ago by the advice of Dr. Da Costa.

Dr. Musser, of Philadelphia, called attention to the value of lumbar puncture as a diagnostic feature and therapeutic measure. It is unattended with danger, is of the utmost importance for early diagnosis, and often gives great relief. He regarded laminectomy as a rational procedure in cases in which there was profound sepsis, or in which there is great pressure. He considered opium the only drug of value.

Dr. H. Y. Fletcher, of Baltimore, had had an opportunity of studying a number of cases in Dr. Osler's clinic and confirmed Dr. Musser's view, but added that although there was evidently relief from the distressing symptoms and temporary prolongation of life, in no case in which lumbar puncture was used did recovery ensue. He called attention to the development of severe arthritis as one of the earliest symptoms, and placed on record the discovery of the causative organism in the joints and in the blood.

Dr. Scott, of Iowa, spoke on the infectious nature of the disease.

Dr. Mathews, of Missouri, had never seen evidence of contagiousness in an extensive practice. He believed that in its treatment sodium salicylate should be combined with opium, on accouut of the analogy of the disease to rheumatism.

Dr. Bradwell, of St. Louis, Mo., had made bacteriologic examination in a number of cases, and with a single exception found the diplococcus intracellularis. In one case he found the micrococcus lanceolatus and he believed this case to be of sporadic nature. He emphasized the importance of Kernig's sign. He found Gram's method of differential staining to be very unreliable.

Dr. Rabbold, of St. Louis, Mo., confirmed the statements of the previous speaker, and spoke of two cases in which there was reason to believe the disease was transmitted. The mortality in St. Louis the last year was 81 per cent. He called attention to the fact that Kernig's sign appears early, and that difficult deglutition was a fatal sign.

Dr. Anders, of Philadelphia, cited one instance showing the non-contagious nature of the disease. However, he believed in isolation and he considered lumbar puncture as a most valuable diagnostic symptom. He was surprised to find in his consultation practice that almost invariably physicians used ergot instead of opium in treating cerebro-spinal meningitis.

In closing, **Dr. Miller** reasserted his belief in the efficiency of ergot in the early stages of the disease and opium throughout the course. He also emphasized the value of the iodides.

SECOND DAY.

The following papers were read by title:

"Illuminating-gas Poison," by **Dr. W. B. Hill**, of Milwaukee.

"Have We in Nature a Basis for a Science and Art in Medicine?" by **Dr. H. J. Herrick**, of Cleveland, Ohio.

"Primary Testicular Mumps," by **Dr. Landon B. Edwards**, of Richmond, Va.

"The Fundamental Principles of Etiology and Therapy," by **Dr. Elmer Lee**, of New York.

"Hodgkin's Disease," by **Dr. S. E. Stewart**, of Topeka, Kans.

"The Vascular Changes in Bright's Disease," by **Dr. James Tyson**, of Philadelphia.

Dr. Arthur R. Elliott, of Chicago, Ill., read a paper on

TREATMENT OF THE HEART IN CHRONIC INTERSTITIAL NEPHRITIS,

in which he reviewed the cardiovascular changes in granular kidney, and spoke of the friendly offices of the heart in compensating for the diseased organ. He believed that the extrarenal changes were not sufficiently considered in the routine treatment of nephritis. He considered it certainly narrow-minded medicine to focus attention purely on the renal symptoms, and in fact he considered the condition of the heart and bloodvessels sufficient evidence in itself of the renal changes. He dwelt upon the importance of mild exercise by the Scott method to reduce blood pressure. Hygienic and dietetic treatment are of great value. Interference with the circulatory system by drugs when compensation is unbroken is vicious practice. The most important drugs in this disease are aperients and vasodilators. Nitroglycerin is especially efficient and the iodides are valuable. The vasoconstrictor properties of digitalis are especially to be guarded against.

In discussion, **Dr. R. H. Henry**, of Illinois, believed in the efficacy of mercury and the iodides.

Dr. Norman Bridge, of Los Angeles, said that although theoretically we should expect some direct curative effect from the iodides, clinical experience has not substantiated this thought. He pleaded for investigations to discover a curative agent for interstitial nephritis. He had seen patients die from toxemia before compensation was ruptured.

Dr. Alfred Stengel, of Philadelphia, set forth that interstitial nephritis was a general disease to be met with by general remedies. He strongly advocated the Scott treatment and believed that the decrease in blood pressure was greater than supposed. The continued use of small doses of mercury is permissible, and he believed sodium iodide is borne better than potassium salt.

Dr. Wells, of Chicago, considered that a reduction of the daily work was necessary, and emphasized the importance of limiting the amount of nitrogenous food.

Dr. Jenkins, of Iowa, dwelt upon the importance of nitroglycerin.

A CAUSE AND DIFFERENTIAL DIAGNOSIS OF ACCIDENTAL HEART-MURMURS.

Dr. George W. Webster, of Chicago, read this paper. Every theory or fact in physical diagnosis shou'd be, not the violation, but the realization of a physical law; arguments were given tending to show that no single theory accounts for all accidental murmurs; there is a probability that all accidental murmurs are, like those of organic disease, due to the production of "fluid veins." This may be due to temporary dilatation of the pulmonary artery, relative insufficiency of the tricuspid or the mitral valves, and possibly other causes. The diagnosis rests on: (1) The exclusion of organic disease as shown by (*a*) absence of a history of antecedent casual disease; (*b*) absence of the results of valvular defects as evidenced by hypertrophy and dilatation, or by damaged or broken compensation. (2) By (*a*) history of such disease or conditions as acute intoxications, chorea, the anemias, etc., with which these murmurs are frequently associated; (*b*) the characteristics of the murmur as shown by rhythm, point of maximum intensity, area of audibility, posture, exercise, etc.

THE TRANSMISSION OF SYSTOLIC MITRAL MURMURS, WITH SPECIAL REFERENCE TO THE NATURE OF THE SO-CALLED ANEMIC MURMURS.

DR. HORACE D. ARNOLD, of Boston, read a paper under this title. The question of the nature of the so-called functional murmurs has been many times discussed, but the diversity of opinion among the best authorities still leaves it among the unsettled problems. Any contribution to our knowledge, however small, is welcome. The discussion has turned chiefly on the point of maximum intensity of these murmurs — their distribution has not received the attention it deserves. We shall consider mitral systolic murmurs and their distribution; why they are heard at the apex; their transmission to the left from the apex and from the left side of heart; their transmission to the back; systolic murmurs (mitral and others) over the "valvular" area; mitral murmurs in the second left interspace, and their distribution beyond this area; so-called "anemic" murmurs in the second left interspace and their distribution beyond — similar to mitral; illustrative cases.

DR GEORGE DOCK, of Ann Arbor, Mich., read a paper on the

USE OF QUININE IN MALARIAL DISEASES.

The author dwelt upon the importance of lessening the paroxysms of malaria on account of the disintegration of blood corpuscles. As we have a specific in quinine it is certainly our duty to use it. In this country 15 to 20 grains is usually the daily dose, and in practice it is better to give 15-grain doses at once, or 5 grains at short intervals, followed by 15-drop doses of hydrochloric acid. Small doses repeated several times a day are of avail only in the tonic treatment during convalescence. He advised that the best time for administration was in the stage of decline. For prophylaxis against relapses 10 grains of quinine every five or seven days should be given for several months. He believed that true malarial hemoglobinuria was quite uncommon and that many cases were so diagnosed incorrectly. Of course, quinine should not be used unless there was an absolute diagnosis of malaria.

In an article on

HYPODERMIC USE OF QUININE IN THE TREATMENT OF MALARIA,

DR. G. A. FACKLEY, of Cincinnati, after reporting 20 cases of positive malaria in which he had tried the hypodermic medication, condemned it as being successful in only 3 cases, while in the remaining 17 cases oral administration was successful. He attempted to explain the failure of the hypodermic method by the production of local irritation. He believed that the only indication was when the drug was rejected by the mouth or rectum.

In discussion, **DR. STOCKTON**, of Buffalo, suggested that as there was a distinct personal variance in the activity of gastric mobility and absorption, there should be no rules for the time of dosage for all persons alike.

DR. DALAND, of Philadelphia, grouped the failures of quinine under two heads: (1) When the drug was not absorbed; (2) when the diagnosis was faulty. He was inclined to believe that the drug should be given during the decline of the paroxysm, and advocated the preliminary use of calomel to further absorption.

DR. F. S. JOHNSON, of Chicago, spoke of the advantages of very deep injections and of the use of quinine by inunction. He gave an interesting case in which the oral method had to be abandoned for the injections on account of accompanying mental delusions.

DR. H. A. HARE, of Philadelphia, regretted that Southern physicians, who had by far the best opportunity to observe malaria, had not done more scientific work in the study of the disease. He dwelt upon the importance of the preliminary hepatic stimulants as by the use of the mercurials and acids. He called attention to the value of blood-examination in differentiating the disease from typhoid fever. He considered hypodermic injections almost useless on account of the precipitation by the alkaline fluid of the tissues, and local inflammation. In its place he would use the normal solution of quinine injected directly in the veins. He spoke of the dangers to the heart of large doses of quinine.

DR. DUNHAM made a plea for the hypodermic injection of the double salt of quinine dissolved in two parts of water, and advised to keep it out of the muscles.

DR. J. C. WILSON, of Philadelphia, in answering Dr. Hare's objection to the hypodermic injection, said that the blood, as well as the rectal secretions, was alkaline, and that although quinine was first precipitated it was afterward absorbed. He preferred the hydrochlorate of quinine, and thoroughly believed in the importance of the hypodermic method in many cases of malaria of long standing.

In closing, **DR. DOCK** pointed out that the deep hypodermic injections were superior to superficial ones, and that, after all, the method was not generally useful.

The following papers were read by title:

"Syphilis of the Liver," by **DR. GEORGE L. COLE**, of Los Angeles, Cal.

"Frequency of Subcrepitant Râles in Healthy Chests," by **DR. RICHARD C. CABOT**, of Boston.

"Traumatic Neurosis Without Ligation," by **DR. SIDNEY A. FORD**, of Boston.

"The Superstitious Theories and Treatment of Both Extremes of the Century," by **DR. ALONZO GARCELON**, of Lewiston, Me.

"Treatment of Aneurisms by Gelatine Injections," by **DR. T. B. FUTCHER**, of Baltimore, Md.

DR. EDWARD F. WELLS, of Chicago, in a general introductory paper covering the field of pneumonia broadly, opened a

SYMPOSIUM ON PNEUMONIA.

He proposed the questions: Is the pneumococcus so often found in the mouth identical with that found in the lungs? How does it enter and what measures may prevent or destroy its virulence? He considered a pulse of 140 a dangerous sign, as well as dyspnea and the rising and falling of the trachea. He has collected 350,000 cases in which he found the high mortality of 21 per cent. He spoke of the efficacy of venesection in plethoric persons, and considered that in these cases the procedure had no satisfactory substitute. He also advised a simultaneous subcutaneous injectior in the chest of a normal saline solution or the use of an enema of the solution to replace the quantity of blood drawn. From the beginning to the end of the disease, vasomotor paresis must be met with by strychnia, digitalis and morphine.

THE PNEUMOCOCCUS.

This paper by Dr. **Gustav Futterer**, of Chicago, Ill., was read by title.

Dr. **Alfred Stengel**, of Philadelphia, read a paper on

THE BLOOD IN PNEUMONIA.

He limited himself to the clinical examination practical to general physicians, omitting special examinations, such as bacteriology and the estimation of the quantity of fibre in the blood. He called attention to the presence of a chemotactic form of leucocytosis which had an important relation to the diagnosis.

SYSTEMIC INFECTION IN PNEUMONIA, THE COMPLICATIONS AND THE SEQUELÆ.

Dr. **Robert A. Preble**, of Chicago, read this paper and considered as complications: (1) *Mechanic* plugging of the bronchi; effect on symptoms and physical signs; dilatation of the heart; jaundice; theories of causation. (2) *Infectious:* Septicemia, pleuritis, endocarditis, meningitis, pericarditis, arthritis, miscellaneous mixed infections. (3) *Toxic:* Delirium; renal changes. In the sequels he classed delayed resolutions, nephritis, induration, neuritis, abscess, gangrene.

Dr. **Hobart A. Hare**, of Philadelphia, read a paper on

THE TREATMENT OF PNEUMONIA.

He believed that the abortive treatment by venesection, aconite, and veratrum viride was applicable only in a few vigorous cases and in the early stage. Heat and cold upon the chest are useful sedatives, and small doses of aconite and opium are permissible. Later on in the disease, venesection should not be used on account of the prolonged after-effect. He advised cold sponging and ice-bags to the head and over the heart. Antipyretic drugs are dangerous, and rarely, if ever, serviceable. As a rule, a failing pulse indicates sedatives rather than stimulants. He believed digitalis was given too often and in too large doses, and often in ineffective preparations. Belladonna was strongly recommended in vasomotor relaxation. He had little experience in suprarenal extract. He cautioned against the promiscuous use of strychnia as a stimulant. It should be used at the proper moment and then heroically. Such substances as alcohol and coca are far better for continuous administration. Nitroglycerin is useful in the aged and when the arterial tension is great; the value of oxygen-gas is problematic.

In discussion Dr. **Musser**, of Philadelphia, called attention to the fact that pneumonia is a systemic affection rather than a lung disease. Very often, when there is complete absence of physical signs, we have intense symptoms of general infection. He referred to aberrant forms of pneumonia, and called attention to cases in which there was striking simulation of appendicitis. He believed that on account of its insidious onset pericarditis was often overlooked, and remarked on the occurrence of localized areas of intralobar pleural infection. He dwelt upon the value of dry cups in the treatment, and spoke encouragingly of the local application of cold cloths, not only for the local effect but for the relief of the general toxic symptoms. He had never used aconite or veratrum viride and doubted their indication. A most important point is the maintenance of the secretory functions by laxatives, diuretics and diaphoretics. Large amounts of water should be given. In all toxic affections, so long as the urinary secretion is abundant, there is no cause for alarm. He advocated the use of strychnine in emergencies and nitroglycerin in the later stages, but had seldom used digitalis.

Dr. **Stockton**, of Buffalo, confirmed Dr. Stengel's statements that leucopyemia does mean a fatal issue. He cited an instance of pneumonia of the relapsing type. He did not believe in the use of stimulants if they could be possibly avoided early in the disease, as this prevented their later employment. He believed in large doses of calomel to rid the system of the toxic poisons. When needed in critical cases strychnia is indicated in large doses hypodermically, and so given has saved many lives. He took exception to Dr. Hare's fear of the nervous symptoms so induced and if thought necessary he combated them with opium.

Dr. **George Dock**, of Ann Arbor, believed in watching carefully the treatment of pneumonia, and added his voice to the value of strychnia and calomel. He believed the local application of ice-bags over the affected parts in previously healthy people far better than the use of the cold bath, and urged more general adoption. Heat does not relieve the pain so well as cold, and poultices are not always efficient, and are very inconvenient. He laid great stress upon the use of the aspirating needle and early bacteriologic examination in the diagnosis of pleural involvement and in forming the prognosis.

Dr. **A. M. Holmes**, of Denver, mentioned that in Cripple Creek, Colorado, which is in a high altitude, there was great prevalence and high mortality of pneumonia, and it was customary as soon as the diagnosis was made to get the patient into the lowlands.

Dr. **J. M. Anders**, of Philadelphia, said that a serious phase of this question was the fact that while the mortality of typhoid fever and other infectious diseases has been steadily decreasing, that of pneumonia has been increasing. He strongly advocated bacteriologic examination of the sputum to differentiate between streptococcic and pneumococcic infection; in this way only can the proper use of any antitoxic serum be made. He has found a moderate leucocytosis, as a general rule, and has found that it may persist as long as twenty-four hours after the true crisis. He cited a case of relapsing pneumonia in which neither the pneumococcus nor streptococcus was found in the sputum, and inferred that the rare relapsing cases might be due to some other micro-organism. He approved of Dr. Hare's division of cases into sthenic and asthenic forms, although the former are rare in city practice. He considered moderate bleeding permissible in sthenic cases, and warned against the use of cardiac depressants. In the asthenic cases, he resorted to the hypodermic use of morphia and of the repeated dry cupping. He concurred with the other speakers in the value of strychnine, and believed that when once given it should not be withdrawn abruptly. Turpentine should be accorded a trial in cases of delayed resolution.

Dr. **H. B. Favill**, of Chicago, dwelt upon the fact mentioned by the other speakers that the disease was a general and not local infection. He believes that much was to be expected in the future from hydrotherapy.

In closing, DR. WELLS said that while there was no doubt that the dangerous symptoms of pneumonia pointed to general infection, he believed that the disease originated in the lung. He hoped for advances in the field of prophylaxis.

DR. HARE explained that he was clearly misunderstood in regard to his attitude toward strychnine. When it was needed, he believed in heroic doses, but the drug should not be used in small doses repeated for several days. If he could have but two means of combating the disease, he would select the ice-bag and the hypodermic injection of strychnine.

DR. G. BETTON MASSEY, of Philadelphia, made a

FURTHER REPORT ON THE CATAPHORIC TREATMENT OF CANCER.

Cataphoric insertion of nascent salts of mercury in a strength that will deluge interstitially a given tract of tissue or an organ, constitutes a therapeutic procedure of this author. Besides its application in massive dose, generally in association with nascent zinc salts, in the interstitial destruction of the malignant cells or germs of cancer and sarcoma, the method is applicable to the treatment of tuberculosis of accessible portions of the body and to many other conditions where an interstitially-driven germicide will be effective; all ulcerations, cysts, cavities and morbid structures being rendered permanently aseptic by the diffused materials, until perfect healing has been secured. Tissues subjected to the application, whether a small dose has been used or a massive one under ether, show the development of two distinct zones, that nearest the electrode being a zone of total necrosis, around which a line of demarcation subsequently forms, beyond which appears a zone of infiltration reaction, which shows much puffiness and redness for days subsequently, and within which there is evidence that stray malignant cells are killed and the physiologic resisting forces of the body roused. Details are given of cases of sarcoma and carcinoma, ten in all, that have been successfully treated by the method.

DR. G. M. GOULD, of Philadelphia, read a paper entitled

A FALLACY OF THE REST-CURE TREATMENT.

He described three cases which he had treated and in which the general physician or neurologist had ordered the rest-cure without any inquiry as to the existence of eye-strain. A potent and frequent cause of the neurasthenia, hysteria, denutrition, etc., of patients needing the rest-cure, is eye-strain, the symptoms of which are frequently not traced to the true cause and which is thus ignored in the treatment. Mydriasis in such cases, continued for a time, would not only prove a certain means of differential diagnosis, but as good a method of cure as the rest-cure itself.

In discussion, DR. MASSEY, of Philadelphia, took exception to the assumption that neurologists considered the rest-cure the proper treatment for neurasthenia.

In an article on

THE MEDICAL TREATMENT OF MOVABLE KIDNEY,

DR. ALFRED STENGEL, of Philadelphia, confined his remarks to medical measures for restoring the displaced organ. He considered two plans of treatment: (1) Overfeeding, to restore the necessary perirenal fat, which, however, was usually unsatisfactory. (2) The artificial support by an abdominal belt and pad. Most pads are improperly made. They should be so constructed as to exert pressure upward, backward and to the right, instead of directly upward, as is usual. The pad he uses is of kidney shape. He cited cases in which such a pad produced great relief.

In discussion DR. STOCKTON, of Buffalo, said that in thin persons with movable kidney and enteroptosis overfeeding was impracticable. As a rule a pad is unnecessary, often a bandage is sufficient. He suggested the addition of Swedish gymnastics to Dr. Stengel's plan of treatment.

ACUTE ENDOCARDITIS.

DR. W. A. NIELSON, of Milwaukee, read this paper.

The Nominating Committee made the following selections which were favorably acted upon by the section: For Chairman, Dr. George Dock, of Ann Arbor; Secretary, Dr. H. Y. Futcher, of Baltimore.

THIRD DAY.

DR. GEORGE BOODY, of Independence, Ia., read a paper on

TWO EPIDEMICS OF TYPHOID FEVER IN THE IOWA HOSPITAL FOR THE INSANE.

The author concludes that cases of inverted typhoid fever are comparatively rare. In two epidemics recently reported it occurred but once in 43 cases. Of the patients recovering from the aforesaid epidemics, 25 per cent. showed marked improvement in nutrition and muscular strength, while the remainder only reached their former condition, which it seems is a peculiarity in insane patients. Those who improved mentally showed a corresponding improvement in nutrition, which when the mentality returned to normal was remarkable. The author presents these cases as examples of the influence of the mind over nutrition and assimilation. Of the cases reported, nearly 17 per cent. all (afflicted with dementia) improved mentally but seemed to relapse, except in one case in which the improvement was somewhat prolonged; nearly 3 per cent. (afflicted with melancholia) made partial recovery, 5½ per cent. regained their former mental status.

A QUARTER OF A CENTURY'S EXPERIENCE WITH TYPHOID FEVER, WITH SPECIAL REFERENCE TO SOME UNSETTLED PROBLEMS.

DR. JAMES L. TAYLOR, of Wheelersburg, Ohio, read this paper. The author presents a contrast between accredited scientific opinions concerning typhoid fever as advocated formerly and those generally received to-day; how typhoid has displaced marsh fevers; different epidemics characterized by different types of the disease; the varying forms of typhoid; can the radically different types assumed in different epidemics depend on identical causes? Points of similarity between epidemics of typhoid and those of cerebro-spinal meningitis; greater severity of former typhoid epidemics; propagation of certain typhoid epidemics sometimes toward the source of streams instead of toward their mouth; in farming districts typhoid spreads without any possible dependence on water supply; rôle of Eberth's bacillus — some confusing effects of bacteriologic research; practical value of Widal's and other tests; an anomalous form of typhoid occurring since the influenza visitation of 1889; what points are of most value in determining prognosis.

Dr. Alfred C. Haven, of Lake Forest, Ill., read a paper on

A NEW BATH FACILITATING HYDROTHERAPY IN PRIVATE PRACTICE.

He gave a brief history of hydrotherapy, with the reasons for its use and prejudices against it. He has devised a new bath for use in private practice which consists of a canvas strap encircling the headboard of the bed, the ends of the canvas belt fastened by a simple catch so that the belt can be drawn taut. Another canvas belt of similar design is applied to the footboard, there are two rings in each canvas strip twenty-six inches apart; the water is contained in a rubber sheet, hemmed at both sides, in which slip ropes containing four snaps on their ends. The patient is rolled on the sheet, the snaps are caught in the rings and the tub is ready for the water. It is emptied by lowering one corner and completing by a rubber hose syphon. In his judgment such a portable apparatus leaves the practitioner no excuse for neglecting such a potent therapeutic means as hydrotherapy.

Dr. L. B. Roush, of New Haven, W. Va., read a paper on

THERAPEUTIC PRINCIPLES IN THE TREATMENT OF TYPHOID FEVER,

in which he stated that he considers that certain agents have a somewhat specific influence in lessening the serious effects of typhoid fever. He prefers to institute a moderately free catharsis, especially with calomel, although other cathartics may be used. The course is continued for the first six or eight days and changes the character of the stool; by it the toxemia is in a measure prevented and the symptoms greatly mitigated. In the further progress of the disease ammonium or sodium salicylate is given in solution of five-grain doses every two hours, day and night, throughout the course of the fever, unless the evening temperature falls below 102°, when the medicine is discontinued during the night. Sponging with water is necessary, the temperature of which he regulates according to the patient's feelings. Water and fruit juices should be freely administered; by far the best means of nourishment is milk, although it does not always agree with the patient. He believes that in most cases properly treated patients should get up rather than use the bedpan. Tympanites is considered evidence of continued multiplication of the typhoid bacilli and every effort should be made to avoid it. Catharsis, strychnine internally and turpentine stupes externally are to be preferred. The author claims that with his methods of treatment he has only had a mortality of 3½ per cent. in 143 cases.

Dr. E. C. Brush, of Zanesville, O., read a paper on

THE USE OF ACETANILID IN TYPHOID FEVER.

The cases reported are those of soldiers sent home last August and September from Camp Geo. H. Thomas, Chickamauga, Ga. They were treated in the Zanesville hospital. The only antipyretic used was acetanilid. The rule in using acetanilid was to give three grains every two hours when the temperature reached 101°. As soon as the temperature fell below 101°, the acetanilid was discontinued. Usually the patient would perspire and the temperature drop from one to two degrees after the second dose. A third consecutive dose was not needed often. The shortest course of the fever was twenty-four days, the longest thirty-five, with an average of thirty days. Only one case was fatal, death occurring in the fourth week from intestinal hemorrhage.

In discussion, Dr. Witherspoon, of Nashville, said that he believed that in Tennessee the fever is of different type, the temperature coming on suddenly without any period of incubation, accompanied with great prostration, the skin being moist rather than dry. There is general abdominal tenderness, the scaphoid belly and constipation rather than a mushy diarrhea,the fever runs a rather low and favorable course, there is no enlargement of the spleen or liver and the nervous symptoms are those of mild mania. He did not agree in the belief of the efficacy of purging and considered repeated administration of large doses of calomel very bad treatment on account of the risk of increased inflammation and ulceration of the intestine, the purge encouraging a rapid slough. The danger in the disease is from the toxic effect on the nervous system. The Brand treatment not only lowers the temperature but acts as a nerve tonic; acetanilid and other coal-tar derivatives are not safe on account of their effect on the vital resisting power of the patient.

Dr. Mills, of Illinois, said that he has been in the habit for many years of treating typhoid with turpentine emulsion and the other methods laid down by the late George B. Wood, of Philadelphia. He believes that very often there was a combination of typhoid and malaria, both of which must be treated to ensure success.

Dr. Crook, of Tennessee, remarked that his treatment of typhoid fever was directed along the principles of caring for septic wounds, namely, drainage and antiseptics.

Dr. Bishop, of New York, believes that the employment of cold baths eliminated the toxins; he expressed his belief that an efficacious antitoxin was not far distant.

Dr. Charles G. Stockton, of Buffalo, N. Y., read a paper entitled

ACCIDENTAL OR SPURIOUS ALBUMINURIA.

He grouped under this heading those cases in which the albumin finds its way into the urine from the pelvis of the kidneys, ureters, bladder and genitalia. He dwelt upon the importance of considering the possibility of accidental albuminuria, and further said that the urine in such cases should be frequently and carefully studied to make sure that the infection was not invading the true kidney structure.

The next number on the program was a paper by Dr. C. W. Purdy, of Chicago, entitled

THE QUANTITATIVE AND QUALITATIVE ESTIMATION OF ALBUMINURIA.

This essay was read by Dr. A. R. Elliott, of Chicago. The author considered the gravimetric method, Tanret's titration method, with a double iodide of mercury and potassium, with mercuric chloride as an indicator; the time-reaction of Brandberg; the differential-density method of Lang, Hœbler and Bernhardt; Esbach's volumetric method, and his own centrifugal method, giving both volumetric and gravimetric percentages, with error not exceeding .02 per cent. His method consists in the following steps: precipitation of the albumin in carefully graduated percentage-tubes of 10 cubic centimetres of urine by means of 2 cubic centimetres of 50-per-cent. acetic acid and 3 cubic centimetres of 1–10 aqueous solution of potassium cyanide; after mingling the urine and reagents, the tube should stand for ten minutes to insure precipitation of the albumin; at the end of ten minutes the percentage tubes are placed in a centrifugal machine, the radius of which, with the tubes in position, must be exactly 6¾ inches. The tubes should be revolved for exactly three minutes at a uniform speed of 1,500 revolutions per minute; the tubes are next removed, and the amount of albumin is read off in bulk-percentage, which, by the aid of an accompanying chart, may be quickly converted into percentage by weight and fluid ounce.

In discussion, Dr. Elliott, of Chicago, remarked that cases of nephritis, unaccompanied by albumin in the urine, occurred more frequently than is generally supposed. He referred to albuminuria accompanying gastro-intestinal disturbances, probably of toxemic origin, which caused an irritation of the renal cells and other secreting structures of that organ. In such cases the urine is of high specific gravity, and throws down acid elements. He spoke favorably of Dr. Purdy's method.

Dr. H. B. Favill, of Chicago, spoke of the importance of this subject in life-insurance examination. Albumin may be absent in positively nephritic persons, and certain other signs should be remembered in determining the diagnosis. When albumin appears in the urine, a microscopical examination should be made to determine whether the origin is renal. Again, albuminuria may be transitory, and not an evidence of disease; he had seen large amounts of albumin and casts in cases of apparent nephritis disappear. In such cases there was a coincidence of a large amount of indican, probably the results of blood changes.

The following papers were read by title:

"Some of the Ways in which X-rays assist in Medical Diagnosis," by Dr. F. H. Williams, of Boston, Mass.

"The Application of the Centrifuge to the Examination of Feces," by Dr. C. D. Spivak, of Denver, Col.

"The Changes and Diseases peculiar to Old Age," by Dr. J. W. Bell, of Minneapolis, Minn.

"Rheumatism: its Etiology, Pathology, and Treatment," by Dr. A. A. Young, of Newark, N. Y.

Dr. Fenton B. Turck read a paper on

THE TREATMENT OF THE ABDOMINAL VISCERA THROUGH THE COLON.

The paper embodies the results obtained by a large number of experiments upon dogs and of subsequent clinical observations, all of which go to show that the colon, by virtue of its close proximity and intimate physiological relations to other organs, offers very great advantages for the treatment by means of hot-water lavage. The temperature used in Dr. Turck's colonic lavage is usually high, 55° C. or 131° F., but this temperature was used only after experiments had shown not only that it did not endanger the patients but that it also proved immeasurably more effective than water at lower temperatures. The scope of the paper covers the effect of colonic lavage at 55° C. upon (1) the heart and circulation; (2) upon the blood, producing particularly quite a marked leucocytosis; (3) effect upon the gastro intestinal tract; (4) upon the kidneys; (5) the liver; (6) upon the temperature of skin, stomach and intestines; (7) the pelvic organs; (8) the effect upon elimination, auto-intoxication and general metabolism.

The effects, according to Dr. Turck, are quite remarkable; the paper, seemingly quite complete, deals largely with the technique of the treatment, and many facts were presented, gained from experimental and clinical observations, showing that there is an increase in the number of leucocytes, and increase in blood pressure, and in the production and elimination of urea. Peristalsis of the stomach and intestine increased. It was interesting to note that upon the introduction of water into the colon at 55° C. there is first a fall in the temperature of the stomach of about 1° F., while the skin temperature gradually rises, later a general rise in temperature; upon the introduction of cold water into the colon following the hot water the body temperature returns to normal.

Dr. Charles G. Stockton, of Buffalo, read a paper on

CHOLECYSTITIS.

In this interesting paper the author called attention to the following facts which were observed by him: (1) in a large number of post-mortem examinations gall-stones are found without the history of jaundice, hepatic colic or other liver disturbances; (2) in persons who have died from biliary obstruction there have been found occasionally no calculi in the biliary ducts, but one or two of great size in the gall-bladder, quite too large to engage in the cystic ducts; (3) obstruction of the biliary passages is not infrequently complete without the presence of gall-stones; (4) a calculus is sometimes found in the common duct without jaundice, colic or other symptoms of obstruction; (5) when gall-stones are found, either post-mortem or during other operations, and there have been recent symptoms of hepatic colic and jaundice, whenever they have been searched for, evidences have been found of cholecystitis, angiocholitis, or both. These observations seem to show that gall-stones may be innocent tenants of the gall-bladder; that attacks of colic may occur when gall-stones are absent, or if present too large to engage; that an inflammatory process of the biliary passages is in some way related to attacks of biliary colic. Operative procedure has for its object the cure of the cholecystosis. Undoubtedly in a certain proportion of these cases the inflammation includes the dangerous complications of angiocholitis, hepatic abscess, and peritonitis, which by the intervention of surgical procedures might have been prevented. However, even in cases in which operation is demanded, a carefully considered plan of treatment should be applied, not only to assist in recovery, but to prevent recurrences.

In discussion, Dr. Favill, of Chicago, reported a case in which diagnosis of a calculus in the common duct was made and the patient operated upon; no stone was found, but a small nodule in the head of the pancreas had caused the obstruction. The speaker did not believe that the distressing symptoms were always the result of obstruction, and in substantiation related a case which presented all the symptoms of stone in the common duct but jaundice. After many months the patient died and post-mortem there was not found any stone, the symptoms likely being due to infection. He quoted a somewhat similar case under his observation in St. Luke's Hospital, and dwelt upon the fact that physicians should dissociate the colic and icterus, the latter of which he maintained was mechanical.

Dr. Edward O. Otis, of Boston, Mass., read a paper on

THE VALUE OF THE TUBERCULIN TEST IN THE DIAGNOSIS OF TUBERCULOSIS.

In this paper the following conclusions are summarized: (1) The tuberculin test indicates early tuberculosis by a general reaction before it can be detected by other methods, with the exception, possibly, of the Röntgen rays. In the majority of cases, doses of from 5 to 10 milligrammes of Koch's orignal tuberculin are sufficient; (2) in these doses no injurious effects occur; (3) established tuberculosis may fail to give a general reaction from doses of from 10 to 12 milligrammes; (4) a similar reaction is given by syphilis in an undetermined proportion of cases; (5) there is a dose not definitely settled with which a non-tuberculous person may react or simulate a reaction; (6) the reaction may be deferred from six to twenty-four hours. The author formulates the following rules to be observed in making the test: (1) Always use the same tuberculin of a standard strength; (2) employ strict asepsis in the injection; (3) make the injections deep into the muscles of the back, arm or leg; (4) beginning twenty-four hours before the injection, a record of the temperature should be kept every two, three or four hours; (5) the test should not be repeated until several days have elapsed; (6) the general reaction may be depended upon in early cases, but in late established cases, if the general reaction fails, we should look for the local.

A FURTHER REPORT ON THE USE OF ANTIPHTHISIC SERUM (T. R.) IN TUBERCULOSIS (FISCH).

Dr. A. Mansfield Holmes, of Denver, read this paper. He remarked that in well-advanced cases the serum invariably causes a rise in temperature within from three to six hours. A more or less extensive infiltration of the injection-areas occurs after prolonged use of the serum. A depressing effect is produced, which is relieved by a short period of rest; usually within two or three days the lymphatic glands become tender and enlarged. He considered the advantages of the tuberculin test twofold: (1) It serves as a reliable means of estimating the degree of convalescence; (2) it serves as a safe and positive means of diagnosis when the bacilli are not found. He believes that the study of the blood count is of as great if not greater importance in diagnosis than examination of the sputum. During the good effects of the serum there is an increase of the lymphocytes of the blood. On the contrary, in rapidly declining cases of tuberculosis there is a progressive diminution in the percentage.

OUR CONSUMPTIVES; WHERE TO SEND THEM.

Dr. J. F. Connell, of Las Cruces, N. M., read this paper. He considered it a great error to send patients to high altitudes when there was fibrosis or fibroid phthisis; such cases should live in moderate altitudes, or even on the sea level. He called attention to Southern New Mexico, where, at an altitude of 3,800 feet, is a valley surrounded and sheltered by mountains, with a rainfall averaging less than eight inches; sunshine 348 days in the year, and a winter that possesses all the necessary qualifications of climate.

SOME STATISTICS UPON SEROTHERAPY IN TUBERCULOSIS, WITH REPORT OF 106 CASES SO TREATED IN 1898, COMBINED WITH A FAVORABLE CLIMATE AND WITH STRICT SUPERVISION OF THE PATIENT.

Dr. C. P. Ambler, of Asheville, N. C., read this paper. He claims that the use of the antistreptococcic serum, in conjunction with the antitubercle serum, has proved but of little use in his hands. The antitubercle serum is indicated in the incipient cases; it is contraindicated in cases of miliary tuberculosis and in cases of extensive softening high pulse, marked emaciation, or decidedly hereditary history. The injections should not be used when the temperature passes a higher point than 101° daily. A summary of 106 unclassified cases is as follows: Cough and expectoration disappeared in 36 per cent. and diminished in 78 per cent.; the bacilli disappeared in 46 per cent. and decreased in 64 per cent.; the physical signs improved in 84 per cent.; the weight improved in 87 per cent.; the vital capacity in 92 per cent.; the temperature and pulse became normal in 72 per cent.; the average time treated was 4.9 months; the average amount of serum used, 77 cubic centimetres, apparently cured, with no relapse, 39 per cent.; great improvement in 29 per cent.; stationary, 6.6 per cent.; worse, 10 per cent.; died, 1.8 per cent. He concluded that, while serum-therapy is still in its experimental state, the results obtained, in incipient cases, justifies its continued employment.

Dr. A. F. Lempke, of Chicago, reported

CASES OF TUBERCULOSIS TREATED WITH NITROGEN GAS.

In discussion, **Dr. Edson**, of Denver, called attention to the importance of early diagnosis. He laid stress upon the general depression of health without obvious causes, the patient progressively losing weight and feeling below par. In such cases an afternoon rise in temperature should be specially watched. He believed that the early stages of tuberculosis were often treated for malaria, and he cautioned against sending patients with pronounced pneumonic infiltration to high altitudes.

Dr. Minor, of Asheville, agreed with Dr. Edson, and also emphasized the importance of prophylaxis, which few patients seemed to thoroughly understand; exercises of the respiratory powers of the chest he considered useful. He dwelt upon individualism as a factor, and had confidence in the serum treatment when used as an adjuvant.

Dr. Allen, of Missouri, and **Dr. Paquin**, of Asheville, N. C., also discussed papers.

In closing, **Dr. McConnell** remarked that, in the early diagnosis of tuberculosis, potassium iodide in small doses is of service, as, after the administration of this drug, evidences of inflammation could be found by auscultation which are not present without its use.

In a paper entitled

THE DIAGNOSIS AND TREATMENT OF THORACIC EFFUSIONS,

by **Dr. Louis Faugeres Bishop**, of New York, the author briefly outlined the results of an elaborate study of thoracic effusions, undertaken with a view to establish the importance of careful search for fluid in pulmonary conditions and in the necessity of early mechanical intervention. Serous effusion may be due to increase of exudation or deficiency of drainage. The importance of the fluid depends upon its amount, its mechanical aspect, its quality, and how the patient tolerates it. Pus should be treated surgically. The diagnosis of thoracic effusion was considered at length, and the importance of exploratory puncture emphasized, as the classical signs are not to be relied upon. Physicians should carry a sterilized needle in a small bottle of absolute alcohol and reserve it for the particular use of exploratory puncture. He recommended a large Dieulafoy aspirator. He illustrated the importance of free paracentesis, and illustrated by fatal cases the danger of allowing even a small amount of fluid to remain in the chest. Sudden death from pleurisy with effusion may result occasionally from reflex nervous inhibition of the heart, similar to the temporary hemiplegia that sometimes occurs when the pleural cavity has been irrigated after empyema.

DR. WEBSTER, of Chicago, briefly discussed this paper.

The last paper read was by DR. J. E. GILCREEST, of Gainesville, Tenn., on

LA GRIPPE.

The author claimed there was no specific treatment for influenza. To allay the pain and soreness he used rest and free elimination from the emunctories; he at first gave calomel with sodium bicarbonate in doses large enough to cause free evacuations; he found acetanilid or phenacetin, alone or in combination with Dover's powder, useful; for muscular pains he employed sodium salicylate. Complications and relapses must be especially guarded against.

Recent Literature.

The Elements of Vital Statistics. By ARTHUR NEWSHOLME, M.D., F. R. C. P. Third edition. London: Swan, Sonnenschein & Co. New York: The MacMillan Co. 1899.

This volume constitutes the best practical treatise upon the subject of vital statistics in the English language. While the general plan of the work remains essentially the same as that of the two former editions, the present volume forms an almost entirely new book, having been very carefully rewritten, with much added valuable material. Some of the longer and less useful statistical tables in the early editions have been omitted.

The chapter upon corrected death-rates may be commended to the health officers of those large American cities who are fond of quoting crude death-rates of a very low figure, without regard to the composition of the population at different ages, and with quite as little attention to recognized methods of computing populations in intercensal years.

The thorough illustration of the subject of life-tables and the explanation of the methods of constructing them give encouragement to the publication of such tables for such American communities as have a fairly good registration of deaths in conjunction with a quinquennial census.

This book should be in the hands of every health official who has charge of the supervision of the vital statistics of the population of his district.

Text-Book of Anatomy by American Authors. Edited by FREDERIC HENRY GERRISH, M.D., Professor of Anatomy in the Medical School of Maine, Bowdoin College. Illustrated with 950 engravings in black and colors. Philadelphia and New York: Lea Brothers & Co. 1899.

In this new text-book of anatomy the object of the authors has been primarily the production of a book for the student, a book which should make the acquisition of the difficult subject of anatomy as easy as possible, both by the exclusion of a large mass of detail which is not important to a knowledge of anatomy sufficient to serve as a basis for the study of physiology, surgery and internal medicine, and by the systematic and concise, although not too condensed, presentation of the more important and practical portion of anatomical knowledge.

The fact that greater stress than usual has been laid upon visceral anatomy will increase the value of the book to the surgeon, so large a portion of whose work is now concerned with the organs contained in the great cavities of the body, and the thoroughness of the chapter on Surface Anatomy will commend the work to the same class of readers.

The illustrations of the work are in the main characterized by accuracy, and considerable artistic beauty, but their excellence hardly atones for their lack of originality, the majority being borrowed from Testut. It is a pity that in a distinctly American work such as this text-book, the illustrations as well as the text should not have been in the main original.

The method of portraying the origins and insertions of the muscles, original with Dr. Gerrish, is excellent, and is a relief from the continual repetition of Testut's plates.

The chief merit in the book will be found in the descriptive text, which is accurate, concise, and, in our opinion, gives the essentials of descriptive anatomy with less waste of words and better emphasis of important points than any similar text-book with which we are familiar

Maisch's Materia Medica. A Manual of Organic Materia Medica; Being a Guide to Materia Medica of the Vegetable and Animal Kingdoms. For the use of Students, Druggists, Pharmacists and Physicians. By JOHN M. MAISCH, Phar. D., Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. New (7th) edition, thoroughly revised by H. C. C. MAISCH, Ph. G., Ph. D., Professor of Materia Medica and Botany in the Medico-Chirurgical College of Philadelphia, Department of Pharmacy. In one very handsome 12mo volume of 512 pages, with 285 engravings. Philadelphia and New York: Lea Brothers & Co.

As a manual of materia medica, an excellent work in many respects. The work has been brought well up to date and should be of great value to students of pharmacy and to those students of medicine who desire a more extended knowledge of this subject. The lack of consideration of the subject of therapeutics makes it of less value to the majority of medical students. We find that mention is still made of the toxicodendric acid of Maisch, which was proved to be only acetic acid by Pfaff, in 1897, although reference is also made to the true active principle toxicodendrol.

THE BOSTON

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THE ANNUAL DINNER OF THE HARVARD MEDICAL ALUMNI ASSOCIATION.

THOUGH still young in years the Harvard Medical Alumni Association has already come to fill a place of importance in the community, and to be looked to for expressions of opinion on matters of medical progress. Such associations are further valuable in tending to foster loyalty and develop comradeship, qualities which medical men are likely to lose in the details of their individual professional lives.

The meeting this year was one particularly memorable, both from the achievement of the past and the unusually bright prospects for the future. As guest, the Association was fortunate in having Dr. Leonard Wood, who the following day was honored by the University at large with the degree of LL.D.

Dr. David W. Cheever in his introductory remarks spoke of the growth of the Association, and also of its losses by death. Among these was the name of Francis Minot, long associated with the best interests of medicine in Boston, and for many years a professor at the Harvard Medical School. Dr. Cheever also alluded to what he termed "a burning question, which has been settled against us." He referred to the question of the right of graduates of professional schools to vote for overseers of the University, and was full of confidence that the matter would ultimately be settled in a spirit of liberality. The now definite prospect of a new Medical Library building was naturally a source of congratulation to the entire medical profession.

Following Dr. Cheever's remarks, Dr. Francis H. Brown read the report on the Medical School, which was essentially a narrative of continued progress toward improved methods and results.

In introducing Dr. Wood, the President gracefully laid stress upon his professional rather than upon his military title, speaking of him as "Dr. Wood, physician and sanitarian, rather than as Major-General Wood, military governor of Santiago." In a speech full of simplicity and earnestness Dr. Wood narrated the events of the last few months, with which we are all more or less familiar, but which on this occasion struck a peculiarly responsive note, coming from a man who stands unique in the history of the war as a fearless soldier and a marvellously successful sanitarian. It was gratifying, too, to hear on the following day from one so well qualified to speak on the subject, that the Cuban character has many undeveloped possibilities, if it be rightly directed, and that the future of Cuba has its bright as well as its discouraging aspects. Whatever the value of a pessimistic point of view may be, it is always a relief to hear from men of experience that when the conditions are met face to face, the prospect is, after all, not so depressing. Dr. Wood's remarks throughout, both at the meeting of which we are speaking and at the commencement dinner in Cambridge the following day, bore the stamp of a perfectly healthy, vigorous mind, of a man of action regarding matters of which he had first knowledge.

Dr. Herbert L. Burrell continued the after-dinner speaking by a careful consideration of some of the problems with which medical education has to deal. He spoke of the changes which are being forced upon us, and deprecated the fact that a certain tendency toward neglect of the practical side of medicine was becoming apparent that students, however skilled in the recognition of disease, were often ignorant of the methods fitting them to care for patients. He felt that there is at present a certain gap between so-called scientific and practical medicine, which should, if possible, be bridged. As improvements Dr. Burrell thought the teaching board might be more thoroughly organized; the student brought more in contact with the patient, and the line between required and elective knowledge be more sharply drawn.

Dr. E. H. Bradford reviewed very briefly the work of the hospital ship *Bay State*, with particular reference to the disinterested services of the physicians who made up its staff, and of the others who worked under the auspices of the Massachusetts Volunteer Aid Association. He also referred to Dr. Wood in a way much appreciated by his audience.

It is rare that President Eliot has not some word of hope to give on occasions of medical gatherings. This occasion was certainly no exception. He spoke of the ease with which endowments in medicine may now be secured, owing to the growing confidence of the community in the importance of medical research, and outlined the plan for the foundation of a school of comparative medicine, to which reference has been made editorially in our issue of June 15th. He referred also to the bequest of the late Calvin Ellis in glowing terms, and in his usual happy vein characterized "the medical profession as the true missionary profession of to-day."

The after-dinner speaking was brought to a close by remarks from Dr. Freeman Allen, of the graduating class.

Perhaps never before has the question of medical education and all it involves been in so unsettled, and yet in so encouraging, a state as just at this time. It will require a large measure of judgment and great resources to attain the best results in the years to come, but we are sure that a free presentation of the difficulties and open discussion will best conduce to this end. This in a degree the annual meeting of the Harvard Medical Alumni Association tends to bring about.

A NOTABLE BEQUEST.

It has recently been made known that the estate of the late Calvin Ellis has become available for medical purposes. The estate amounts to nearly $400,000 and by the wish of the testator its income is to be devoted to the advancement of the departments of anatomy, physiology and pathology at the Harvard Medical School. Dr. Ellis was at one time Dean of the Harvard Medical School and for many years one of its most distinguished clinical professors. He felt what others have also felt, but been unable to express materially, that teachers of non-clinical subjects do not receive a just reward for their services; the first provision of his bequest therefore was that the professors of the several departments mentioned be paid $5,000 a year, which had already been done, and then the income remaining be made available for the development of the three fundamental branches of medicine, anatomy, physiology and pathology.

Could the benefactor have forseen the exact lines in which medicine was destined to develop, he could not have given more wisely, for the great need of the present, and it will be a constantly increasing need as time goes on, is endowment for the maintenance and growth of laboratories and the cultivation of research, which the existence of such laboratories implies. It is hardly possible that he could have fully realized the enthusiasm for research which was so soon to lead to the development of what we popularly call "scientific medicine," though it had already begun during the latter years of his life. Be that as it may, the bequest is a most notable one, coming as it does from a man who, although himself personally interested in the clinical side of medicine, yet had the breadth of vision to see that the future needs of medical education would require that which money alone can give, in the development of its more theoretic aspects. In President Eliot's words when the announcement was made; "Could pecuniary resources possibly be more timely, and could there be a more delightful benefactor of the advancement of medical science than Calvin Ellis?"

THE MASSACHUSETTS SCHOOL FOR THE FEEBLE-MINDED.

For the first time in its history the trustees and members of the corporation of the Massachusetts School for the Feeble-Minded at Waverley received certain invited guests on June 20th, for the purpose of demonstrating the actual workings of this most worthy charity. All those who availed themselves of this opportunity, we are assured, came away with a renewed sense of the extreme interest and significance of the work being done at the institution in caring for the hopelessly deficient, and in training those, fortunately the larger proportion, who have still possibility of mental development.

The visitors, of whom there were possibly one hundred and fifty, were shown through the various buildings by the superintendent, Dr. Walter E. Fernald, who demonstrated the methods used in the treatment and education of the various degrees of mental deficiency. Later a demonstration of class-work was given by the teachers in charge, which was surely a revelation to most of those present.

The institution is one of which the State may well be proud; it has an interest peculiarly its own, and one too little appreciated by the profession at large. We have been hearing much, of late, of education in the broad sense, as one of the therapeutic aids of the enlightened physician, and nowhere may one see the possibilities of systematic physical and mental training reduced, as it were, to their lowest terms, so well exemplified as at such an institution. Few of us are aware of what is being accomplished so near at hand, in the way of carefully worked-out scientific training for these unfortunate outcasts. A visit forces upon one a sense of the constantly widening scope of medicine, and of its possibilities in a field regarded a few years ago as absolutely hopeless.

We sincerely hope, for the good of the people at large, and indirectly for the benefit of the institution, that the hospitable action of the trustees may be repeated each year.

MEDICAL NOTES.

Yellow Fever at Panama. — Over forty cases and twenty deaths from yellow fever were reported at Panama during the months of May and June.

The Helmholtz Statue. — The statue of Helmholtz, in the court of the University of Berlin, was unveiled on June 6th, in the presence of the German Emperor.

"Neglect, Dropsy, and Christian Science" as Causes of Death. — According to the *Chicago Medical Recorder* for June, a Christian Scientist died a few days ago in Mount Vernon, N. Y., after a three months' illness, during which she persistently refused medical treatment. The coroner endorsed on the death certificate that she died "of neglect, dropsy, and Christian Science treatment."

The Imperial School for Tropical Diseases. — We learn from *Science* it has been decided that the Imperial School for the Study of Tropical Diseases, the establishment of which is due to the suggestion of Professor Koch, is to be settled at Hamburg. Professor Koch originally wished to have it in Berlin, but reasons of convenience have led to the substitution of

Hamburg, where patients can be landed directly. The institution is for the present to be equipped to receive thirty patients.

Appointments at Johns Hopkins University. — Dr. J. Whitridge Williams, associate professor of obstetrics, has been appointed to the full professorship; Dr. L. F. Barker, associate professor of anatomy, has been appointed associate professor of pathology; Dr. R. G. Harrison has been appointed associate professor of anatomy.

Tropical Medicine at University College. — Major Ronald Ross, I.M.S., inaugurated his first course of lectures on Tropical Medicine at University College, Liverpool, on June 12th, by an address on the "Possibility of Extirpating Malaria," in which he dealt in detail with the means of exterminating malaria-bearing mosquitoes.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, July 5, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 70, scarlet fever 21, measles 54, typhoid fever 10.

Boston Physicians Honored. — Dr. C. S. Minot, Harvard Medical School, has been honored with the degree of LL.D. from Yale University; Dr. W. T. Councilman, Harvard Medical School, has received the honorary degree of A. M. from Harvard University.

Boston Society of Medical Sciences. — The last meeting of the year was held at the Harvard Medical School, June 20, 1899. The following papers and communications were presented: Dr. C. G. Page read a paper on "A Preliminary Study of Streptococci Isolated from Throat Cultures from Patients Ill with Scarlet Fever," and spoke of future work to be done in isolating varieties of streptococci. Dr. Page also demonstrated lantern-slides of a bacterium, possibly the cause of scarlet fever. Dr. Theodore Hough spoke on the effect of temperature on capillary blood pressure in the skin, and concluded that the muscles of veins and arteries work together to maintain a constant pressure. Dr. S. A. Hopkins gave a preliminary report on his experimental work on the relation of bacteria to dental caries. Drs. W. T. Porter and H. G Beyer spoke of cardiac vasoconstrictor fibres in the vagus nerve.

NEW YORK.

Overwork in the Public Schools. — At a meeting of the North Side Board of Trade, held June 27th, at which the necessity for additional school facilities in the Borough of the Bronx and the studies of children in the public schools were discussed, a report from the Committee on Education was presented, in the course of which it was said: "Our attention has been called to what would appear to be almost a physical wreck of some of our highest and best scholars, caused, as we believe, by the great amount of study forced upon them; and we deem it our duty to suggest that the children in our schools should have fewer studies, the result of which, we believe, would be far better than forcing them to such an extent that they cannot sleep from worry. We believe that a more thorough and exhaustive system of gymnastic exercise should be attached to our schools, and made a more prominent feature." The report was unanimously adopted, and among those who spoke in favor of it was Dr. Emil Heuel, a highly esteemed practitioner of the Borough, who cited the case of his little nine-year-old daughter as an example of the result of the cramming system. "She comes from school," he said, "complaining of nervous headache. It is ridiculous for a child of her age to know anything of such an ailment." Dr. Heuel was of the opinion that the mental development of the children was cultivated at the expense of their physical, and that the remedy for this state of affairs was more physical exercise and less brain-work. Apropos of this matter it is stated that the School Commissioners of Brooklyn are contemplating the experiment of a high school for girls which, in addition to mental instruction, shall afford systematic practical training in domestic economy and the industries most practised by young women who have to work for their living. The public school system, it is said, trains girls to be clerks or teachers, stenographers or business women, but gives the other girls, who form a majority, no opportunities to fit them for bread-winning.

A Death from Chloroform. — A death from chloroform is reported in the practice of Dr. Joseph Muir. The patient was a boy nine years old, suffering from adenoid or other form of growth in the fauces obstructing respiration, and the operation for its removal had not yet been commenced when the fatal result occurred. The chloroform inhalation was conducted by an experienced operator, Dr. George Krauder, house-surgeon of St. Mark's Hospital.

Yellow Fever at Quarantine. — A case of yellow fever was brought to quarantine on the steamship *Krim*, of the Munson Line, which arrived from Havana and Matanzas on June 29th. Dr. Doty decided that he would not try his serum on the patient, as the case was very far advanced (seven days) and was already doing very well, with an excellent chance of recovery.

How the Cost of Medical Charities to the City Might be Lessened. — The Controller has come to the conclusion that fully half of the three million dollars, including the amount received from the excise funds, which the city last year appropriated to private charities, can be saved by the Stranahan law, enacted by the last Legislature, which gives the Board of Estimate authority to make only such appropriations as it sees fit, and repeals the mandatory provisions of the charter appropriating specified amounts to a number of institutions. That too liberal appropriations by the city have a tendency to lessen private contributions is well shown by a series of comparisons of income taken from the late report of the State Board of Charities. From this it appears that while the New York Foundling Hospital last year received $310,417 from the city, it obtained only $6,450 from private sources, the New York Infant Asylum received $86,457 from the city, against $145 from private sources, and the Colored Home and Hospital, $18,967 from the city, against $474 from private sources. Mr. Coler has been in conference with the State Board of Charities with reference to the whole matter, and has now received a letter from the secretary of the Board, Mr. Hebberd, in which he says in part: "It seems to me important and necessary that there should be in connection with your office a well-equipped bureau of charitable institutions, which through the work of inspectors and otherwise should collect, classify and file for ready reference all the useful information it is practicable to obtain with relation to those charities which seek the assistance of the city. It would seem entirely feasible and proper to make a rule to the effect that no money would be given to any charity which neglected or refused to furnish such information respecting its management as your office might require. The result of such a rule should be to let a large amount of hygienic sunlight into some institutions which are charitable when seeking donations, but not even eleemosynary when attempting to evade examination. As a general proposition, it would seem desirable to limit appropriations to charities to an amount commensurate with the useful public services rendered by these institutions, as far as can be determined. It rests entirely within the discretion of the city authorities to say how much money they wish to give to private charities, and also to see that those having the care of inmates expend the money wisely. Beyond this, to well-conducted charitable institutions and societies for beneficent purposes not having the care of inmates, a reasonable apportionment might be made, based somewhat upon the amount of private donations received by such society, and with the direct understanding that the city's moneys were to be used for the actual assistance of the poor, and not for administrative expenses.

The Brooklyn Milk Supply. — The president of the Board of Health has requested the sanitary superintendent to make a special investigation of the milk supply of Brooklyn, as he has reason to believe that it is not as pure as it should be. Recent returns, he says, show that the large number of deaths of children, under the age of five years, in the Borough of Brooklyn (68 in Brooklyn, as compared with 33 in the Boroughs of Manhattan and the Bronx), is caused by other than climatic reasons.

The Mount Sinai Hospital. — In the competition of architects for plans for the new Mount Sinai Hospital, the award has been made to the design of Arnold W. Brunner, and excavation has already been commenced for the foundations. The new buildings which, exclusive of the land, are to cost about $800,000, will occupy the greater part of the block between Fifth and Madison Avenues and 100th and 101st Streets.

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ARMY NOTES.

Leprosy in Cuba and Porto Rico. — Energetic measures are being taken to properly segregate all lepers in Cuba and Porto Rico. The San Lazaro Hospital in Havana now contains 370 cases of leprosy, although four months ago there were only eighty inmates. In view of this increase the institution, although well endowed, has found it necessary to ask for an appropriation of several thousands of dollars to properly continue its work. The hospital is in charge of Sisters of Charity.

The Medical Department Praised. — *The Journal of the United Service Institution of India* for April last contains an elaborate report by Capt. S. S. Long, Assistant Adjutant-General in the British Army, on the administration of the United States forces in the Philippines. Captain Long, who spent the winter and early spring in and around Manila, after free criticism of the Quartermaster's, Engineer and Ordnance Departments, speaks in terms of the highest commendation concerning the Medical Department and praises the equipment and administration of the hospitals. "The health of the troops was extraordinary," he says, "and the subject of constant remark. If the spirit of the troops was excellent it was even surpassed by that of the medical branch, who, in spite of inadequate and defective transport facilities and many other difficulties, always had their hospitals as complete and efficient as human ingenuity could make them."

Sick and Wounded Returning. — The transport *Morgan City* sailed from Manila on June 24th for San Francisco, having 464 sick and wounded on board.

Deaths of Two Surgeons. — During the past fortnight two bright young medical men of the army have died from disease contracted in the line of duty in the military service. First Lieut. R. B. Westnedge, Assistant Surgeon, U. S. Army, died in Manila, as a result of typhoid fever. Dr. Westnedge was appointed an assistant surgeon in December last, after having taken an excellent standing in the class before the army medical examining board. He was a graduate of Rush Medical College and had completed a term as interne at the Cook County Hospital. The second death was that of Acting Assistant Surgeon F. W. Fabricus, U. S. Army, who succumbed to yellow fever at Santiago. Dr. Fabricius was a candidate before the army medical examining board at the same time as Dr. Westnedge but was rejected for physical deficiencies. Attracted by a military life he was given a contract and sent to Santiago, where he was made pathologist to the general hospital and had been carrying on earnest investigations on the subject of Cuban malaria. It is supposed that Dr. Fabricius contracted yellow fever during the autopsies performed on the first cases which occurred in the recent outbreak of the disease at Santiago.

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Miscellany.

MOVABLE KIDNEY.

L. L. **McArthur** advocates a new method of fastening the movable kidney in its new position: (1) A curved transverse incision below the last rib is made through all the structures at once down to the peritoneum anteriorly; (2) the peritoneum is then loosened from the lateral parietal walls by blunt dissection sufficiently to permit boldly enlarging the posterior angle of the wound without fear of injury to important structures quite back of the quadratus; (3) fatty capsule of the kidney loosened by blunt dissection; (4) the anterior layer of the lumbar fascia and transversalis aponeurosis is then loosened from the tissues on which it lies, to such an extent as will admit the kidney in the pocket thus made, the lower flap of the wound having a compartment for the lower half of the kidney; (5) prior to inserting the kidney in the new compartment, the cut edges of the transversalis aponeurosis have inserted in them two or three stitches, which serve to pucker the pocket containing the kidney; (6) the kidney having been dislocated first upward, its lower end is slid into the pocket; (7) closure now of the stitches in the aponeurosis of the transversalis fixes the lower half of the kidney external to one of the layers of the abdominal parietes, supporting the same by so broad a surface that no injury to kidney can result and no displacement occur, and employing a normal tissue not transplanted. He thinks that a pocket large enough to hold the lower half of the kidney is all that is necessary, but the kidney should be fixed in position by two or three stitches in order to hold it securely until adhesions form. It cannot be dislocated by pressure from above, which now only tends to drive it deeper into the pocket.

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URETERO-URETERAL ANASTOMOSIS.

Markoe and Wood[1] report a case of considerable interest from the point of view of diagnosis and treatment. In the course of a hysterectomy for an intraligamentous fibroid a section of the right ureter an inch and a half long was removed under the impression that it was a vein entering the tumor. The left ureter, though not cut, was so sharply kinked in the closure of the peritoneal flaps that it was completely shut off. Recovery from ether was normal, but anuria ensued, and resulted in an examination of the tumor and the identification of the section of the right ureter. The abdomen was reopened at once and both ureters found distended. The left ureter was freed by loosening the stitches which held it, and there was an immediate discharge of the retained urine into the bladder. On removing the ligature from the proximal end of the divided right ureter urine escaped into the wound. Uretero-ureteral anastomosis was then performed by invaginating the proximal end into the distal end over a catheter, which was brought out through the meatus, and circular suture. The catheter was left *in situ* for five days. Vaginal and abdominal gauze drainage was provided, and the patient made a good recovery.

A point of interest about the case is that the complete obstruction of both ureters resulted in no marked pain, or other violent subjective symptoms, and that the continuance of the obstruction for twenty-four hours did not prevent complete recovery of function.

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THE RANK AND PAY OF THE SURGEON-GENERAL.

The following resolutions were adopted by the Medical Association of Georgia at its fiftieth annual session at Macon, last April:

Whereas, The position of the Surgeon-General of the United States Army involves great and grave responsibility, the direction of vast interests, the highest order of professional skill and learning and executive ability, and

Whereas, The number of officers and soldiers under the direction of the surgeon-general in an army organized as is the Army of the United States is greater than the command of a division commander,

Be it resolved, By the Medical Association of Georgia, that it is the sense of this body that the Surgeon-General of the Army should have the rank, pay and allowances of a major-general.

Resolved, That the Medical Association of Georgia requests all the medical societies of the United States to join in this appeal.

Resolved, By the Medical Association of Georgia, that copies of these resolutions be transmitted to the President of the United States, the Honorable Secretary of War and our senators and representatives in Congress, with the request that all co-operate in attaining the end sought; and further, that copies be also sent to the American Medical Association, and all other medical societies in the United States, with the request that they join in this memorial to Congress and urge prompt action upon this subject by our national legislative authorities.

METEOROLOGICAL RECORD

For the week ending June 24th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...18	30.07	65	70	60	70	54	62	N.E.	S.	3	9	O.	O.	
M..19	29.93	71	83	59	63	68	66	W.	S.	6	9	C.	C.	
T...20	29.84	74	87	62	65	91	78	S.	S.	6	12	C.	R.	.35
W..21	29.84	68	76	60	58	52	55	W.	N.W.	12	18	C.	C.	.12
T...22	30.18	63	72	54	56	44	50	N.	W.	12	4	C.	O.	
F...23	30.24	68	77	60	58	72	65	W.	S.W.	12	19	C.	O.	
S...24	30.10	75	86	64	72	77	74	W.	S.W.	9	20	C.	O.	.04
☞	30.03	69	79	60	63	65	64			9	13			.07

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

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[1] Annals of Surgery, June, 1899.

RECORD OF MORTALITY

For the Week ending Saturday, June 24, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping-cough.	Diphtheria and croup
New York	3,438,899	1160	495	16.80	11.60	9.60	.80	2.64
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	379	122	15.86	13.00	5.20	1.82	5.72
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	168	48	6.60	11.40	2.40	.60	1.80
Baltimore	506,389	181	71	14.30	3.85	10.45	—	2.75
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	—	—	—	—	—	—	—
Washington	277,000	105	43	15.36	9.60	12.48	.96	—
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	44	19	15.89	18.16	—	—	2.27
Nashville	87,754	49	18	34.68	16.32	24.48	4.08	—
Charleston	65,165	—	—	—	—	—	—	—
Worcester	108,240	22	4	8.30	12.45	—	—	—
Fall River	95,919	—	—	—	—	—	—	—
Cambridge	89,724	26	8	7.70	11.55	—	3.85	3.85
Lowell	88,641	29	12	20.70	13.80	13.80	—	3.45
Lynn	66,703	—	—	—	—	—	—	—
New Bedford	66,340	16	8	18.75	6.25	18.75	—	—
Somerville	61,101	12	1	—	16.66	—	—	—
Lawrence	57,263	24	16	25.00	8.32	16 66	—	8.32
Springfield	56,501	14	5	35.70	7.14	21.42	—	7.14
Holyoke	43,424	16	5	25.00	12.50	25.00	—	—
Brockton	37,278	7	2	—	—	—	—	—
Salem	36,883	5	3	20.00	—	20.00	—	—
Malden	34,613	6	—	—	16.66	—	—	—
Chelsea	33,468	8	1	—	—	—	—	—
Haverhill	32,022	10	1	—	20.00	—	—	—
Gloucester	30,589	—	—	—	—	—	—	—
Newton	29,716	9	—	—	—	—	—	—
Fitchburg	29,438	8	5	—	—	—	—	—
Taunton	28,167	9	2	—	—	—	—	—
Everett	25,338	6	—	16.66	16.66	—	—	—
Quincy	23,549	8	1	25.00	12.50	12.50	—	—
Pittsfield	22,643	9	3	11.11	11.11	11.11	—	—
Waltham	21,812	8	1	12.50	12.50	—	—	—
North Adams	20,971	2	1	—	—	—	—	—
Chicopee	17,842	4	2	25.00	25.00	25.00	—	—
Medford	16,511	4	—	—	—	—	—	—
Newburyport	14,915	5	—	—	40.00	—	—	—
Melrose	14,032	3	—	—	33.33	—	—	—

Deaths reported 2,361; under five years of age 897; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 387, consumption 270, diarrheal diseases 218, acute lung diseases 194, diphtheria and croup 70, whooping-cough 23, typhoid fever 21, scarlet fever 19, measles 15, erysipelas 11, cerebro-spinal meningitis 8, small-pox 2.

From typhoid fever Philadelphia 9, New York 5, Baltimore 2, Boston, Washington, Nashville, Worcester and Everett 1 each. From scarlet fever New York 14, Philadelphia 3, Washington and Worcester 1 each. From measles New York 12, Nashville, Lowell and Waltham 1 each. From erysipelas New York 7, Boston 2, Springfield and Quincy 1 each. From cerebro-spinal meningitis New York 7, Nashville 1. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending June 17th, the death-rate was 16.5. Deaths reported 3,607; acute diseases of the respiratory organs (London) 207, measles 142, whooping-cough 91, diphtheria 83, diarrhea 48, scarlet fever 25, fever 25, small-pox (Liverpool and Hull 1 each) 2.

The death-rates ranged from 9.0 in Croydon to 24.8 in Manchester; Birmingham 19.4, Bradford 15.9, Cardiff 9.3, Gateshead 19.6, Hull 16.5, Leeds 16.6, Liverpool 20 6, London 15.1, Newcastle-on-Tyne 15.5, Nottingham 17.4, Portsmouth 15.0, Sheffield 18.2, Swansea 17.1, West Ham 11.8.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 1, 1899.

W. L. Bell, assistant surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the "Philadelphia."

H. E. Odell, assistant surgeon, detached from the "Philadelphia" and ordered to the Naval Hospital, Mare Island, Cal.

F. M. Bogan, assistant surgeon, ordered to additional duty at the Boston Navy Yard.

R. G. Brodrick, passed assistant surgeon, ordered to Washington, D. C., July 6th, for examination for retirement and then home and to wait orders.

J. C. Rosenbleuth, passed assistant surgeon, detached from the "Buffalo," when put out of commission, and ordered to the "Vermont" immediately.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JUNE 29, 1899.

Sawtelle, H. W., surgeon. Detailed as inspector of relief stations of the third and fourth class. June 27, 1899.

Woodward, R. M., passed assistant surgeon. Upon being relieved by Passed Assistant Surgeon A. R. Thomas, to proceed to Washington, D. C., for assignment to duty. June 26, 1899.

Thomas, A. R., passed assistant surgeon. Upon being relieved by Passed Assistant Surgeon G. T. Vaughan, to proceed to Reedy Island Quarantine Station and assume command of the Service. June 26, 1899.

Hallet, E. B., acting assistant surgeon. Granted leave of absence for two days from July 4, 1899. June 27, 1899.

Walkley, W. S., acting assistant surgeon. Granted leave of absence for three days from June 28, 1899. June 26, 1899.

Brunner, W. F., sanitary inspector. Granted leave of absence for three days from June 28, 1899. June 23, 1899.

Rodman, J. C., sanitary inspector. Granted leave of absence for seven days from June 27, 1899. June 23, 1899.

Thurston, E. J., hospital steward. To proceed to New York, N. Y., for special temporary duty. June 26, 1899.

PROMOTION.

Pettus, W. J., passed assistant surgeon. Commissioned as surgeon. June 26, 1899.

APPOINTMENT.

Frederick Townsend, of Michigan, to be acting assistant surgeon, for duty at Sault Ste. Marie, Mich. June 23, 1899.

RESIGNATION.

Harold C. Ernst, M.D., professor of bacteriology in the Harvard Medical School, has resigned his appointment as physician to out-patients in the Massachusetts General Hospital, the demands of his laboratory calling for all his time.

SOCIETY NOTICE.

American Otological Society. — The thirty-second annual meeting of the Society will be held at the Pequot House, New London, Conn., on Tuesday, July 18, 1899, at 10 A.M.

Frederick L. Jack, *Secretary.*

RECENT DEATHS.

Benjamin Franklin Clough, M.D., M.M.S.S., of Worcester, died May 8, 1899, aged sixty-one years.

James O'Reilly, M.D., of New York, died on June 26th, of paralysis. He was born in Ireland in 1828, and studied medicine at the Royal College of Physicians and Surgeons, Dublin, and the Medical Department of the University of Vermont. He retired from active practice more than ten years ago.

Francis E. Noble, M.D., of Jersey City, died of pneumonia on June 29th. He was born in New York in 1824 and had practised in Jersey City since 1850.

BOOKS AND PAMPHLETS RECEIVED.

Modern Anatomy. By Edmund W. Holmes, A.B., M.D. Reprint. 1899.

Transactions of the Wyoming State Medical Society, May and November, 1898.

Report of a Case of Foxtail Infection. By R. C. Chamberlain, M.D., Rock Springs, Wyo. Reprint.

The Standardization of Drugs and the Forthcoming Revision of the Pharmacopœia. Reprint. 1899.

Some Misapprehensions as to the Simplified Nomenclature of Anatomy. By Burt G. Wilder. Reprint. 1899.

The Effect of Pressure in the Preservation of Milk. A Preliminary Report. By B. H. Hite, Morgantown, W. Va.

International Clinics, Edited by Judson Daland, M.D. Vol. I, Ninth Series, 1899. Philadelphia: J. B. Lippincott Co. 1899.

Notes on Malaria in Connection with Meteorological Conditions at Sierra Leone. By Major E. M. Wilson, C.M.G., D.S.O. London. 1899.

Gonorrhea in Women. Treatment of Endometritis. Gynecologic Diseases: Some Points in the Diagnosis of the More Common Ones. Tampons and Pessaries in the Treatment of Displacement of the Uterus. By T. J. Watkins, M.D., Chicago. Reprints. 1897–99.

Addresses.

MEDICINE AS A PROFESSION.[1]

BY WALTER B. PLATT, F.R.C.S., BALTIMORE, MD.

We are told that no man undertakes to build a house but who first counts the cost, and surely no man will dedicate himself and all his powers to a lifework without considering his fitness, what it has to offer him, whether he will be able to finish what he begins, and whether he will be able to make it a success.

It is difficult to conceive of a profession which ought to develop the faculties of a right-thinking man more fully than that of medicine. There is an intimate contact with all classes of men, a close view of human strength and of human weakness, of human joy and suffering, of the insufficiency of wealth and the misery of poverty, and of the connection between the sound body and the sound mind, of which we have all heard and never before realized.

We also see the enormous influence of heredity in determining lines of usefulness or worthlessness, and the sure degeneration of good old family stock, unless a little of the plebeian is infused every third or fourth generation.

All these things pass in review before the physician, imprinting the force of their truth upon his convictions. Thus his life is a satisfying one. He seldom accumulates much property, but rather a rich store of experiences, reaching upward and downward as far as human nature extends in either direction.

Among the many inscriptions in the Congressional Library who has not been struck with one of the most beautiful of them all? It embodies the creed of most thoughtful physicians, who despise the millinery of religion and the frauds with which some of her bodies are covered. We mean the verse from the Prophet Micah, "and what doth the Lord require of thee but to do justly, and to love mercy, and to walk humbly with thy God?"

Your life will be mostly in the shadow, for who sends for a physician when he is whole in body and mind, is free from pain and full of his accustomed energy, "rejoicing as a strong man"? All the more reason for an abundant supply of genuine good spirits of your own. This is the fruit of a good conscience, a first-rate digestion, and a liking for your kind as you find them, whether straight, crooked or striped. You will soon build up a clear philosophy of life, because you more than other men will see what life really is, what it amounts to and what can be made of it. You will see the beginning and the ending of life, the first and the last breath drawn and know much of what has gone on between these two breaths. You will witness some tragedy, a good deal of comedy, and a little melodrama now and then, with a liberal allowance of cheap acting that can hardly deceive any one.

A physician sees with peculiar satisfaction the mighty motto written over the portals of your university, "Veritas vos liberabit." You will find the truth no *ignis fatuus*, and while you only reach after, and still never reach it, you will not be lead into false paths, nor left standing in the mire.

As a physician you will change many of the ideas you have previously held to be true. One of these is the view you have held of your fellow-men. Men will be found to be much worse than you ever dreamed and much better than you ever supposed; stronger in right purpose than you believed, and failing those nearest them at the critical moment. You will more than accomplish the desire of Adam and become as a god, knowing good from evil more than other men. You will see the human heart stark naked, and beautiful or hideous, as it is made. No robe or cassock can hide the dreadful deformity which you alone of human beings will sometimes see beneath it. No station or high office of great estate will afford the least protection or shelter from your gaze. You will find hearts as dry of human kindness as any rock smitten by Moses in the wilderness was of water, but others brimming over with a constant and endearing sympathy that makes you instant captive. Your ideas of what men usually call the power of religion will be rudely shaken, for you will see men for years devoted to the observance of the churches tremble at the far-off bugle call of the gray angel, while gigantic rascals hear the near rustle of his wings without a tremor. Courage, then, is born and bred in men and we do not shame them for the lack of what God never gave.

Eminent physicians and surgeons are seldom ardent devotees of churches, but I believe no men are more devout in the depths of their being. What man who has an eye to see or a brain to perceive can dissect an eye or a brain, or see a living, thinking man develop from a minute cell, and doubt that an immeasurably wise intelligence devised it? You will believe in the goodness of God from a thousand proofs of it, while the mystery of pain and the misery of poverty as you see it will thrust daily darts into your soul; and, again, in the families you visit, you will see heavenly visions of unselfishness in many mothers and fathers and in some children. You will believe as much in the perfect virtue of many good women as in the almost total depravity of others. At times you will think that all men are liars, until you find those whose perfect truthfulness a thousand times outweighs those dark and devious ways. To know how good and how bad men and women are, you must practise medicine.

I would have every man about to practise medicine spend from three to six months in training in business methods, for, unfortunately, there is a business side to your profession. A physician, eminent for his learning and success, said to me, recently, "Really, the only qualities necessary to practise medicine successfully are politeness and punctuality," which I think I might interpret as tact and attention. Do not look for much leisure, for you cannot have it; do not expect too much gratitude, for that will be an accident dependent upon your personality and not upon your services. Do not think you can be your own master, for you will wash the feet of the poor. Do not think you will live to be old, for most of you will die of Bright's disease before you are seventy. But if you half deserve the name of physician, you will lead a satisfying life, become a reverent philosopher, and, when the end approaches, go,

> "As one who wraps the drapery of his couch about him.
> And lays him down to pleasant dreams."

Who will say that this work is not more than interesting? It is fascinating. It will hold you day and night. You are not a passive spectator, for you control the whole show.

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[1] An address delivered to the candidates for graduation of the Johns Hopkins University, May 9, 1899.

To feel that you hold the life of a man in the hollow of your hand, that his earthly career is at the ends of your fingers, that you are surely going to save him from death by your action, by your intelligence, and that his years will go on as if nothing had dragged him to the edge of a precipice and almost over; is not this a triumph greater than that of a soldier, who has taken instead of saved human life? Can you imagine any greater satisfaction than to do this, not once only but many times, not to speak of the pleasure of relieving pain or bringing peace and comfort where there was unhappiness and discomfort.

Every physician should have in his office, for his own edification, the finest obtainable copies of the "Prodigal Son," to see if art can equal what he daily sees and hears. Have a statue of Venus in an opposite corner from one of Cupid, for you are a daily witness of the trouble which comes to young men and old who follow strange gods.

Moreover you must consider whether you love that profession enough to count as nothing a thousand discomforts and risks inseparable from it. Do not forget that there are 106,000 physicians already in the United States, and 165 medical colleges, to see that the supply does not give out. Some of you *must* be physicians or surgeons; you could be nothing else and nothing less. No one would ask a young eagle if he expected to fly, or a fish if he intended to swim. I do not ask these inevitables, "Will you," or, "Will you not," but even you may inquire with me what is the best way to study and practise medicine, whether it is best for me and the rest of mankind that I should undertake to relieve, to cure, to bind up the wounds of the body and heal the broken-hearted, and you will find the wounds of the heart and the pains of the soul hardly less common and demanding scarcely less tact and patience than those of the bone and flesh. Whether you will be physicians or surgeons or specialists need not now concern any of you, but whether you will be a physician at all.

No profession more strongly marks men than that of medicine. Make up your mind to that, and that whatever be your individuality it will be second and your profession first, if you are worthy of it. You will have certain characteristics of a class. You will not live as long as if you were a clergyman. The irregular hours, the sedentary life, the wear and tear of competition and of the weight of others' woes will take off a few years. What of that! We do not reckon our lives in that way! While fewer physicians become insane than members of many other occupations, a larger proportion become addicted to the use of morphine, and one of your first vows should be never to take that drug without the advice and supervision of a brother physician.

You will be somewhat more liable than other men to contract tuberculosis if you are much in contact with it in your hospital and laboratory work. You will be considerably more likely to take scarlet fever than other mortals. If you do any surgery, you will run some danger, and that not a little, of infecting yourself with septicemia. No one would surely draw back because of these! A well-known physician said to me that he thought nearly every physician had nervous exhaustion. I hardly believe this true to the extent he intended, but many of them do have something very akin to this.

Medicine is only one and the noblest of the so-called natural sciences, and rests upon the firm base of morphology, biology and chemistry — a splendid trinity. As with the early Christians who had divers gifts, some to be apostles, some evangelists and some teachers, so will medical men work in many fields. Some will take naturally to medical journalism, others to the laboratory, some to hospital work, while most of them will practise medicine in one or another department. About one-tenth of all who graduate in medicine give it up. With good preparation, fair health, plenty of industry and no end of earnestness, with a certain amount of tact and talent, your success is one of the surest things in life.

Do not suppose you can enter at once upon a practice. Two years elapsed before his first patient entered the office of one of the best-known physicians in New York City. I know of another who faithfully waited in his office on Madison Avenue one year without having a single patient. I well remember my first patient, who chanced to be a Johns Hopkins student and in great fear of baldness although blessed with hair of great length and luxuriance.

If you have any sense of humor and a proper amount of self-control, your medical experience will be as entertaining as instructive.

Do not hesitate to study medicine merely because you feel faint at the sight of sickness or wounds. I well remember seeing a friend, now one of the most eminent physicians in New York City, turn the color of sage-cheese and make a bolt for fresh air when he had the study of medicine in mind and had gone to the hospital to witness some simple, bloodless surgical procedure. At the opening of each year at the Harvard Medical School two men are stationed at the door of the amphitheatre to carry out the new students who fall fainting. This signifies no more than the peculiar and disagreeable sensation good soldiers usually have when first under fire.

As a boy every one of you has doubtless twirled a magnet round and round over a compass and watched the needle beneath, follow its every turn. If that needle were wood or lead, there would be no such eager following. If you are made of the right metal you cannot but follow where your profession leads, and you must feel toward her as a man feels toward the love of his heart; he must have that particular woman and none other. Like Cleanthes in his hymn to Zeus, "Still must you follow on" if you are true to medicine.

If you are destined to enter our profession, you will find well-written sketches of eminent medical men delightful reading. See what kind of a man was Johannes Müller, Jenner, Pasteur, or our own Austin Flint, Benjamin Rush or Henry J. Bigelow. Read of Lister and Koch, of Virchow, Langenbeck and Billroth, and if the cockles of your heart do not glow, you can never take fire from our shrine. Get some hospital house surgeon to take you on his visits, look at, listen to and feel what he shows you in hospital wards, and if you can be dragged away without the keenest regret that you may not stay longer, you are not worthy. Do not think for a moment that any amount of brilliancy or influence will avail in the long run. One thing only gives solid reputation, and that is a great deal of good work. It has been my good fortune to meet and know some great medical men, and not one of them but won his laurels by continuous hard work.

One of the characteristics of all virile men is the wish to make every man with whom they come in contact feel and think as they do. They are secular missionaries. You must make up your mind to be missionaries of hygiene for the rest of your lives. But most men will still do as they choose, preferring the possibility of a cure to a certain prevention.

You will be in very good company. Jenner, Pasteur, Roux and Koch, Behring, McDowell and Morton will lead. What other man than Edward Jenner since the world began has saved directly, by one single discovery and invention, several millions of lives? and could a monument as high as Heaven itself be too high for such a man! Think of the laurel crown for the man who discovers a cure for consumption and for cancer! You will surely never lack for lofty aims if you study medicine. Think of that horrible and heretofore absolutely hopeless disease, hydrophobia, and of its reasonably certain cure by a few harmless and painless injections, the discovery of Pasteur. Think of the scourge diphtheria was, and the comparatively innocent disease it has become when treated with early intelligence according to the method of Behring and Roux. All our recent and great cures have been thought out by men of the laboratory, who could look through microscopes and know what they saw, who could sacrifice a few animals on the altar of science that men might live. Great universities like this, your Alma Mater, provided these laboratories and gave their devotees food while they worked.

Sir James Paget, in an address before the Medical School at Leeds (1865), says: "I suppose that one of the keenest of intellectual pleasures is in the clearing of a view of truth." Now, your whole professional life will be filled with that pleasure or may be so filled.

Dr. Da Costa puts it well when he says (Valedictory Address, 1883): "To be the welcome visitor, the one to whom all turn in trouble, and to whom family secrets are confided with the freest faith that they will be sacredly guarded; to be eagerly sought for in hours of danger and of anguish and feel that you have the power of relieving; to be the hope of many and the friend of all — this, surely, makes a splendid calling"

We have the authority of Dr. John Draper for the statement that in the early years of European medicine, about the year 1200, nearly every physician of that time was a Jew, and that of the libraries of the universities of Salerno and Montpelier, the two seats of medical learning of that day, one-half the books were Hebrew and the other half Arabic. In a word, European medicine at the outset was Asiatic. In one of those wild waves of antisemiticism in 1306 all Jews were prohibited from practising medicine in France. There is no doubt that the physicians of these times were a weird lot, partly astrologers; later, leeches and barber-surgeons were added to the list, and a little later they were often monks.

The bond of the clergy is honored to this day by most physicians, in making no charge for their services, although we never knew our clerical brethren decline a marriage fee when it was pressed upon them. Medicine once sought the cloister; it now seeks the laboratory. More than ever it is a matter of physics, and disease something to be seen, heard or felt in one way or another. You need first a habit of trained, careful observation, and next a logical mind, for without a correct interpretation of symptoms, you are but a droning chronicler and not the trained historian of your patient's case. The perfection of science is prophecy, and given certain conditions you can now tell your patient what is to come. Unlike the astronomer, we cannot foretell the hour and minute, but we approach ever nearer to that ideal.

The splendid professional and social standing of Boston physicians is well known, and clearly due first to their training in a great university, and then to an enlightened public opinion. In a delightful address before the students of the Harvard Medical School (1870), Professor Andrew Peabody said: "The physician should be a gentleman. By a gentleman I mean not a person who in certain circles conforms to the conventional canons of good breeding, but one whose genuine kindness of heart never fails of its due expression in courteous speech and manners on all occasions and toward all descriptions of persons."

Boards of foreign missions have only lately learned that the missionary must be either a doctor or else he must have one in close relationship with his work if the heathen are to take any stock in his labors. One of the most important of the white man's burdens is to bind up the wounds and heal the diseases of his black, brown or yellow brother. As a physician I believe it would do more to pacify and reconcile the Filipinos to our rule to build a hospital and a school-house in every town than many soldiers and many promises of good things to come.

Physicians succeed in many things besides medicine. As you are all aware, many of our foremost men of science, especially in the fields of botany, zoölogy and biology, have been physicians. Witness Huxley, the elder Darwin and a hundred others. Among great travellers we see Mungo Park and Livingstone. The names of Oliver Wendell Holmes and Sir Thomas Browne will instantly occur to most of you as examples of the physician in literature. I believe they are poor politicians and never statesmen. A physician has never been President, seldom governor of a State, and rarely even a mayor of a large city. They have often been noted soldiers, and take kindly to war and rumors of war. The late Mr. Justice Miller of the United States Supreme Court told me that he practised medicine for five years, and if he could have had a surgical practice, he would have never studied law, but medicine as then known was too uncertain, too illogical to satisfy his mind. With him surgery was the one thing needful. We lost a good surgeon, doubtless, and gained one of our best judges. Senator Gallinger of New Hampshire, albeit a homeopath, is an M.D. Count Rumford studied, although he never practised, medicine.

Physicians are often able administrators, and make excellent superintendents of institutions. We know the laurels Dr. and Col. Wood has won as military governor of Santiago. It may be gratifying to some of you to learn that many of the most successful physicians did not stand at the head of their classes in college, while it is a singular fact that many surgeons were very dull even in the study of medicine, and seemed to gather a strange force and purpose after passing their year in a hospital.

A physician ought to be a gentle Stoic, a bit of an Epicurean, and a true Christian gentleman. We read that Arthur, when he made a knight, said: "Be ye a good knight, and so I pray to God, so ye may be, and if ye be of prowess and of worthiness, ye shall be a knight of the Table Round"; and we who are physicians say this to every one of you.

THE CAVENDISH LECTURE ON THE ETIOLOGY AND DIAGNOSIS OF CEREBROSPINAL FEVER.[1]

BY WILLIAM OSLER, M.D.,
Professor of Medicine, Johns Hopkins University, Baltimore, Md.

(Concluded from No. 1, p. 6.)

III. *Lumbar Puncture.* — During the past ten years no single measure of greater value in diagnosis has been introduced than Quincke's lumbar puncture. We are now able in a large number of cases to make a prompt decision as to the existence of meningitis, and are further enabled to recognize the form of the disease. I shall not detain you with details of the technic, available in all text-books, and recently considered at great length in an elaborate "Referat," by Neurath, in the *Centralblatt f. d. Grenzgebiete der Medizin und Chirurgie*, Bd. I. It is a simple, quite harmless procedure, and in a majority of the cases can be done without general anesthesia, or with the aid of a local freezing mixture. A dry tap is rare in cerebro-spinal fever; the needle may be plugged with fibrin, or a nerve root may come directly against the orifice. Puncture in the third or fourth interspace may be negative, while in the second a free flow is secured. In one of our early cases in which no fluid was obtained the autopsy showed an exudate as thick as butter, with little or no fluid. A first puncture in a case is very often negative. Though simple, the technic is, like other procedures of the kind, bettered by practice. Very often at first a few drops of blood flow, then a clear or turbid fluid, either drop by drop, or sometimes in quite a strong stream.

The fluid may be clear, turbid, purulent, or more rarely a brownish yellow, or quite bloody. In a great majority of all cases when meningitis is present the fluid is turbid. In rare instances clear fluid may be obtained when meningitis exists, and in a protracted case the fluid may be turbid at one puncture and clear at the next. Several observers have noted that the fluid may become clear in the intermissions of the disease. A clear fluid may be obtained from a puncture in the second lumbar interspace, while lower down a turbid fluid may be withdrawn. I saw this possibility very well illustrated in a recent post-mortem; the fluid in the lower dorsal and upper lumbar regions was perfectly clear, while that in the lower lumbar and the sacral regions of the canal was very turbid and contained numerous flocculent masses.

The fluid should be allowed to flow into a sterilized test-tube. When the fluid is at all turbid there is usually a slight sediment and a coagulation of fibrin. Cover-glass preparations are made either directly from the turbid fluid, or if the turbidity is slight and the cell elements few in number, after it has been centrifugalized. Cultures should be prepared at the time of making the lumbar puncture by allowing one or two cubic centimetres of the fluid to flow on to a Löffler blood-serum medium.

The amount of fluid obtained varies from a few drops to 130 c. c. The samples in these flasks show the large amount which may be removed, one 126 c. c., another 112 c. c.

Wentworth claims that within certain limits there is some relation between the degree of turbidity of the fluid and the severity of the symptoms, and this was borne out by our more limited experience. Even in the most protracted cases the turbidity may persist. Only once was a clear fluid removed in an exacerbation. On several occasions a bloody fluid was removed in Case 18. In the wards at the same time was a remarkable instance of septic meningitis in which, after turbid fluid had been withdrawn at one puncture, at a subsequent one, before death, blood flowed from the needle, and post mortem there was extensive meningitis and a rupture of the basilar artery with hemorrhages.

The number of the organisms found bears no constant relation to the intensity of the symptoms. In acute cases they are present, as a rule, in large numbers. The later the disease, the less likelihood is there to find the diplococcus intracellularis in the fluid; but we have found them in the second, third, fourth, fifth and seventh week. The following are some of the days on which the organisms were found: 17th day, 14th day, 25th day, 31st day, 41st day and 19th day.

Has the lumbar puncture any therapeutic value? Williams, of Boston, states that he has seen beneficial effects, and there are a few cases in the literature in which the severity of the symptoms were promptly mitigated by the removal of a variable amount of the spinal fluid. Wentworth (whose experience has been very large), speaking of these cases, says: "I have never seen any such cases, though constantly on the watch for them. A temporary relief, lasting for a few hours, has followed the operation in a few cases, but the same remissions frequently occur without any treatment." Netter says that he has seen convulsions, which had lasted for a long time without intermission, cease after the withdrawal of only about two drachms of fluid.

We have given this point our closest attention, and many times have performed the puncture directly for its supposed benefit. In Case 8 the note reads: "Much better after the first puncture; brighter every way." Case 9, puncture at 11 A. M.: "Patient's condition has greatly improved; the muttering has ceased, and the irregular movements are less marked." To Case 16 I may refer more fully. It was an example of the chronic form, in which the patient lingered for nearly three months. The accompanying table has been prepared by Dr. Marshall, one of my house physicians.

It gives the day of the disease, the amount of fluid withdrawn, the character of the exudate, the microscopical appearances, the culture results, the leucocytosis and the effect (?) of the puncture on the temperature. The first puncture, made on the 29th day of the illness, was negative. From the second puncture 100 c. c. of a yellowish turbid fluid was withdrawn, which contained pus cells and intracellular cocci in abundance and the cultures were positive. In all 17 punctures were made between the 29th and the 75th day of the disease, of which 14 were positive. A turbid pale-yellow fluid was removed at each tapping. On five occasions 100 c. c. or more were obtained, once 125 c. c. and once 126 c. c. Following the first two effective tappings the patient appeared better, the temperature dropped and he seemed much brighter, but he soon became worse, and the fever rose. Following the sixth, seventh, eighth and eleventh punctures the temperature fell, 4.5°, 3.8°, 4.2° and 5.8°. There was no change in the general condition, though he sometimes was a little brighter, and the drop in fever followed so directly that it seemed only natural to attribute the good results to the lumbar puncture. The thirteenth puncture, however, was negative, yet the temperature fell 5.1°, and after the fourteenth tapping the temperature rose 2.6°. Evidently not the withdrawal of the fluid, but the peculiar character of the disease, already spoken of, was responsible for the remissions. The chart illustrates further the persistence of the leucocytosis and the sterile characters of the fluid after the 44th day. I have here for demonstration the lumbar portion of the cord and its membranes. The position of the last puncture can be seen and the repeated operations have caused a slight hemorrhagic pachymeningitis.

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[1] Read before the West London Medico-Chirurgical Society, June 16, 1899. — From advance sheets courteously furnished by the editor of the West London Medical Journal.

CASE XVI. — KRATZ. — LUMBAR PUNCTURE CHART.

Puncture No.	Day of Disease.	Amount.	Character.	Microscopically.	Cultures.	Leucocytosis.	Temperature.
1	29	Negative.	....	....	....	......	Unchanged.
2	31	100 c. c.	Yellow ; turbid.	Pus cells ; intracellular diplococci.	Positive.	17,400	Dropped 2.4°
3	35	125	Yellow ; turbid.	....	Positive.	25,300	" 1.0°
4	37	90	Pale yellow ; turbid.	Pus cells ; no cocci.	Negative.	19,900	" 2.0°
5	40	85	Pale yellow.	Pus cells ; no cocci.	"	28,000	" 1.0°
6	44	126	Pale yellow ; cloudy.	Intracellular ; diplococci.	"	15,000	" 4.5°
7	46	100	Pale yellow ; turbid.	Pus cells ; no cocci.	"	22,000	" 3.8°
8	48	50	" "	" "	"	19,000	" 4.2°
9	54	30	" "	" "	"	23,600	Rose 0.8°
10	59	Negative.	....	....	....	......	Unchanged.
11	59	100 c. c.	Cloudy.	Pus cells ; no cocci.	Negative.	......	Dropped 5.8°
12	62	60	Cloudy; blood-tinged.	Pus cells ; no cocci.	"	18,000	" 3.4°
13	68	3	....	....	"	32,000	" 5.1°
14	70	75	Cloudy.	Pus cells : no cocci.	"	47,500	Rose 2.6°
15	73	Negative.	....	....	....	23,000	Unchanged.
16	75	Negative.	....	....	....	......	"
17	75	8 c. c.	Cloudy.	Pus cells ; no cocci.	Negative.	......	"

IV. SPORADIC CEREBRO-SPINAL FEVER.

To what extent do isolated cases of cerebro-spinal fever occur in the intervals between the epidemic prevalence? What is the nature of the primary suppurative meningitis which is met with from time to time in all communities? Neither hospital statistics nor the ordinary death returns give trustworthy answers to these questions. The diagnosis of meningitis is often doubtful, and it is very probable that a great many cases are returned as cerebro-spinal meningitis which are the cerebral forms of typhoid fever or of pneumonia. It is surprising how much confusion there is in the diagnosis of the different forms, and the urgent need of a more accurate recognition of the varieties is well shown by the number of terms used in the tabulation of cases. Thus, not to speak of the tuberculous form, which is often spoken of as basilar meningitis, the terms most frequently used are acute meningitis, meningitis simplex, purulent meningitis and septic meningitis. In a recently issued report on sporadic cerebro-spinal meningitis from the Philadelphia Hospital, by L. N. Boston,[10] exclusive of the tuberculous variety, the following names occur as designating the varieties of acute meningitis; lepto meningitis, basilar meningitis, pachy and basilar meningitis, basilar and lepto meningitis, hemorrhagic meningitis and purulent meningitis.

To reach uniformity in this matter is not at present possible, but we may welcome the steps which have been taken towards separating the different forms of the disease.

In the last Census Report of the United States, the returns for the census year 1890, a year in which cerebro-spinal fever, so far as I know, did not prevail to any extent in epidemic form, the number of deaths reported from cerebro-spinal meningitis was 3,333, a large percentage of these during the first year of life.

From the Fifty-ninth Annual Report of the Registrar-General, 1896, I gather that the deaths from cerebro-spinal fever in England from 1877 to 1896 (inclusive) have only once exceeded 50 per annum. There has been a great reduction in the return since 1887, 233 cases for the ten years ending 1896, against 406 for the previous decade. In Scotland there were only six deaths from cerebro-spinal fever in 1895, and five in 1896. In Ireland there were 76 deaths from this cause in 1896, and the same number in 1897.

From the records of two large metropolitan hospitals I have gleaned the following figures: At St. Bartholomew's, from 1860, cases with the diagnosis of cerebro-spinal meningitis occur in the years 1872, 1888, 1889, 1890, 1892, 1893, 1895, 1896, 1897 — 21 in all. In many years the word meningitis alone is used, in others the word spinal meningitis and meningitis simplex. Ormerod[11] gives an exceedingly interesting report on ten fatal cases from this hospital. Four of them occurred between March and June, 1890, at which time epidemic meningitis prevailed in the eastern counties. At St. Thomas's, since 1873, cases with the diagnosis of cerebro-spinal meningitis occur in the years 1895 and 1896 — seven cases in all. In the wards of the Royal Infirmary, Edinburgh, there were in 1891 three cases diagnosed as cerebro-spinal meningitis, in 1892 two cases, in 1893 one case.

In the United States and Canada the occurrence of sporadic cases of cerebro-spinal fever in the intervals between epidemics has long been recognized. In Montreal I performed post-mortem on at least three cases of acute purulent cerebro-spinal meningitis not associated with pneumonia or endocarditis, and not following otitis media or injury. As illustrating the liability to error, I may mention a case in which the diagnosis of cerebro-spinal meningitis was made in malignant small-pox; in another instance, with the same diagnosis, the case was a very acute typhoid fever, fatal within a week. In Philadelphia I saw only three cases.

At the Boston City Hospital, from 1880 to 1896, there were 39 cases diagnosed as cerebro-spinal meningitis with a mortality of 59 per cent. It is interesting to note that during the first five months of 1897, when the epidemic began, there were 42 admissions, a larger number than in the previous seventeen years. That the disease lingers in a city indefinitely after an outbreak has been the common opinion of all students of the disease, and any one who has had a large postmortem experience has met with sporadic instances of extensive suppurative meningitis, which he has not been able to regard as secondary to any existing condition. The Philadelphia records are interesting in this respect. As collected by Still from 1863, the figures illustrate very well the periods in which there were slight outbreaks, namely, 1864–65, and 1872–73. Pepper[12] completed the figures to 1892. and Dr. Abbott has sent me the figures up to date. They show from 1884 a progressive decline in the number of cases, which may in part have been due to more careful diagnosis. From this year, when there were 124 deaths, there was a gradual decline, and in 1891 there were only 23 deaths. From that year the figures, as sent me by Dr. Abbott, are as follow: 1892, 22 cases; 1893, 35 cases; 1894, 18 cases; 1895, 17 cases; 1896, 7 cases; 1897, 10 cases; 1898, 24 cases; 1899 (to and including April 31), 89 cases. Here, again, it is interesting to see how quickly the epidemic prevalence of the disease is manifest. During 1898 the disease was not recognized as prevalent in Philadelphia. During the present year a number of cases have occurred, and the deaths during the first four months have been 89.

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[10] Medical News, May 20, 1899.

[11] Lancet, 1895, No. 1.

In Baltimore. the figures for the past six years are as follow: 1893, 59 cases; 1894, 26 cases; 1895, 27 cases; 1896, 32 cases; 1897, 22 cases; 1898, 70 cases; during this year, the prevalence of the disease was recognized as occurring in a mild form through the city. During the first four months of the present year there has been an increase, and the deaths for this period have been 27.

Sporadic Cerebro-spinal Fever at the Johns Hopkins Hospital.— In the spring of 1898, the first cases of the epidemic form were admitted to hospital, and in all 18 cases have been under treatment. Prior to this date, only four cases had been admitted, which we regarded as sporadic forms of cerebro-spinal fever, three within a few days of each other, in 1893, and one, a chronic case, in 1892, which has been reported.[13]

Case I. Patrick R. (Hospital No. 7,233), age fifty-seven, admitted May 1, 1893. The patient had been drinking heavily, and when admitted was delirious, mumbling and muttering to himself, and picking at the bedclothes, and he resisted actively any attempt to examine him. His friends stated that he had been in this condition for about a week. His temperature on admission was 97.5°, pulse 68, respirations 16. He had no skin-rash and no symptoms suggestive of meningitis, and we regarded the case as one of delirium tremens. As shown in the annexed chart (Chart VIII), he had no fever until the 5th, four days after his admission. There was then a rapid rise to 105°; the respirations increased from 28 to 40; the pulse rose to 112. Throughout the 6th the temperature remained high, falling on the morning of the 7th to 103°. The respirations rose to 48. He was a little cyanosed, could not be roused, and he died at 8 a. m. on the 7th.

The autopsy (No. 413), showed extensive yellowish purulent exudate over the hemispheres. There was a turbid exudate at the base and along the Sylvan fissures; the ventricles contained an excess of cloudy fluid. The cord was not examined. Cover-slips showed rounded cocci in pairs, chiefly in the mono- and poly-nuclear cells. Cultures showed diplobacilli. The lungs showed slight bronchopneumonia and the pneumococcus was isolated.

Case II. Wm. F., age twenty-seven (Hospital No. 7,282), admitted May 3, 1893. The patient was apparently very deaf, and was noisy and delirious when admitted, and he had no friends from whom any history could be obtained. The temperature on admission was 99°, pulse 86, respiration 20. During the night he became very noisy and delirious, and the pulse was irregular. On the following morning examination of the thoracic and abdominal organs showed nothing of any special moment. The spleen was not palpable. The temperature was 99°, pulse 96, respirations 24. On the evening of the 4th and throughout the night the patient became very noisy and had to be transferred to the isolating ward. It was noticed on admission that he was very deaf, and this seemed to increase. On the afternoon of the 4th temperature began to rise, and at 6 p. m. reached 102.5°. The pupils were equal; the pulse was 96, irregular. The patient resisted strongly any attempt to bend the head, and the neck was held very rigid. There was general hyperesthesia, and he cried out whenever he was touched. A petechial rash was noticed this afternoon for the first time over the abdomen. At 8 p. m. the temperature rose to 103°. He became very much worse; the pulse became more rapid, 112, very irregular, and he died a little after two in the morning.

Autopsy (No. 412): A purulent grayish-yellow exudate over the hemispheres, also along the pons and medulla, and the whole length of the spinal cord, which in the lumbar region reached a thickness of 8 millimetres. The ventricles were distended with a turbid yellowish fluid. In the posterior cornua there was a greenish exudate. Cover-slips from the meninges showed numerous leucocytes and large cells containing round diplococci. Pus from the ventricles showed many cocci, single and in pairs, chiefly in cells. Some of the larger cells were packed with these cocci. Cultures were negative. Inoculations of a rabbit and a mouse were also negative. At that time we had not recognized the diplococcus intracellularis of Weichselbaum, but the description of the organism, the position in such numbers within the cells, the failure to grow in cultures, and the negative results of experiments on animals, make it more than probable that we were dealing with this organism.

When these cases occurred the disease was not prevailing in Baltimore, and, except in New York, it was not epidemic anywhere in the country, so far as we could ascertain. Three days after the death of Case I a lad was admitted with a most remarkable family history of the disease. The father, a very intelligent man, gave the following details of the cases:

Wagner Family.— (1) A son, a young man of about twenty years, returned home on Monday, February 7th, complaining of a terrible pain in his head. He had fever with much vomiting, and his head and neck were arched. He was very delirious, became rapidly worse, and died on Saturday, the 12th; (2) a sister who had helped to nurse her brother was taken ill on Monday, the 15th, with similar symptoms, and died in four days; (3) a second sister became affected in a few days and for two weeks was desperately ill; she then began to improve and is now well; (4) the mother, who was worn out nursing the children, was taken ill on March 17th and died in two days. She had slept in the same bed with No. 5, who was admitted to the hospital.

Case III. W. W., age fifteen, No. 5 of the Wagner family, was admitted May 12th, in the eighth week, of an illness which the doctor described as cerebro-spinal meningitis, and of which his mother and a brother and sister had died. The patient presented a dull, heavy appearance, and for some days did not appreciate his surroundings and appeared confused. He had delusions and hallucinations, and thought he saw his mother and sister in the room with him. He had no fever, and there was no rigidity of the head or neck. The optic nerves looked normal. He improved gradually and was discharged well June 10th.

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[12] American Text-book of Medicine, vol. i, p. 163.
[13] Johns Hopkins Hospital Bulletin, 1892.

I can find no parallel to this record in the history of sporadic cerebro-spinal fever. The figures which I have given for Baltimore show that in the year 1893 a considerably larger number of cases occurred than in the four succeeding years, and the admission of these three cases in rapid succession excited our interest, but from this time until the spring of 1898 we saw nothing further of the disease. In the history of the epidemic form it is not very uncommon to find two or three cases from one house. Netter refers to Sewall's report of six children attacked in one family at the beginning of the New York epidemic in 1872, and he quotes from Thorne the statement of Morcieca that in Malta seven cases occurred in a family of nine persons. Such facts speak strongly for the contagious nature of the disease. Under ordinary circumstances, however, it is exceedingly rare to find more than one case in a family, either in the sporadic or epidemic form, and I know of no case in our recent American experience in which a physician or nurse has been attacked, or in which cases have developed among other patients in a hospital. We know nothing of the conditions under which the disease assumes this family malignancy, as it may be termed. In this respect it resembles pneumonia, not highly contagious as a rule, but which may at times, in a family or institution, present a high degree of malignancy.

Bacteriology of Sporadic Cerebro-spinal Fever.— In a number of cases of sporadic cerebro-spinal meningitis the Weichselbaum organism has been found. The case reported by Stewart and Martin[14] is of peculiar interest, inasmuch as the epidemic form of the disease has not prevailed in Montreal for many years. It is to be noted, however, that the patient prior to her illness had been spending a few weeks in Boston, where the disease had been prevailing. An unusual point in this case was the occurrence of an acute purulent pericarditis in addition to the usual cerebro-spinal lesions. The cultures showed the diplococcus intracellularis.

By far the most suggestive contribution to this question made of late years is by Dr. George F. Still,[15] of the Great Ormond Street Hospital for Sick Children. In a study of the form of meningitis known as the simple posterior-basic of infants, he isolated from seven or eight cases a diplococcus intracellularis. The frequency of this form of meningitis may be gathered from the fact that in ten years there were at this hospital 49 fatal cases, verified by autopsy. The smallest number in any one year was two, and the largest number seven. All of these cases were sporadic; none of them formed a part of any outbreak which could be considered epidemic. Clinically the disease presents certain differences from the ordinary type of cerebro-spinal fever, attacking young children, chiefly in the first year of life, and as a rule, is very much more chronic, though there are forms of cerebro-spinal fever which are quite as protracted. Skin rashes are rare, particularly herpes. The most interesting point of similarity determined by Still is the periarthritic affections in certain of the cases of posterior meningitis, involving, as in epidemic form, the capsule of the joint, and the sheaths of the tendons. He determined also in one case the presence of the diplococcus in exudate.

The problem is one which deserves the closest attention, and in every case of sporadic meningitis a careful bacteriological examination should be made for the meningococcus and the pneumococcus, as we are still ignorant of the proportion of cases due severally to these organisms. Two points remain for discussion, namely, the incidence of acute non-tuberculous meningitis in hospital work, and the clinical varieties of the pneumococcic form.

Through the kind permission of my colleague, Professor Welsh, one of his assistants, Dr. W. G. MacCullum, has analyzed from the pathological department of the hospital the cases of meningitis in which bacteriological examinations have been made.

The 25 cases may be divided into four groups:

(*a*) *Cerebro-spinal Fever.* — Six cases (Nos. 412 413. 1,104, 1,189, 1,314, and 1,362).

(*b*) *Pneumococcic Meningitis.* — Eight cases (Nos. 384, 478, 619, 746, 989, 1,082, 1,151, and 1,362).

(*c*) *Pyogenic Meningitis*, in which streptococci or staphylococci, singly or in association, were found — seven cases (Nos. 694, 1,065, 1,092, 1,247, 1,166, 1,363, and 1.364).

(*d*) *Miscellaneous.*— Four cases, two of which (Nos. 854 and 1,091) showed peculiar unidentified bacilli.

The pyogenic forms of meningitis do not concern us here; no case of primary streptococcus or staphylococcus meningitis came to autopsy. I have already referred to the chronic forms of cerebro-spinal fever in which the pyogenic cocci may alone be present at the time of death.

The meningitis with which the diplococcus lanceolatus is associated, in many respects the most important variety, deserves a separate consideration.

PNEUMOCOCCIC MENINGITIS.

As the pneumococcus has long been recognized as the most important organism in the production of meningitis, the first question to be considered is how far sporadic cases of cerebro-spinal meningitis are due to it. Of the 25 cases of meningitis in the pathological department of the Johns Hopkins Hospital, in 8 the pneumococcus was isolated from the exudate. Bacteriological statistics everywhere show the great importance of this organism as a factor in the causation of meningitis. Of 20 cases examined by Councilman, Mallory and Wright, there were 10 cases in which the pneumococcus was found, 8 of these secondary to other conditions, in 2 only primary. In 8 cases of secondary meningitis the streptococcus was present. Netter's experience is particularly interesting. To April, 1897, he had examined bacteriologically 61 cases of meningitis, with the following results: "Pneumococcus in pure culture 35 times, the same associated with the streptococcus and with the staphylococcus each 1 time, the streptococcus alone 13 times, the diplococcus intracellularis meningitidis 3 times. the staphyloccus pyogenes aureus and the bacillus of Friedländer each 2 times, and the coli bacillus. the influenza bacillus, a fine bacillus. and a pyocyanic and saprophytic bacillus each 1 time." We may recognize three groups of cases of pneumococcic meningitis:

I. *The Meningitis is a Complication of Lobar Pneumonia.* — In Montreal my attention was called to the great frequency of this association, in 8 of 100 consecutive autopsies,[16] and since these observations I have had opportunities of studying a number of cases, though I have never met with so large a proportion. By far the most important contributions to the subject have been those of Nauwerck[17] and Netter.[18] Of the 29 cases analyzed by Nauwerck, in 4 the convexity of the brain was alone involved, in 16 both cortex and base, and in 7 the cortex, base and spinal cord. Netter's study, the most complete that has yet appeared, contains an analysis of 124 cases collected from the literature. In the recent monograph on pneumonia by Aufrecht,[19] 7 cases of meningitis were found in 253 autopsies, and of 1,501 cases of pneumonia, in 10 the diagnosis of meningitis was made, in 3 of which recovery followed. Of the 8 cases of pneumococcus meningitis in the department of my colleague, Welch, in only 4 was the condition associated with lobar pneumonia.

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[14] Montreal Medical Journal, March, 1898.

[15] Journal of Pathology and Bacteriology, vol. v, 1898.

[16] The Morbid Anatomy of Pneumonia, Canada Medical and Surgical Journal, May, 1885, and the Goulstonian Lectures on Malignant Endocarditis, British Medical Journal, 1885, No. 1.

II. *Pneumococcic Meningitis from Local Infection.* — In this exceedingly important group the infection may come from the nose or the adjacent sinuses, from the ears, or may follow an injury to the skull, or an operation. In two of the three cases in the series analyzed by Dr. MacCallum there was fracture of the base of the skull. The third, a child, age six, had suppuration of the nasal mucous membrane and adjacent sinuses. In this connection the importance of the pneumococcus is universally recognized, and many cases are on record of infection from an otitis media.

III. *Primary Pneumococcic Meningitis.*— A number of observers have isolated the pneumococcus in primary suppurative meningitis. The records cannot be regarded, however, as entirely trustworthy, since it is only within the past few years that bacteriologists have learned to recognize the differences between the pneumococcus and the diplococcus intracellularis. Subsequent study must determine in what proportion of cases of sporadic meningitis the pneumonococcus exists, and in how many the diplococcus intracellularis.

The primary pneumococcic meningitis may develop in a person in good health, but more frequently there is a general pneumococcus infection in a debilitated individual, or in one with chronic disease. The meningitis may be present along, or, as is so common, in association with endocarditis. Of the cases examined in the post-mortem room of the Johns Hopkins Hospital, one (No. 989), a man, age forty-four, had a general infection with the pneumococcus and meningitis. Another case (No. 1,206), with a general infection, acute endocarditis and meningitis, is not included in this series, as a partial autopsy only was allowed, and but a small portion of the lumbar cord was examined.

CLINICAL FEATURES OF PNEUMOCOCCIC MENINGITIS.

I shall now refer to certain clinical features of these three groups of cases:

(*a*) *Pneumonia with Complicating Meningitis.*—Is the case one of cerebro-spinal fever with pneumonia or of inflammation of the lungs with an added meningitis? This question does not often arise now at the bedside, as it is most exceptional for the meningitis of pneumonia to present the symptoms of cerebro-spinal fever, and in a dubious case occurring during an epidemic the lumbar puncture (as in a case to be referred to in a few minutes) may be relied upon to clear up any doubts. The most valuable clinical record of meningitis in pneumonia is to be found in Nauwerck's paper. The histories, 17 in number, are very full and complete, and in every case accompanied with a post-mortem report. He has added a series of 12 cases from the literature, making 29 in all. All of the cases were above the twentieth year of age — a striking contrast to cerebro-spinal fever, in which a large proportion of all the cases are in the young. A second point is the latency of meningitis in pneumonia, which is much more often recognized in the dead-house than in the wards. Netter states that fully one-half of the cases are of this latent type. Of the cases I saw in Montreal I remember but one in which the diagnosis was made during life. Huguenin, referring to this obscurity, says: "We know no symptom which is constant in all cases or which may not be present in an identical manner in other conditions." Headache, early delirium, deepening into unconsciousness, are present in all cases. This is a consequence of the more common involvement of the cortex of the hemispheres. As Leichtenstern remarks, the mind may remain clear throughout the course of a case of cerebro-spinal fever. Spinal symptoms are rare; in only seven of the cases analyzed by Nauwerck was there rigidity of the neck muscles. Strabismus was present in one-fifth of the cases, ptosis only once. The importance of lumbar puncture cannot be too strongly emphasized. A recent case, which occurred while cases of cerebro-spinal fever were in the hospital, illustrates this so well that I give an abstract of it:

Charles E., age fifty-two (Hospital No. 26,417), was admitted May 6, 1899, with pneumonia of the right upper lobe of about eight days' duration. He was in a semi-comatose condition, with a temperature of only 99°, respirations 32, pulse 108. There was a pneumonia of the apex of the right lung. The day after admission it was noted that his arms and legs were very stiff; Kernig's sign was well marked, and there was some rigidity of the neck. The patient, however, responded to questions. Lumbar puncture was made in the third interspace, and 5 cubic centimetres of a perfectly clear limpid fluid obtained. Lumbar puncture was made again on May 10th, and 30 cubic centimetres of a perfectly clear fluid obtained, negative on cover-slips and culture. For the next three days he had a good deal of tremor. Kernig's sign was present, and there was still some rigidity of the arms and of the neck. The leucocytes ranged from 16,000 to 24,000 per cubic millimetre. On the 14th lumbar puncture was performed for a third time, and a slightly turbid fluid obtained, from which on cover-slips the pneumococcus was obtained. The patient died on the evening of the 14th. The autopsy showed a pneumonia of the right apex, a very slight purulent exudate at the base, some turbid fluid in ventricles, and a small amount of turbid cerebro-spinal fluid, but no positive exudate on the spinal meninges. There was an ulcerative endocarditis of the aortic valve. The pneumococcus was isolated from the meninges, the heart-valves, and from the lung. A very interesting feature in this case was the normal temperature on the 11th, 12th and 13th days of the disease, and the high temperature on the 14th and 15th days, ranging to 105° and 106°.

And lastly, a most important difference between the meningitis complicating pneumonia and cerebro-spinal fever is the almost universally fatal course of the former. Nauwerck describes the complication as invariably fatal, and he is not able to convince himself that in any one of the reported cases of recovery in the literature meningitis was actually present. Netter speaks somewhat more hopefully, and states that recovery may occur. He gives two cases from the literature, both in children. In one, a child of five, in which the crisis occurred on the sixth day, the signs of meningitis were the presence, during the first few days, of headache, unequal pupils, and ptosis. Aufrecht, in his recent monograph,[20] also speaks of the possibility of recovery. Of ten cases of meningitis in 1501 of pneumonia, three recovered. Netter,[21] in his article in the "Twentieth Century Practice," commenting upon the statement by Wentworth that pneumococcal meningitis is always fatal, states that "as early as 1887 I demonstrated, however, that its curability is one of the most evident characteristics of the pneumococcal meningitis." So far as I can gather, there is nothing in his essay to justify such a statement, since, as I have mentioned, he gives but two instances of recovery.

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[17] Deutsches Archiv f. klin. Med., Bd. xxix.
[18] Archives Générales de Médicine, 1887.
[19] Nothnagel's Specielle Pathologie und Therapie, Bd. xiv.

Personally, I have never recognized recovery in pneumonia complicated with meningitis, and the literature of the subject bears out strongly the view that one of the most striking differences between the meningitis of pneumonia and cerebro-spinal fever is the almost invariably fatal termination of the former.

(*b*) *Pneumococcic Meningitis from Local Infection.* — Two of the three cases in this group were surgical: one (No. 746) followed removal of the bones of nose and orbit; the other (1,151), a fracture of the base of the skull, involving the cribriform plate of the ethmoid. In both the pneumococcus alone was isolated from the exudate in the cerebral meningitis. In two of Councilman's eight cases the infection followed fracture, in one otitis media. Cases of this group do not so often appear in the medical wards, but last year we were particularly interested in a case in which the infection started from the nose and accessory sinuses, though the possibility has to be considered of extension from the meninges. An abstract is worth quoting:

Anna C., age six (black), admitted March 31, 1898. Her previous history was negative. Five days before entrance, directly after supper, she vomited and complained of headache; later in the evening she became delirious. Two days after the head was held stiffly, and she had much pain in the back of the neck. She had fever, rapid pulse, loss of appetite, and constipation. On admission she was conscious, but very irritable and difficult to examine. The head was arched back and could not be brought forward. The pupils were equal and reacted to light. There was a marked slight internal strabismus. There was nothing of moment found in the examination of the chest and abdomen. She was very tender in the suboccipital region, but there was no sign of disease of the cervical spine. Lumbar puncture on the 1st was negative. For the first week the condition remained about the same; the child could be roused, and answered questions, the strabismus persisted; there were no changes in the optic nerves. The temperature ranged from 100° to 104°. The arching of the head and neck continued; the eyes looked directly upwards. On the 17th a rash appeared, a diffuse erythema over the face, neck and chest, with papules. The rash faded in three days. The temperature ranged from 102° to 104°. On April 19th a profuse, purulent discharge appeared from the nose, which showed the pneumococcus on cover-slips, but in cultures only the staphylococcus aureus grew. She could still be roused; the attitude remained as shown in the photograph. No optic neuritis. Throughout the 18th the temperature dropped from 105° to 97° on the morning of the 19th, and continued about 97° until her death on the morning of the 21st. One of the most remarkable features was the retention of consciousness to within a week of her death.

The autopsy (No. 1,082) showed exudate over the sulci of the hemispheres. The base, from just behind the optic commissure over the pons and lateral lobes of the cerebellum, was covered with a soft yellow exudate. The posterior surface of the spinal cord showed the same. The ventricles were much distended with a turbid fluid. There was suppuration of the mucous membrane of the nose, and of the ethmoidal and sphenoidal sinuses. Cultures showed the pneumococcus in the cerebro-spinal exudate, and from the nasal pus the pneumococcus and the staphylococcus aureus.

(*c*) *Primary Pneumococcic Meningitis.* — Future investigations will decide the proportion of cases of primary cerebro-spinal meningitis due to the pneumococcus and to the diplococcus intracellularis; and it will be an exceedingly interesting study to determine whether there are clinical differences such as separate so decidedly the meningitis complicating pneumonia from the cerebro-spinal fever. Judging from the bacteriological records given by Councilman, Mallory and Wright, and those of the Pathological Laboratory of the Johns Hopkins Hospital, the primary pneumococcic meningitis is rare in America — certainly much less infrequent than the secondary forms. Two of Councilman's ten cases, both infants, one of ten months, the other of six days, were primary. I cannot gather from Netter's statistics[22] how many of his cases were *primary;* nor without consulting the original can one say how many of the 13 cases of sporadic meningitis studied by Malenchini (quoted by Netter) belonged to this group. Of our eight cases, as stated, only two were primary. One of these is worth quoting:

G. C., age forty-four (white), admitted at 6.30 P. M. on September 1, 1887, in an unconscious state. When seen by his brother on Saturday, the 29th, he was quite well. After going to bed on Sunday evening, the 30th, he had a severe chill. On Monday he was too ill to go to work. In the evening he became delirious, and ever since has had fever, has been restless, difficult to restrain, and very noisy. On admission the temperature was 105°; the pulse 136 and small. Dr. McCrae saw him a few minutes after he had been put to bed, and took very full and careful notes of the condition. The face was flushed and he looked distressed. There was no strabismus; the pupils were dilated and inactive. The head and neck were held stiffly, and the arms were held firmly flexed on the chest. There were no signs of pneumonia; the heart sounds were clear. The abdomen was not distended, there were no rose-spots and the spleen could not be felt; there were no herpes. The skin had a diffuse mottling, but no purpuric spots were seen. There was no urethral discharge. The leucocytes were 13,500 per centimetre, no alteration in a differential count of 500. The Widal reaction was not present. At 10 P. M. the temperature had reached 106° and he was given a bath at 80°, with ice frictions, which reduced the rectal temperature to 103°. At 11 P. M. the body seemed to be held much more stiffly. At 12 midnight he was much worse, and at 12.40 A. M. he died, about three days and three hours from the time of the initial chill.

The post-mortem (No. 989) showed a diffuse purulent meningitis of the hemispheres; the base much less involved and the ventricles not at all affected. The cord unfortunately was not examined. There was a recent diffuse nephritis, and the urine in the bladder contained albumin and tube casts. There was a general pneumococcus infection, no pneumonia or endocarditis, and the pneumococcus was separated in pure culture from the meningeal exudate.

V. NOTE ON THE TREATMENT OF CEREBRO-SPINAL FEVER.

In our series of cases we have used no special drugs. Morphia has been freely given to control the pain. Ice sponging has been employed whenever the temperature reached above 102.5°. Our mortality, considering that the cases were, as a rule, quite severe, has been low, only 8 of 18 cases in the hospital, and 9 among the 21 cases which I have seen.

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[20] Nothnagel's Specielle Pathologie und Therapie, Bd. xiv.

[21] Archives Generales de Medicine, 1887, 1., p. 273.

[22] Twentieth Century Practice, vol. xvi, p. 193.

I have already spoken of the possible benefits in certain cases of the relief of pressure by the withdrawal of cerebro-spinal fluid.

In two of our cases the spinal canal has been opened, drained and irrigated. Winter,[23] in tuberculous meningitis, removed the spinal process of the second lumbar vertebra and drained the spinal canal. Von Ziemssen first attempted to use local therapeutics to the membranes of the cord by injecting a weak solution of iodine in a case of meningitis; and later Sahli practised permanent drainage through a canula and catheter. So far as I know, an extensive laminectomy had not been done for acute spinal meningitis until our first case, November 6, 1898, in which the operation was suggested and performed by Dr. Harvey W. Cushing, the first assistant in the surgical clinic of my colleague, Professor Halsted. The case has already been given in abstract under the section on bacteriology[24] as the one in which the staphylococci only were present at the time of operation. The spinal canal was thoroughly irrigated with salt solution and a quantity of purulent exudate washed out. No change followed in the existing paraplegia. The bladder and the kidneys became infected, and he died about two months after the operation. The paraplegia persisted. At autopsy the spinal meninges were smooth and looked perfectly normal. It was impossible to say where the dura mater had been incised, and there were neither adhesions nor areas of thickening on the pia-arachnoid. There were extensive changes in the cord itself and in nerve roots.

In Case 12 laminectomy was performed on the 4th day by Dr. Cushing. The patient was very ill, and the spinal symptoms were especially pronounced. A catheter was passed beneath the dura mater, and the membranes drained and irrigated with salt solution. For several days he seemed much better. He developed a hemorrhage, cystitis and pyelonephritis, and died on the sixth day after operation.

Dr. Musser, of Philadelphia, has also had an unsuccessful case. Dr. Rolleston and Mr. Herbert Allingham have reported[25] a case of sporadic cerebro-spinal meningitis in which the patient recovered after laminectomy and drainage. On the principle of a desperate remedy for a desperate disease, the operation (which has been criticised adversely in an editorial note in the *Philadelphia Medical Journal*) seems justifiable in certain severe cases, in which, as in our first case, the spinal symptoms were very marked.

Officers of the New Jersey State Medical Society. — At the meeting of the Medical Society of the State of New Jersey held at Allenhurst, June 27th, 28th, and 29th, the following officers were elected for the ensuing year: President, Dr. Luther M. Halsey. Williamstown; Vice-Presidents, Drs. William Pierson, Orange, John D. McGill, Jersey City, and E. L. B. Godfrey, Camden; Corresponding Secretary, Dr. E. W. Hedges, Plainfield; Recording Secretary, Dr. William J. Chandler, South Orange; Treasurer, Dr. Archibald Mercer, Newark.

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[23] Lancet, 1891.

[24] Reported in Boston Medical and Surgical Journal, December 29, 1898.

[25] Lancet, 1899

Original Articles.

THE EXAMINATION OF STAINED SPECIMENS OF BLOOD IN ITS APPLICATION TO CLINICAL WORK.[1]

BY HENRY F. HEWES, M.D., BOSTON.

The utilization of the examination of the blood as an aid to diagnosis in ordinary clinical work is far less common than its value in this regard warrants. This is due primarily, in my opinion, to the almost total inexperience of practitioners in general in the practical application of this method of clinical diagnosis. Most physicians' blood-learning is entirely from the books, and there is consequently an almost total lack of exact knowledge in regard to the appearances of the blood, and the interpretation of these appearances in the various pathological conditions, where they may have special significance.

One cause of this failure of many physicians to acquire this experience in blood examination is an exaggerated idea of the complexity of the methods involved. For this incorrect idea in regard to the complexity of the technique and the amount of labor necessary to obtain the required information from blood examination we have to thank the text-books. In the chapters upon blood examination contained in most of these books, the greatest prominence is given to the description of those methods of work involving the possession of expensive apparatus and the output of much labor, as the blood counts or colorimetric methods, while some of the simpler and much more useful methods, as the examination of a stained specimen, are given but secondary attention, or at least their wide applicability to general work is not indicated.[2]

It is frequently said that the value of the results obtained from a blood examination is in most cases not in proportion to the labor involved in obtaining them, so that the use of the blood examination as a routine method in clinical work is not to be thought of. And this would be true if we had to depend upon all these methods for all our information concerning the blood.

But as a matter of fact such is not the case. A large per cent. of all the information which we can obtain from the blood in a majority of cases can be obtained by the application of a single method, and one so simple in its technique that it can be applied by any practitioner who owns a microscope. This method is the now well-known one of examination of a stained specimen of the blood.[3]

This method has been in the general mind relegated to the use of specialists, and its application confined to the diagnosis of the severe affections of the blood, the severe anemias and leukemias. In reality its use is by no means confined to these conditions. The results obtained from its application may be of value in a considerable number of the common conditions met with in regular practice, as in the disclosure of the existence of an anemia, a leukemia or other form of leucocytosis, or of malaria. And its application is simple to any one who has had training in it.

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[1] Introductory lecture to the course in hematology at the Harvard Medical School.

[2] Ehrlich's latest publication upon the subject, "Die Anæmie," is not open to this criticism, as here the study of stained specimens is given due prominence. Die Anæmie: Ehrlich u. Lazarus. Specielle Pathologie u. Therapie, Nothnagel, Bd. viii., Theil 1, H. 1.

[3] There are two kinds of blood staining, the staining of moist films and of dry films; the former is used in histological study, the latter only is used in clinical work.

For this application there is necessary at the bedside simply a few clean seven-eighth-inch cover-slips and a needle, which articles every practitioner can carry regularly.

The blood is spread upon these cover-slips, and dried in the air. The slips are then taken to the office and at any time within a few days fixed by heating at 110° C. for ten minutes or by placing in some fixing solution (as absolute alcohol, alcohol and ether, or corrosive sublimate), and stained.

There are several methods of blood staining which may be used, the special method employed being dependent to some extent upon the special purpose for which the blood is stained. For general work the following modified Ehrlich staining method gives the most satisfactory results for all purposes. The blood, which has been properly fixed, is subjected for four minutes to an Ehrlich three-color mixture, prepared according to the following formula:

Ehrlich-Biondi-Heidenhain, three-color mixture .	1.7	grammes
Acid fuchsin	0.05	grammes
Absolute alcohol	2	c. c.
Distilled water	18	c. c.

The specimen is then washed in water and subjected for from one-half second to ten seconds to Löffler's solution of methylene-blue (saturated alcoholic solution of methylene-blue, 30 cubic centimetres, potassic hydrate [1–10,000 solution], 100 cubic centimetres). The specimen is then again washed, dried and mounted in balsam.[4] It may then be submitted to microscopic examination.[5]

In a majority of cases this examination will serve to definitely rule in or rule out the existence of a pathological condition of the blood and to determine the nature of this condition. Then if pathological conditions are found about which more definite knowledge is desired, or if any doubt remains in regard to the blood in the case, the examination may be reinforced or continued by the application of the other methods, the blood counting and the hemoglobin estimation. Otherwise we may rest on the finding of the stained specimen.

For the application of this method of the study of blood to clinical work there is necessary, besides a certain facility in this process of preparation of the specimens, a certain amount of training in the examination of specimens of normal and pathological blood prepared by this method.

The first requisite is a thorough familiarity with the appearance of stained specimens of normal blood. If we study a good stained specimen of such blood we shall see that the specimen contains two forms of corpuscular elements, the red corpuscles, which are round, yellow-stained, disc-shaped plastids, and the white corpuscles, which are nucleated, granular cells taking varieties of stains according to their kind. The red corpuscles will be practically all of a round or slightly oval shape, of a uniform size, the diameter varying from 6 to 9μ, and of the same intensity and reaction in color. The centre of each corpuscle will appear as a white zone of a definite size.

This uniformity in shape, size, color reaction, and in the size of the white centre of the red corpuscles is a striking and important characteristic of a specimen of normal blood. It is so regular that a general lack of such uniformity in a given specimen may in itself be taken as conclusive evidence of the existence of a condition of anemia. A few degenerate forms will of course be found in every specimen, since there are always some corpuscles dying and disintegrating in normal blood, but they are so few as to be scarcely noticeable. The uniformity is maintained of course only in fields where the spreading is perfect. In parts of every cover-slip there will be seen corpuscles of irregular form, without the white centre or biconcave appearance. These are simply the results of injury in the method of preparation of the specimen. They are flattened or all drawn out in one direction, and can easily be distinguished from corpuscles which are naturally abnormal.

The white corpuscles appear as granular nucleated cells of varying size, but as a rule larger than the red corpuscles. The number of these white corpuscles upon a full thin spread in which the red corpuscles lie separately will vary, corresponding to the number in blood and the thickness of the spread. An average normal specimen contains 200 to 400. The comparative frequency of these leucocytes in normal slides becomes fixed in the mind after some experience in this examination, so that one can judge with fair accuracy from running over one of these slides whether the number is normal or increased in the blood. One may even by a careful count of fields measured by a measured eye-piece form an accurate estimate of the actual proportion of the white corpuscles to the red and consequently, unless the red corpuscles show evidence of marked anemia (which would suggest a diminution in their number), an estimate of the actual number of leucocytes in the blood.

Three varieties of white corpuscles can be distinguished, the basis of distinction being the staining reaction of the protoplasm when subjected to a triple stain.[6]

These three varieties are named respectively neutrophiles, basophiles and oxyphiles in accordance with the neutral, basic or acid stains of the granules or structural substances contained in their protoplasm.

The most common form will be a cell usually two or three times the size of a red corpuscle, containing a blue polymorphous neucleus — often *apparently several* nuclei, surrounded by a protoplasm studded with small irregularly-shaped lilac-colored granules — the so-called *neutrophile:* the *polymorphonuclear neutrophile* — the *polynuclear neutrophile.*

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[4] The reason for this addition to the original Ehrlich method, this application of an alkaline basic stain following the application of the regular Ehrlich mixture, is as follows: We wish by our stain to bring out a differential staining of the protoplasm of the leucocytes which shall allow of the classification of each leucocyte under one of three headings in accordance with which of the three staining reactions, acid, neutral or basic, it takes. A study of the staining affinities of the constituents of cell protoplasm shows that the acid elements stain more clearly in an acid solution, the basic stain more clearly in an alkaline (often not at all in an acid), the neutral best in a neutral or slightly acid solution. Clearly, all three reactions cannot be brought out to the best advantage by the use of a single staining mixture, since this cannot be both acid and alkaline. At best a single mixture can be neutral, and in a neutral mixture the basic elements of the protoplasm do not stain strongly enough. The original Ehrlich mixture has a neutral or slightly acid reaction. It can be used, therefore, for obtaining the neutral and acid reactions in the leucocytes, and is in fact the best neutral staining mixture that we possess. It is not so useful, however, for the obtaining of the basic protoplasm reactions, but frequently fails entirely to bring these out (H. F. Hewes: Classification of the Leucocytes, Journal of Boston Society for Medical Sciences, February, 1898). To bring out these basic reactions as strongly as the others in our blood, we, therefore, apply separately a basic stain in alkaline solution. See in this connection A. Matthews: Chemistry of Cytological Staining, American Journal of Physiology, vol. i, No. 4. This author shows that one of the chief constituents of cell protoplasm, albumin, stains with basic stains strongly in an alkaline solution, but faintly, or not at all, in neutral or acid solutions.

This is one of several illustrations of the principle upon which the modified Ehrlich method is based, the principle that the affinity of cell elements for a given stain is dependent upon the reaction of the staining solution.

In addition to thus aiding in the differentiation of the leucocytes this modified method has the further advantage over the old method that it makes the distinction between nucleated red corpuscles and basophilic leucocytes (lymphocytes) much more clear, also that it stains malaria organisms.

[5] For the microscopic examination a one-tenth or one-twelfth oil immersion lens should be used. With practice a seven Leitz, or any lens of corresponding power, can be substituted for the immersion, but observation with the higher power is much more satisfactory.

[6] A stain containing active basic, neutral and acid principles.

The next form in point of frequency is a cell varying in size from that of a red corpuscle to four times this size, containing a blue, usually round nucleus surrounded by a protoplasm studded with fine blue granules — the *basophile.* In this class are included the lymphocytes, large mononuclear transitional forms, and mast cells of Ehrlich.

The third form is a cell of the size of the neutrophile, with a blue polymorphous nucleus and a protoplasm studded with granules of large size, regular and a golden-red color — the *oxyphile,* the so-called eosinophile.[7]

If these white cells are counted differentially as neutrophiles, basophiles and oxyphiles, it will be found that the three varieties are present in certain definite proportions in normal blood. Thus if enough cells to make a fair average be counted, say 500 or 1000, 60 per cent. to 75 per cent. will be neutrophiles; 20 per cent. to 35 per cent. basophiles; ½ per cent. to 5 per cent oxyphiles.

These limits in the differential proportion of the leucocytes hold for adults only. In children under ten years of age the basophiles are more and the neutrophiles less numerous.

These characteristics of normal blood which we have described are constant. Any general variation from them in a blood specimen is a sign of abnormality. When, therefore, the picture of the normal specimen and its limit of variation are once fixed in the mind, the determination of whether the blood in a given case is normal or abnormal is, as far as the appearance of its corpuscular elements goes, a simple matter.

Thus if the red corpuscles of our specimen are pale and their centres larger than our normal type, or if the characteristic uniformity in size or shape be lacking, we are at once aware that the blood in hand is not normal; or if the leucocytes are more numerous upon our slide than the rule, or the differential proportion not regular, we come to the same conclusion.

Having determined this fact, that some abnormality is present, the next point is to determine the particular significance of the special blood picture in hand. To establish this point, some experience in the study of the appearances of blood in pathological conditions is necessary. As a result of this study we find that the changes which occur in corpuscular elements of blood in disease may be divided into two classes:

(1) Changes in the characteristics of the red corpuscles, their number, or structure, or color richness, staining reaction, etc.

(2) Changes in the characteristics of the white corpuscles, their number, differential proportion or type.

The changes of the first class are expressions of a general condition known as anemia.

The changes of the second class are, as far as their value in diagnosis goes, expressions of a general condition known as leucocytosis.

Practically, therefore, the study of the pathology of the blood corpuscles means a study of the anemias and the leucocytoses.

Anemia, as the term is used from a clinical standpoint, means any loss of corpuscular substance in the red corpuscles. Such a loss of substance is of course associated with some changes in the structure or number of the corpuscles. Such a change involves as a direct result some alteration in the appearance of the corpuscles. The consequent loss of functional capacity of the blood or the disturbance of the blood-forming centres may result in the appearance of new and strange corpuscular forms in the blood.

For purposes of clinical work these changes which occur in the corpuscles in anemia and the abnormal forms which result from them may be to some extent classified.

(1) We have the diminution in the hemoglobin content of the corpuscles, as evidenced by the paleness of the corpuscles and the increased size of their white centres. This is called *achromia* and the changed corpuscles are achromic forms.

(2) We have the abnormal variation in the shape and the size of the corpuscles, evidenced by the appearance of pear-shaped, oval or triangular forms, of corpuscles smaller and larger than normal.

This condition is known as *poikilocytosis* and the irregularly shaped and sized forms are known as poikilocytes. Some observers divide the poikilocytes into three classes. All forms of a size under the normal limits are called macrocytes, all over these limits macrocytes, while the term poikilocytes is retained for the forms of abnormal shape alone. Such a division may be of use for purposes of instruction, but for practical work it is necessary to recognize simply the presence or absence of the condition of poikilocytosis, the degree of this condition, and whether an average increase or decrease in size of the corpuscles is a prominent feature of this poikilocytosis.

(3) There are forms in which the stroma of the corpuscles has in addition to its normal acid-staining elements, elements taking the blue basic or purple neutral stain. These are called polychromatophiles.

(4) There are forms not necessarily coming under any of the above headings, in which the stroma appears disintegrated and coloring matter irregularly distributed.

Many of these forms thus classified represent corpuscles which have undergone some process of necribiosis or degeneration. Such are the achromic forms in which the normal content of hemoglobin is lacking, or the misshapen poikilocytes and small microcyte fragments, or the polychromatophiles, and some of the large macrocyte forms.

Some of these forms of abnormally large size may, however, represent not degenerate forms but corpuscles produced as the result of an abnormal process of regeneration which occurs in the blood-forming centres as the result of pathological changes. Such are perhaps the large corpuscles which occur in so great numbers in pernicious anemia, associated with the megaloblast.

(5) In addition to these evidences of degenerative changes of red corpuscles, this poikilocytosis or achromia, which we find in anemia, there are certain other varieties of red cells abnormal to the circulating blood, which we find in certain pathological conditions, principally those associated with marked anemia. These are the nucleated red corpuscles or *blasts.* These blasts appear, as they are, as red corpuscles containing one or more nuclei. In stained specimens

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[7] The appearances of these leucocytes here described are those present when they are subjected to the special method of triple staining described in this paper, p. 39.

the stroma takes the golden acid stain peculiar to the red corpuscle, the nucleus, the blue basic nuclear stain peculiar to all nuclei.

The blasts which are found in pathological blood may be separated into three varieties:

(1) We have *normoblast.* This is a cell of the size of the normal red corpuscle, consisting of a stroma containing hemoglobin, staining golden color, containing one or more compact homogeneous deeply bluish-black staining nuclei. The nucleus is as a rule single, lies sometimes excentrically, sometimes concentrically, occupying from one-fourth to three-fourths the whole corpuscle. Its stain is much deeper and more homogeneous than that of the nuclei of white corpuscles.

(2) We have the *megaloblast.* This is a red cell of a size larger than normal, containing one or several nuclei.

The color of the stroma is as a rule less intense than that of the normoblasts. The nucleus stains blue; as a rule it stains less deeply than that of the normoblast and less homogeneously, showing a chromatin network in its substance. It may occupy from one-eighth to three-fourths of the cell. Its compact form and clear demarcation from the surrounding stroma serve to distinguish it from the nuclei of white corpuscles.

(3) *Microblasts* are nucleated red cells of a size smaller than the normal. The nucleus takes the deep color of that of the normoblast and has but little stroma about it.

The normoblast is the parent cell of the red corpuscle. It is found in great numbers in the red marrow of the bones, but never in health after the first year of life in the circulating blood. In the marrow it gets rid of its nucleus by absorption (Papenheim) or extrusion (Ehrlich) and appears in the blood as the normal corpuscle.

The megaloblast is not found in the red marrow of the normal individual. It is found in the marrow and blood-forming centres of the embryo and represents a stage in the formation of the red corpuscle here, as does the normoblast in extra-uterine life.

Blasts are found in the blood principally in conditions of anemia. They may, however, occur in the blood of conditions in which there is some lesion of the blood-forming centres, as the leukemias, even where no evidences of anemia, that is, of degenerative corpuscular changes, are apparent. The presence of blasts in an anemia suggests a severe or an advanced condition or type, an anemia in which the loss of corpuscular substance is so great as to call for very active regeneration processes in the blood-forming centres. When the blasts are exclusively normoblasts we have an evidence that regeneration is proceeding in an excessive but normal manner. When megaloblasts are present, however, we have evidence that the blood centres have reverted to some extent at any rate to the embryonal method of blood formation.

This evidence of reversion is always a sign of serious significance. The chances of recovery of an anemia in which this change has occurred are, independently of the cause of the anemia, less than those of an anemia in which regeneration is still taking place according to the normal type. Owing to this difference in the significance of the normoblast and megaloblast their differentiation in the blood becomes a matter of great importance. As a rule it is simple, if the characteristics of the two cells, the size, the homogeneous deep-colored nuclei of the normoblasts, or the rich in chromatin structure, lighter-colored nuclei of the megaloblasts, be held in mind. Where the size or the structure leaves one in doubt, the associated conditions of the blood may be of aid. The megaloblasts are commonly associated with an average increase in the size of the red corpuscles of the blood, with the presence of numerous macrocytes. So true is this association that the fact of finding a general increase in the size of the red corpuscles always leads one to suspect and look for a megaloblast anemia.

Any or all of these pathological varieties of red corpuscle, these blasts and degenerative forms may be present in an anemic blood. By studying the general picture in a given case and sorting out the varieties of changes present, we can establish not only the existence of an anemia but also the severity and type of anemia present. This differential study we shall take up later.

(To be continued.)

X-RAY EXAMINATIONS IN CHILDREN.

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

IN one of my early articles,[1] "The Adaptation of the X-Rays to Medical Practice," I pointed out the value of x-ray examinations in young patients, and further experience with them urges me to emphasize the usefulness of this method still further. Children and infants are more easily penetrated by the x-rays than adults, and like older persons may be readily examined without removing the clothing, as they lie on the stretcher in front of the apparatus. Infants often go to sleep while on the stretcher and may be then examined with the fluorescent screen or an x-ray photograph may be taken without disturbing them. Not only is the thorax of children more accessible to this method of examination than that of adults, but so also are the abdomen and head. In examining the thorax indeed care must be taken to avoid too much light, for the organs in the chest of a young child are so easily traversed by the rays that otherwise the border of the heart, for instance, might not be well defined because the edges are penetrated by the rays and if so the shadow of the heart cast on the screen would be smaller than the heart itself.

In some cases of pneumonia, especially in the early stages, we cannot detect the presence of pneumonic areas in infants and children, nor in adults, and in these cases a doubtful diagnosis may be made more certain by an x-ray examination. For example, I recall a child, six years old, in one of the wards of my service at the Boston City Hospital, with a high temperature, a leucocytosis (25,000), pain and stiffness in the back of the head and neck, the neck so rigid it could not be flexed. There was no history, and no physical signs were found in the chest after a careful examination by two admitting physicians. My house physician also found nothing in the lung, and I was inclined to accept the diagnosis of cerebro-spinal meningitis which had been made by the three physicians who had seen the patient. I made an x-ray examination, however, in order to obtain further information.

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[1] Medical and Surgical Reports of the Boston City Hospital, January, 1897.

and found a dark area over one lobe and a shortened excursion of the diaphragm on that side, and the diagnosis of pneumonia was made without hesitation. This diagnosis was confirmed by a marked crisis, and rapid clearing of the lung, as determined by x-ray examinations. At no time during the course of the disease did I obtain signs of consolidation by auscultation and percussion.

Again, in young patients with symptoms which suggest tubercular meningitis it may be desirable to have a careful x-ray examination of the lungs, with a view to determining whether or not tuberculous foci exist there.

In pleurisy, with effusion or empyema, the x-rays assist very much in the diagnosis; any condition of the lung which would make this organ less penetrable by the rays than normal, or where the excursion of the diaphragm might be changed, would be easily observed. Changes in the size, position or shape of the heart — and some of these conditions are not readily detected by the usual physical examination — are very definite and patent to the x-rays.

The size and position of the liver and spleen are more readily determined in children than in adults; likewise the size and position of the kidneys, especially the left one.

The size of the stomach, by giving subnitrate of bismuth with bread and milk, may be determined, and the changes in size and shape after a meal may be followed. The changes in the size and shape of the stomach of a child have thus been watched during the process of digestion by Mr. W. B. Cannon and myself. These observations are still unpublished.

In a word, I wish to direct attention to the advantages which young patients offer to this method of examination, in the hope that it may assist in arousing more appreciation of its usefulness, not only in examinations of the thorax but also in ascertaining more exactly the conditions present in other parts of the body.

There need be no fear of untoward effects from x-ray examinations if simple precautions are taken. I have never had any in the about three thousand examinations that I have made.

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Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

MEETING OF THE SECTION ON SURGERY AND ANATOMY, COLUMBUS, O., JUNE 6, 7 AND 8, 1899.

The first session of the Section in Surgery of the American Medical Association was "appendicitis day," there being eight papers read upon that subject.

In the address of the Chairman, Dr. W. J. Mayo, of Rochester, Minn., upon

CICATRICIAL STRICTURE OF THE ESOPHAGUS AND ITS SURGICAL TREATMENT,

the author said that esophageal obstruction was a subject that must command the attention of every thoughtful surgeon; that the inaccessible situation of the gullet, its relation to important structures and the difficulty attending manipulations within its narrow lumen, all tend to place it among the surgical problems difficult of solution.

CONSIDERATIONS ON THE DIAGNOSIS AND TREATMENT OF GALL-STONES.

Dr. Joseph Ransohoff, of Cincinnati, read a paper on this subject. He said that cholecystotomy was first done by Boggs in 1868, and that it was not made a formal operation until ten years later by Marion Sims. Concerning the etiology of gall-stones comparatively little is known, and experiments made to produce them around foreign bodies introduced into a normal gall-bladder had almost always failed. Gall-stones present but few varieties, the vast majority being formed either by pure cholesterin or of bile pigments. Cholecystenterostomy had a limited field of application, that is, obstructive jaundice from malignant disease or impermeable cicatricial stenosis of the common duct.

Dr. A. J. McCosh, of New York City, read a paper entitled

OBSERVATIONS ON THE TREATMENT OF GALL-STONES.

He said that it was believed by many that so-called biliary colic was not produced so much by the passage through or impaction of a calculus in the bile passages as by inflammation of the gall-bladder and ducts, and that as long as the bile and the biliary passages remain normal a gall-stone would, as a rule, produce but few symptoms. He thought that one stumbling-block which was often found in the path towards a correct diagnosis was the idea that if a stone was impacted in the common duct the result would be a distended gall-bladder. His paper was a very exhaustive one and dealt at length with the citation of individual cases.

In discussion, Dr. Walker, of Detroit, spoke of drainage, and said that in his operations of late he had been in the habit of closing the gall-bladder and letting it fall back into the abdomen. He had no trouble in utilizing the purse-string suture.

Dr. Bevan, of Chicago, thought that a great deal was known of the etiology of gall-stones; that he always looks for a history of typhoid or intestinal infection, and that in a number of cases he had found typhoid bacilli in the gall-bladder of patients. He advised the S-shaped incision, which he had previously reported.

Dr. Morris, of New York, illustrated a method of closing the gall-bladder.

Dr. Murphy, of Chicago, Ill.; Dr. Ferguson, of Troy, N. Y.; Dr. Thomas, of Pittsburg, Pa.; Dr. Porter, of Fort Wayne, Ind.; Dr. Warren, of Columbus, O.; Dr. Rodman, of Philadelphia; Dr. Moore, of Minnesota; and Dr. Marcy, of Boston, followed in discussion.

Dr. W. E. B. Davis, of Birmingham, Ala., reported a case of obstruction of the gall-bladder and common duct, in which a stone was not found, occurring in a pure negro, age seventy.

Dr. A. J. Ochsner, of Chicago, read a paper on

APPENDICITIS AS A CAUSE OF INFLAMMATION OF THE RIGHT OVARY AND TUBE.

He said that during the past five years surgeons had frequently observed the fact that appendicitis might occur in patients suffering from an inflammatory condition of the ovaries and tubes; that most of these observers had found difficulty in making a differential diagnosis. He was of the opinion that appendicitis was frequently the cause of inflammatory disease of the right ovary and tube, and occasionally the left, and that such a condition was likely to give rise to a chronic invalidism, owing to the periodic exacerbation resulting from congestion due to menstruation; that in operating for chronic or recurrent appendicitis in patients suffering also from dysmenorrhea the right ovary and tube should be examined.

COMPLICATIONS AND SEQUELÆ OF APPENDICEAL ABSCESS.

Dr. John B. Deaver, of Philadelphia, read this paper. He said, in part: Of all the complications of appendicitis, peritonitis, that dreadful disease which has and is to-day carrying many a human soul into eternity, stands foremost in frequency and mortality. One, if not the most, distressing sequel of appendiceal abscess is a fecal fistula. The surgeon is too frequently held accountable for this terrible condition. I style it terrible, for I know no word that can better express it. Gentlemen, I repeat to you, appendicitis with pus-formation produces ravages of the worst description, the effects are often permanent and irremediable, and in my experience unequalled by any other affection occurring within the abdominal cavity. For me the lesson taught by the widespread disastrous lesions of appendiceal pus was long ago learned. In fact, these very complications but accentuate the necessity for early operation to usher in that prevention which is indeed cure. Would that my voice were strong enough to sound the note of warning against delay in the presence of appendiceal pus, its ravages, etc., from the Atlantic to the Pacific and far beyond, and from the Everglades of Florida to the glaciers of Alaska.

Dr. Robert Morris, of New York, read a paper on

BAD METHODS IN APPENDICITIS.

He said: I say, shame upon any member of the profession to-day, no matter who he is or where he lives, who allows an appendicitis patient to become a chronic invalid and unfit to follow any occupation, provided he is in reach of intelligent resources.

ANATOMY AND BIOLOGY OF THE PROCESSUS VERMIFORMIS.

Dr. G. G. Eitel, of Minneapolis, read this paper by title.

DIAGNOSIS AND TREATMENT OF APPENDICITIS, WITH REPORT OF 102 CASES.

Dr. Means, of Columbus, read this paper. He said that of the 102 cases reported 45 were in females and 57 in males. In 9 cases operation was made within twenty-four hours after the attack. It had been his observation rather than his experience that when there was profound septicemia, complete paresis of the bowel, with a pulse-rate entirely out of proportion to the temperature, an operation was useless. He believed that few diseases had a more uniform set of symptoms than appendicitis. He further stated that the controversy that has been waged during the last decade as to whether appendicitis should be classed as a medical disease, a mixed disease, or a surgical disease, has been decided largely in favor of the surgeons. He maintains that it is the consensus of opinion of the profession to-day that appendicitis is essentially a surgical disease, and should be treated from that standpoint. He did not believe that the time for operation depended altogether upon pathologic conditions as found in the patient at the time of the first visit. Early operations gave the best results.

Dr. William H. Harsha, of Chicago, considered

INQUIRIES IN THE ETIOLOGY AND TREATMENT OF APPENDICITIS.

He thought that among the etiologic factors was age, appendicitis being essentially a disease of the young. A study of 157 cases occurring in some of the Chicago hospitals during the past year shows an average of twenty-six years, the oldest patient having been sixty-two and the youngest one and one-half years old. Continuing, he said: The greater frequency in males is no doubt due to their greater exposure to injury, fatigue, colds and over-indulgence in eating and drinking. The seasons affect materially the frequency of attacks, the greater number occurring during the summer months.

In discussion, Dr. Keen, of Philadelphia, said, in part: Dr. Deaver, if I understand him rightly, considered a general suppurative peritonitis is a contra-indication to operation. The very fact that a patient has a general purulent peritonitis as a result of appendicitis means to me instant operation and thorough operation, for this very reason, that if you let such a patient alone he is just as absolutely sure to die as he is sick; that the majority of those who are taken with a suppurative peritonitis will die, operation or no operation, is certainly true, a majority of them, but every one rescued is rescued from the grave, and that those cases are not without hope I am absolutely certain, both from reading and from experience, for I could recount at least four or five cases in my own practice, in which life has certainly been saved simply by the ordinary operation for appendicitis and by an operation on both sides, which would allow thorough flushing out, complete cleansing of the abdomen as far as can be done.

Dr. Murphy, of Chicago, then took the floor, and in a queston-and-answer form discussed with Dr. Keen the time for operating in all appendicitis cases.

Eventually many interested members joined in a lively discussion. They were: Dr. Lewis, of Kansas City; Dr. Grant, of Denver; Dr. Johnson, of Hartford; Dr. Wagner, of Chicago; Dr. LaPlace, of Philadelphia; Dr. Porter, of Fort Wayne.

Dr. Emil Ries, of Chicago, Ill., read a paper entitled

SOME RADICAL CHANGES IN THE POST–OPERATIVE TREATMENT OF CELIOTOMY.

In the animated discussion which followed, interesting points were adduced by Dr. Manley, of New York, and Dr. Bonnafield, of Cincinnati.

SECOND DAY.

Dr. A. I. Bouffleur, of Chicago, Ill., read a paper on

DERMOID FIBROMA OF THE ABDOMINAL WALL AND PLASTIC OPERATION FOR SUCCESSFUL REPAIR OF DEFECT CAUSED BY ITS REMOVAL.

OBSERVATIONS ON PREVENTION OF SURGICAL SHOCK AND COLLAPSE, BASED ON CLINICAL AND EXPERIMENTAL EVIDENCE.

Dr. George W. Crile, of Cleveland, O., read this paper. He said: Experimentally, as well as clinically, the brain cannot withstand long pressure; it produces shock by interference with the vasomotor system. Collapse may be produced on the brain by direct pressure, and interference with respiratory centres, which it has been shown are located on the base. In operations on the brain, in the presence of abscess or hemorrage, or in the presence of intracranial pressure, it is necessary to give the patient a hypodermic injection of atropia. It guards the heart against the inhibitory action of the vagi. In operations on the neck he stated that experimentally he had been able to show that when the laryngeal mucosa had been subjected to treatment of cocaine, this drug had an absolutely inhibitory effect on reflex action; that in any given case of operation on the neck, if the patient is given physiologic doses of atropia before the operation is begun, and if at the same time the laryngeal mucosa is properly treated with cocaine, it is impossible, as long as these drugs have their effect, to produce collapse in any such operation. In reference to opening joints, Dr. Crile said that, as a matter of fact, there is no nerve supply in a joint that is capable of producing collapse or shock to a great degree, but that the shock produced in operations on the extremities was caused by cutting of nerve tissue, a large nerve trunk — a great bungling; sawing through the anatomic bone with the periosteum intact produces but a small amount of shock.

In discussion, Dr. Leaving, of Milwaukee, said that in the matter of prevention of shock the physical and mental condition of the patient preceding the operation and at the time of operation was of importance; patients should be in the best possible condition. He was in the habit of putting his patients for two or three days before an operation under the influence of strychnine, because of its support to the heart during the time of operation and to the nervous system and heart subsequently. He thought also that the rapidity of the operation was a large factor.

Dr. Allen, of Cleveland, thought that as little time as possible should be lost in the operation and that as little blood as possible should be lost. He believed that temperature was an important element. He recited some interesting experiments performed on dogs in a very warm room.

Dr. O. Ochsner, of Chicago, mentioned, as other factors in shock, traumatized tissues, superfluous number of stitches, the unnecessary manipulation of the tissues.

Dr. Bullett, of Louisville, presented a differentiation between traumatic shock or shock arising from railroad injuries and that caused by hemorrhage or loss of blood incident to accident.

Dr. Murphy, of Chicago, said that the operator who makes a clean, rapid operation, without injury done, without traumatism, is the operator who takes his patient off the table in a good condition.

Dr. Dan Milliken, of Dallas, Tex., referred to a brother practitioner in Sherman, who found that thoroughly washing out the stomach, or performing lavage, thus removing all mucus or foreign material, lessened to a great extent the amount of shock.

Dr. Arthur D. Bevan, of Chicago, read a paper on

OPERATION FOR UNDESCENDED TESTICLE AND CONGENITAL HERNIA.

He said that the malposition of the testicle is often complicated with hernia, and hernia of a very dangerous and distressing type. When the testicle is retained high up in the abdomen and does not reach the internal abdominal ring, a hernia is not very apt to coexist, but in one-half of the cases when the testicle is in or about the inguinal canal a hernia is present. It is difficult to retain such a hernia with a truss, because the pressure upon the testicle is unnatural, and such pressure is apt to produce traumatic inflammation of the organ. A retained testicle in or about the inguinal canal is peculiarly liable to injury, both external injury from its exposed position, and also injury from bodily movements, exercise of any kind in which the abdominal muscles are strongly contracted, sneezing and coughing. He had had one case in which the patient was compelled to remain in bed whenever he had a slight cold because the pain of coughing and sneezing was excruciating.

Why should we refuse the cryptorchid the benefits of a surgical procedure which, if properly done, is as safe and sure as a Bassini hernia operation, and which is of much more value to the individual, both from a physical aud mental standpoint? He desired to refer to the best method of handling the vaginal process of peritoneum in operations for congenital inguinal hernia. He had until recently been in the habit of obliterating the vaginal process in these cases by a purse-string suture at the internal ring, and by whipping up the peritoneum around the cord with a continuous catgut suture, leaving enough to form a tunica vaginalis. In a careful dissection of a case of inguinal hernia he found that when, as it was very difficult to separate the vaginal process from the cord proper, he opened widely the inguinal canal, so as to expose freely the internal ring, he could very easily separate the peritoneum from the cord, just where the cord separates into its constituent elements, where the vas turns inward and downward and the spermatic vessels pass upward. Here he could readily separate and cut off the vaginal process and close the abdominal cavity, as in treating the sac of an acquired hernia. Further, he found that by following the vas and spermatic vessels inside of the abdominal cavity with his finger, and freeing them from the peritoneum covering them, he could pull them a surprisingly long distance out of the abdominal cavity. Since that time he had had an opportunity of operating on four cases of congenital inguinal hernia, which he had handled in this way: An incision three inches in length was made over the inguinal canal. He then proceeds by splitting up the entire length of the canal, exposing freely the internal ring, opening the vaginal process, freeing the vaginal process high up, where the vas and spermatic vessels separate, ligating the vaginal process with catgut at the internal ring and dividing a half-inch below the ligature. Then, without stripping the vaginal process from the entire length of the cord and without removing any of it, he continued by throwing a catgut ligature around it and ligating so as to close it, forming a large tunica vaginalis.

In discussion, Dr. Milliken, of Dallas, Tex., thought the operation for castration should be performed from eight to ten years of age; that fifteen was a little too late.

Dr. Lord, of Omaha, reported a case of metastatic inflammation of the testicle.

Dr. Harris, of Chicago, thought the two factors involved were (1) the necessity of an operation; and (2) the functional capacity of the organ. He did not think it was advisable to operate these cases previous to the age of puberty. He had removed a number of testicles, and in cases over twenty-five no living spermatozoa could be found.

Dr. McArthur thought that no testicle should be extirpated until extraperitoneal reposition of that testicle had been tried.

Dr. Shaffer, of Chicago, was of the opinion that the operation for castration should not be performed until the age of puberty.

Others who took part in the discussion were Dr. Boufflеur, of Chicago; Dr. Manley, of New York; Dr. Reed, of Rock Springs, Wyo.

The morning session closed with the reading of a paper by Dr. Elliott, of New York, entitled

CONTRIBUTION TO THE TREATMENT OF SPINAL CARIES.

The afternoon session opened with two papers on

EXSTROPHY OF THE BLADDER.

Dr. Dudley A. Allen, of Cleveland, in his paper, said: All methods which have been introduced for the formation of a covering for the exposed mucous membrane of the bladder have two objections. The first is, that although by covering the exposed mucous membrane they preserve it from external circulation, they do not prevent the escape of urine. This escapes and soils the patient exactly as it did before the operation. The method which Maydl proposed, and the one which I have adopted in the present case, is to remove all of the exposed mucous membrane of the bladder except that which is immediately around the openings of the two ureters. After this has been done the abdomen is opened, the ureters are mobilized and the sigmoid flexure is drawn from the abdominal opening. A longitudinal incision is made into the intestine and the extremity of the ureters with their mucous covering is inserted into the sigmoid and made fast by a series of sutures. When this has been done the intestine is dropped backward into the abdominal cavity, and the abdominal cavity is closed. Up to the present time it seems to me that no method proposed gives as much relief as that used upon the patient whom I present to you to-day.

Dr. C. A. Wheaton, of St. Paul, read a paper by the same title. The doctor recited a case of hypospadias with rudimentary penis, a case of epispadias without exstrophy of the bladder, and a case of aggravated epispadias with exstrophy of the bladder, upon whom he had operated, Two patients were exhibited, showing satisfactory results.

The discussion on the two papers was opened by Dr. Rudolph Matas, of New Orleans. He thought that the surgical history of exstrophy of the bladder was a fair reflex or mirror of the progress accomplished in surgery, that the cure of ectopic vesicæ was a problem that had confronted and vexed the surgeon for nearly a century; the ancients simply referred to this condition and described it; to them it was a hopeless state. He pointed out that all the autoplastic methods proposed for the cure of exstrophy of the bladder are unsatisfactory and at best simply palliative; that of all the radical methods which involve an incision of the bladder and a transplantation of the ureters to the rectum, Maydl's operation is by far the most complete, rational and satisfactory from the technical point of view; that Maydl's operation offers the best conditions for the complete correction of the associate epispadias; that it should not be applied indiscriminately to all cases, but only to those patients whose general condition is such as to warrant a long, tedious operation likely to be attended by serious shock, and whose eliminating organs, especially the kidneys, are normal and capable of effective elimination.

Dr. DeForest Willard, of Philadelphia, Dr. J. Rilus Eastman, of Indianapolis, Dr. W. J. Means, of Columbus, O., and Dr. D. P. Allen, of Cleveland, joined in the discussion.

Dr. J. E. Moore, of Minneapolis, read a paper entitled

TUBERCULOSIS OF FASCIA.

He said that every surgeon was familiar with tuberculous fascia, secondary to disease of the glands, bones and joints, but in these cases the communicating sinuses are found, and the relation between the disease of the fascia and the gland, bone or joint is easily established. He said he had a history of a number of cases in which there was no disease of the gland, bone or joint, and in which there was extensive disease of the fascia. The symptoms of fascial tuberculosis are a slowly developing swelling, accompanied by little or no pus, and a local rise of temperature which can be detected by a sensitive hand. The diagnosis is to be made largely by exclusion. In the majority of cases the disease is secondary as well as primary. The prognosis varies with the variety, the location and extent of the disease. Treatment consists in thoroughly removing every trace of the disease with knife, curette and scissors. He gave the history of six cases.

In discussion, Dr. Willard, of Philadelphia, thought that Dr. Moore had struck the proper method of procedure in tuberculosis of the fascia, when there is no implication of the bone, by laying open the sinus.

Dr. Sherman, of San Francisco, spoke of the x-ray in connection with diagnosing conditions.

Drs. W. W. Keen and W. S. Jones contributed the next paper, which was entitled

TWO NOVEL CASES OF SURGERY OF THE TRACHEA: (1) STRICTURE OF THE TRACHEA SUCCESSFULLY REMOVED BY OPERATION; (2) SUCCESSFUL REMOVAL OF A DIAPHRAGM IN THE TRACHEA FOLLOWING CUT-THROAT AND PRODUCING APHONIA.[1]

In discussion, Dr. Crile, of Cleveland, thought Dr. Keen's case highly interesting, and reported a case of stenosis of the larynx under his observation.

Dr. Wyman, of Cleveland, said: I would like to know whether a more careful and painstaking suturing primarily of the case might not have averted the conditions that culminated in the operation by Dr. Keen?

Dr. Keen said: In reply to Dr. Wyman, I beg to say that I did not refer to the early treatment of this case simply because it was under the care of other surgeons. Dr. Jones and I never saw the case until more than a year after the cut-throat. I presume this little accident is quite as frequent in Philadelphia as in Michigan, and we try, in these cases, when we meet with them early, to repair the damage with immediate suture, as has been properly indicated by Dr. Wyman. In answer to Dr. Crile's question as to cicatricial stenosis, I should think that if the opening between the vocal chords is completely cicatrized there would be no great probability of any progressive stenosis. If there were, it could be readily met by reintroduction of the tube.

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[1] Phildelphia Medical Journal, p. 1,295.

Dr. M. L. Harris, of Chicago, Ill., read a paper on

LONGITUDINAL SILVER-WIRE SUTURE IN THE CLOSURE OF WOUNDS.

I cannot speak too highly of the longitudinal silver-wire suture in the radical operation for hernia, as the results have been so gratifying. There are no absorbable sutures to soften nor no absorbable sutures to come out at some future time. Another advantage is its rigidity; it can always be sterilized; does not convey infection to the deeper tissues; edges of wounds are more coapted than by any other method; the narrow linear cicatrix is a great improvement in a cosmetic sense; the suture will withstand any desirable amount of traction without yielding; it is easily applied.

In discussion, Dr. Lord said that he had discarded the deep silver-wire sutures, and that he was using silkworm-gut and catgut for superficial skin-wound closures.

Dr. Means, of Columbus, mentioned a new material for suturing wounds — annealed steel wire, galvanized, and said it was very economical.

In answer to a question by Dr. Eggleston, of Seattle, as to whether the silver wire was as easily removed as silkworm gut, Dr. Harris replied that it was.

Dr. J. C. Munro, of Boston, read a paper on

LAMINECTOMY, WITH REPORT OF CASES.

In discussion, Dr. Ferguson, of Chicago, said he thought that laminectomy was a very major procedure for the amount of good obtained.

Dr. Bouffleur, of Chicago, believed that shock was no contraindication to laminectomy; on the contrary it was a positive indication. He did not believe that presence of sensation accompanied by paralysis is a contraindication to operation. He said: The last case I had to recover, which was a year ago last September, was one in which sensation was present, but upon exposure of the cord we found a spicula of bone penetrating the cord and passing completely through it from behind, and doing a great deal of damage to the motor areas.

Dr. Francis D. Patterson cited a case of spinal meningitis, ameliorated by lumbar puncture.

Dr. Baily, of Chicago, said he had operated on two cases. One was an injury to the lumbar vertebra from a serious traumatism; the other was a gunshot wound; both were doomed.

Dr. L. L. McArthur, of Chicago, Ill., read a paper on

PANCREATIC CYSTS.

In discussion, Dr. Turck, of Chicago, reported a case of pancreatitis hemorrhagica associated with peripancreatitis in the clinic of the Post-graduate Medical School.

Dr. French, of St. Louis, also reported a case.

Dr. A. F. Jonas, of Omaha, Neb., read a paper on

RESECTION FOR THE CURE OF KNEE-JOINT TUBERCULOSIS, WITH A PLEA FOR EARLIER OPERATION.

He said that in the past ten years he had had 55 cases under his care, and that the methods of treatment employed came under these different heads: Mechanical immobilization, with plaster-of-Paris or starch bandage and braces; intra-articular injections of iodoform emulsion, followed by compression; puncture with canula and copious irrigation with sublimate solution; free incision and irrigation, with closure by suture without drainage and immobilization; para-articular operations, opening of abscesses, excavation of bone centres; arthrectomy; resection; amputation.

In discussion, Dr. Moore wanted to go on record as to the uselessness of iodoform in the local treatment of joint tuberculosis.

TREATMENT OF POPLITEAL ANEURISM BY EXCISION.

Dr. J. C. Oliver, of Cincinnati, O., read a paper under this title, reporting a case of traumatic aneurism of the popliteal artery in a syphilitic. He believes that the operation by extirpation is the most scientific of all methods thus far proposed for the treatment of aneurisms of the extremities; that it is by far the safest method; that it gives a greater percentage of cures and a less percentage of deaths than any other method; that the operation by extirpation should be resorted to without previous attempts to cure by any other method.

In the absence of Dr. Souchon, Dr. Manly opened the discussion on the papers.

He was followed by Dr. L. Freeman, of Denver, and Dr. Lord, of Omaha.

THIRD DAY.

Dr. A. F. House, of Cleveland, O., read a paper on

SURGICAL TREATMENT OF ACUTE PERITONITIS.

He believed that death from peritonitis was due rather to rapid intoxication than to inflammation. He recommended making exploratory incision in peritonitis. Early diagnosis is most important and operation should be performed just as soon as the diagnosis is made. The bacillus coli communis, derived from the intestinal tract, is the usual infection. Symptoms demanding immediate operation are general abdominal pain referred to the umbilicus, tenderness on pressure, early rigidity of the abdominal muscles, vomiting of a green substance, distention of the abdomen, pulse thready, weak and rapid, and diminished peristalsis. The operation should consist of three incisions, thorough irrigation of the peritoneum with normal salt solution and drainage by strips of gauze. If the intestines are greatly distended, they should be punctured or incised and their contents evacuated.

Dr. A. J. Ochsner, of Chicago, opened the discussion. He said: This paper of Dr. House's is certainly one of the most important subjects we have discussed during this meeting, and it should be discussed thoroughly. The danger from general septic peritonitis, from which patients die, I think is very analogous to the condition from which patients used to die when surgeons were in the habit of emptying a greatly distended septic bladder; the patient would die within forty-eight hours from what was supposed to be acute nephritis, but what in fact was a very acute sepsis. I am willing to say this — if the septic material in the intestine is stopped, if that patient is not treated medically, if he receives absolutely no medicine, and absolutely nothing that will be found to make more microbes in the intestinal canal, that patient in almost every case will get well. I see dozens of these cases in this condition. I stop the feeding absolutely; I do not give them enough milk or gruel or broth to kill them, because that will increase the amount of septic material in the abdominal canal. If the patient has stercoraceous vomiting, I wash out the stomach. He receives rectal feeding.

Dr. J. B. Murphy, of Chicago, followed in discussion. He said, in part: The important factors I believe in peritonitis are, first, the diagnosis. When does a patient get a peritonitis? When does he get a general peritonitis? And can you recognize that he has a general peritonitis or a local peritonitis that is extending along and is going to become a general peritonitis? The important matter in connection with general peritonitis, as I look on it, is the type of infection. What is the character of the infection? What is the course of that type of infection after the peritoneal surface has been inoculated? We know from experience and opening the peritoneal cavity that contains a large quantity of pus that patients get well. We know from experience that cases with small quantity of pus opened and drained will be fatal; we know from experience that when we see a peritoneal cavity, when the peritoneum is not blistered, when the peritoneum retains its gloss, regardless of the quantity of pus, that the patient in a large majority of cases recovers; we know from experience when we open the peritoneal cavity, regardless of the quantity of pus, that patients with a blistered peritoneum — that is, where the intestine has lost its gloss — the cases will die. We must go back to the type of infection. I believe from cultures we have made from these cases that the blistered cases are of the streptococcus type; I believe again that a large quantity of pus cases are of some other kind — I speak of the pathologic condition when you open the peritoneal cavity. If the peritoneum is blistered, I do not recall a single case that has not been fatal. Where the peritoneum has not been blistered, many, many of them have recovered. I believe all cases of general peritonitis should be treated in the early stage. I believe the diagnosis should be made on pain, tenderness, nausea, vomiting, temperature, distention — and this is not an early symptom, it is the last of the symptoms; it may not be present; you should not wait for collapse or shock; collapse is practically a fatal condition.

Dr. Branham, of Baltimore, also joined in the discussion.

Dr. McRae, of Atlanta, Ga., stated that he had collected, recently, statistics of 601 cases of septic peritonitis subjected to surgical intervention, with a mortality of 79 + per cent. They were all treated surgically, and these results are better than can be obtained by other measures.

Dr. Porter, of Fort Wayne, then took part in the discussion.

(To be continued.)

An Example not to be Followed. — Dr. Klebs has opened in Chicago a private free dispensary for the poor, thereby introducing the German custom into this country. Certainly he deserves no thanks from the medical profession for this innovation, especially as we are just now seeking a remedy for the surplus of existing dispensaries in our cities. — *Cleveland Journal of Medicine*

THE BOSTON

Medical and Surgical Journal.

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ANNUAL DISCOURSES AND ADDRESSES: AN EXPLANATION.

It has been called to our attention that our editorial communication of June 22d on "The Shattuck Lecture and Annual Discourse at the Massachusetts Medical Society" might be construed as a reflection on certain other discourses which have gone before. Such an idea was furthest from our mind, as we think a careful perusal of the editorial in question would demonstrate. We must adhere still to our general proposition that the oration delivered at annual gatherings is apt to be merely retrospective and often complacent, and hence unstimulating. In making this statement we had no intention whatever of confining our generality to the Massachusetts Medical Society. Our experience has been that the shortcoming of which we speak extends much farther than the confines of Massachusetts or America. Nor, furthermore, did we intend to imply that there have not been notable exceptions to this general rule; it simply was not our intention to dwell upon other exceptions than those which this year's meeting of the State Society gave us, and which, being the last, are most prominently before our minds. We take it that both the Shattuck Lecturer and the author of the Annual Discourse would be the first to disclaim entire originality in the presentation of their themes, and we certainly had no intention of giving that impression in our remarks concerning them. A glance at the proceedings of our own Massachusetts Medical Society during the past few years would dispel such an idea at once.

These latest discourses had, however, in a pre-eminent degree what others, no doubt, have also frequently had, a spirit of dissatisfaction with the present and high hope for the future, which we maintain are the elements which constitute a stimulating oration.

We are doing no one injustice when we generalize in any matter whatever, and just as little do we do injustice when we particularize. In our editorial of June 22d we have generalized regarding the annual oration as it occurs the world over, and particularized regarding the two discourses which graced the meeting of 1899 of the Massachusetts Medical Society. We have, therefore, reflected on no one.

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THE FLOATING HOSPITAL.

The Boston Floating Hospital, which for several years has done an excellent work in caring for infants during the hot summer months, will this year fill a more important place than ever before, owing to the lack of accommodation for sick infants in other institutions. The West End Nursery and Infants' Hospital has closed its doors for the summer to house patients, and the hospital on Rainsford's Island, which for a number of years has been a refuge for many babies, will not be opened this year. It is a perfectly well-recognized fact that the mortality among infants during the summer in large cities is very great, even if they have the care which a hospital affords. It therefore becomes imperatively necessary that provision should be made for their treatment outside the confines of the crowded portions of the city.

It appears that the managers of the Floating Hospital are making this year a special effort to meet the added demands which will no doubt be thrown upon them. Last year a worse enemy than disease to contend against proved to be humidity and weather conditions generally. Death resulted in a number of cases, which might have been avoided could the atmosphere have been kept dry and cool. The physicians in charge have therefore thought that could a ventilating plant be introduced, through which the temperature could be kept at a constant point, not rising above 70°, the efficiency of the hospital might be greatly increased. To this end an appeal has been made for $3,000, which we hope may be forthcoming.

As the hospital has developed, the need of more accommodation for permanent patients has been felt and this year a third ward is to be established for that purpose, increasing the capacity of the hospital by forty patients.

The plan of caring for sick infants by means of floating hospitals has so often demonstrated its usefulness, and our own has already done so much toward the alleviation of conditions met with among infants in summer, that we look with confidence toward its still further development.

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SURGICAL INSTRUMENTS ADMITTED FREE OF DUTY.

A decision of great interest to the medical profession was made last week by Judge Colt, in the United States Circuit Court, in which he reversed the decision of the Board of General Appraisers, which assessed a duty of 35 per cent. *ad valorem* on an importation of surgical instruments made by the Massachusetts General Hospital.

A duty was assessed upon the instruments under paragraph 177 of the tariff act of August 27, 1894, which provides that "manufactured articles or wares, not specially provided for in this act, composed in whole or in part of any metal, and whether partly or wholly manufactured," should pay a duty of 35 per cent. *ad valorem.*

The hospital corporation contended, and the court held, that the surgical instruments which were imported for use in the hospital in its clinics and training school for nurses were entitled to entry duty free, under paragraph 585 of that act, as scientific instruments. The amount of the duty as assessed was $578.

The court said, "Looking at the whole of paragraph 585 and giving to it a construction in accordance with what seems to have been the intention of Congress, the term 'scientific instruments' means instruments specially designed for use in any particular science, and which are principally employed for such purpose; and, surgery being a science, it covers the surgical instruments in question in this case, which were imported for the use of the Massachusetts General Hospital in its clinics and training school. The fact that such instruments are employed by surgeons in the practice of their profession does not make them mechanical instruments.

"Instruments of this kind, in our opinion, are scientific instruments within the meaning of the statute until it is shown that their principal use is in the trades and arts. For example, an ordinary knife is a mechanical instrument, because its principal use is in the trades and arts, while a surgeon's knife, specially designed for use in surgery, and principally used for such purpose, is a scientific instrument."

The cost of carrying on the case was borne by a member of the medical profession, whose generosity in providing from his own resources for the costs of the case will result in no small benefit to hospitals and schools of medicine and surgery.

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MEDICAL NOTES.

Dr. Mazzoni the Pope's Surgeon. — Dr. Mazzoni, to whose intervention recently Pope Leo XIII owes his restoration to good health, has been appointed by the Pope to be his surgeon-in-chief.

University of Vienna. — Dr. Emil Zuckerkandl, professor of anatomy, has been elected Dean of the Medical Faculty, in succession to Dr. Theodor Puschmann, professor of medical history, who has resigned, because of failing health.

Yellow Fever at Santiago. — It is reported that Gen. Leonard Wood, on his arrival at Santiago from the United States, found the situation more serious than he had anticipated. The headquarters were moved to Songo, twenty miles north, which is about one thousand feet above sea level. All the administrative departments, except the sanitary and a few immune clerks in the quartermaster's and commissary staffs, were removed to that point. The paymaster has been ordered to suspend all payments to the Cuban troops until the fever has been stamped out, the special object of the order being to prevent the soldiers from drinking during the epidemic.

ANOTHER CASE OF TOTAL EXTIRPATION OF THE STOMACH. — Friday, June 9th, as we learn from the *Philadelphia Medical Journal*, Dr. Kocher, in his clinic at Berne, made a total extirpation of the stomach for carcinoma of the pylorus. The case was held to be favorable because of the absence of lymphatic involvement. The patient was a woman about forty years of age. The stomach was removed as a whole, including the cardia, and a direct anastomosis was made between esophagus and duodenum. The patient recovered from the operation, and apparently was doing well until June 13th, when, for some unaccountable reason, she died. At the post-mortem it was found that, in spite of the great care exercised not to interfere with the circulation of the intestines, the nutrition was sufficiently bad to cause a small area of necrosis in the wall of the transverse colon. As a result of this there was a mild peritonitis, which in the patient's poor condition was enough to cause death. The field of the operation itself was found in good order, the esophagoduodenal anastomosis having nearly healed.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 12, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 52, scarlet fever 25, measles 62, typhoid fever 16, small-pox 2.

FREE VACCINATION ENDED. — The free vaccination station in South Boston was stopped last week by the Board of Health, 1,256 persons having been vaccinated. This last free vaccination brought out the fact that many of the school children in the district had not been vaccinated, though this treatment is requisite for attendance at a public school.

NEW YORK.

THE STRAUSS MILK DEPOTS. — The Nathan Strauss milk depots have recently been opened for the season at various points in the down-town tenement districts, on the recreation piers, and in a number of the public parks. Pasteurized milk and raw milk freed from impurities by the centrifugal process, are sold by the glass (one-half pint for one cent), and pure and modified pasteurized milk furnished in bottles for infants at nominal rates, or free to mothers too poor to pay. There can be little doubt that the more or less general use of sterilized milk has been an important factor in the reduction of infant mortality in New York during the past few years, and it seems probable that the high death-rate among children under five years of age which has of late been noted in Brooklyn may be due, in part at least, to the fact of the less frequent employment of sterilized milk there than in the Boroughs of Manhattan and the Bronx.

THE FLOATING HOSPITAL. — On July 6th, the fifteenth anniversary of the first trip of its floating hospital, the St. John's Guild commenced its summer campaign of active work among the sick babies of the tenement districts. On that date the fine new hospital boat, the *Helen Juillard*, made its first regular trip down the bay, collecting its load of mothers and children from various landings on the east side of the city, while the old boat took its passengers from the west side. At the same time the enlarged seaside hospital of the Guild at New Dorp, Staten Island, was opened for the season. For the past six years there have been three floating hospital trips from both the east and west side every week, but during the present summer, with the increased facilities afforded by the new boat, there will be six weekly trips from each side.

PUBLIC MONEY FOR PRIVATE CHARITIES. — In response to a request from Controller Coler the Charity Organization Society, through a special committee, of which Robert W. De Forest is chairman, has given expression to its views regarding the appropriation of public funds for the support of private charities. The committee gave the matter a careful investigation, and its report is in part as follows: "The result has brought out the exceptional and unique position which New York occupies among all American cities in making large grants to private charities, and the equally striking unanimity of expert opinion against such grants. Of the twenty-nine large cities in the country other than New York included in our examination, twelve, or nearly half, make no grants whatsoever from public moneys to private institutions. Although there are exceptions, it may be said that the general principle governing the matter in the cities and towns of the United States is that public money is given only to public agencies." Having mentioned Washington, Baltimore and Richmond as among the exceptions, the report goes on to say: "In Chicago there are no appropriations corresponding to appropriations made to charitable institutions in New York City. In Boston there are no appropriations whatever to private charities. The same is true of Cincinnati, Cleveland and Pittsburgh, and many smaller cities. A large majority of the twenty or more persons with whom we have corresponded, and who may be regarded as authorities on the subject, emphatically oppose the policy of appropriating funds from the public treasury to private agencies."

MEASURES FOR LIMITING EXPENDITURE FOR CHARITIES. — The following are the recommendations made by the committee: Limiting present appropriations to such classes of agencies as children's institutions and hospitals; discontinuing appropriations to medical dispensaries, abolishing appropriations for fresh-air work carried on by private societies; continuing appropriations to industrial schools only until they are assimilated with the public-school system; that appropriations to foundling asylums and to children's institutions be upon a per-capita and per-diem basis, and that inmates be accepted by the Department of Charities in advance of payment by the city; that the aggregate amount contributed to hospitals be apportioned on a per-capita and per-diem basis for the patients, and to be divided proportionately to such service among all incorporated and well-managed institutions; no payment to be made for patients cared for in endowed beds. In conclusion, the report urges the necessity of regarding the present exorbitant amount appropriated to private charities as a maximum, and of effecting a very considerable decrease in the amount for each succeeding year.

A Gift to the German Hospital. — Mrs. C. Knaupp has contributed $10,000 towards the completion of the new German Hospital in Brooklyn, the gift being made on condition that should the donor ever meet with reverses and her condition necessitate her going to such an institution, she shall be received at the German Hospital and treated free of charge.

Yellow Fever at Quarantine — Trial of Dr. Doty's Serum. — Among the passengers who arrived on July 6th from Santiago on the United States transport *McClellan* were two yellow-fever patients, Oscar Lackey, of Philadelphia, and Miss Ellen Clendenin, a daughter of Dr. Paul Clendenin, the surgeon in charge of the Santiago hospital, who died of yellow fever after the *McClellan* had sailed. These, together with Miss Clendenin's sister and two fever suspects, were taken to the quarantine hospital on Swinburne Island, while the crew and other passengers were transferred to Hoffman Island for observation. In the case of Mr. Lackey, whose condition was serious, Dr. Doty decided, with the patient's consent, to make the first trial in the human subject of his new yellow-fever serum. At 11 P. M. an injection of 25 cubic centimetres was made, and three and eight hours afterwards a second and third injection, each larger than the preceding, were given, the total quantity of serum employed being 90 cubic centimetres. Apparently as the result of the remedy, there ensued a marked decline in temperature and relief of gastric irritation, while the general condition of the patient so far improved as to afford a hope of his making a good recovery.

Diphtheria at a Hospital for the Insane. — The Willard State Hospital for the Insane has been placed under quarantine on account of an outbreak of diphtheria. A considerable number of both inmates and employees have been attacked, but the disease is stated to have been of rather a mild type and antitoxin has been freely employed.

Suture of the Heart. — A case is reported from Binghamton, N. Y., of stab-wound of the heart penetrating nearly through the walls of the left ventricle, in which Dr. F. L. Forker, of that place, after administering a saline intravenous injection to offset the loss of blood that had occurred, sutured the injured organ. The patient survived for forty hours, when death resulted from septic pericarditis.

A Widow's Right to her Husband's Body. — On June 29th Justice Bischoff, in the Supreme Court, handed down a decision respecting a widow's right in the body of her husband. The case was that of Mrs. Mary Buchanan et al. *vs.* James D. Buchanan, an action for replevin and damages in the amount of $5,000. The plaintiff is the widow of Dr. Alexander Buchanan, who died September 2, 1896. The body was interred in Greenwood Cemetery by the brother of the deceased, James D. Buchanan. Mrs. Buchanan was not consulted as to the disposition of the remains, not having lived with her husband for nine years previous to his death, and having an action for divorce against him pending in the courts at the time of his death. A year after his death she brought the action for the possession of the body and damages for its unlawful detention. In the trial of the case, in which a jury was dispensed with by consent, the evidence introduced and uncontradicted was to the effect that just before his death Dr. Buchanan extracted a solemn promise from his brother, before a number of witnesses, that he would never allow his ashes to mingle with those of his wife. In his opinion the judge said that while it had been generally stated that there could be no right of property in a dead body, still it was recognized that there exists a personal right in husband, wife or next of kin to have the custody of the remains of the deceased relative for the purpose of burial. In this case, however, there was no question that husband and wife were divided in life, and it was the expressed wish of the deceased that they be as fully divided in death. Judgment was, therefore, ordered for the defendant on the pleadings.

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ARMY NOTES.

Appointments of Hospital Stewards in the New Volunteer Regiments. — General orders establishing the new regiments of volunteers provide that candidates for appointment as hospital steward, must produce certificates of proficiency from a reputable college of pharmacy, and after enlistment will be appointed as such by the colonel of the regiment upon the recommendation of the surgeon of the regiment, the warrant to be made, and the appointment to take effect, on the date of enlistment. Army regulations applying to hospital stewards in the regular army, except as herein otherwise provided, will apply to regimental hospital stewards who may be discharged from the service, for cause, by the Secretary of War, upon the recommendation of a board of three officers convened by the regimental commander to investigate and report upon the case.

General Wood's Jurisdiction Extended. — Gen. Leonard Wood, who recently sailed for Santiago, has been appointed military governor of the province of Porto Principe in addition to that of Santiago, thus being placed in control of about half the island of Cuba.

Death of Dr. Clendenin from Yellow Fever. — The second medical officer to succumb to yellow fever at Santiago was Capt. Paul Clendenin, assistant surgeon, U. S. Army, who was in command of the general hospital at that place. Dr. Clendenin was the son of Gen. David R. Clendenin, U. S. Army, and was thirty-seven years of age, having been in the military service for thirteen years. Immediately prior to the outbreak of the war with Spain he was on duty at Key West, and was sent from that point to Havana to attend the victims of the *Maine* at the first news of that disaster. Dr. Clendenin was twice married, and leaves several children; one daughter, who left Santiago several days previous to his death, experiencing an attack of yellow fever while on board the transport *en route* to New York.

Medical Appointments to the New Volunteer Regiments. — The President has appointed the following medical officers to serve with the eight regiments of volunteer infantry, recently created for service in the Philippines, a major, captain and lieutenant being assigned to each regiment. The appointments, together with the former service of the appointees, are as follow: Surgeons, with the rank of major, — Ogden Rafferty, captain and assistant surgeon, U. S. Army, late brigade surgeon, volunteers; Charles F. Watson, captain and assistant surgeon, U. S. Army, late brigade surgeon, volunteers; John R. McDill, late brigade surgeon, volunteers, now acting assistant surgeon U. S. Army; Frank C. Armstrong, late surgeon, 21st Kansas Volunteers; Thomas W. Chalmers, late surgeon, 12th New York Volunteers; Charles L. G. Anderson, late assistant surgeon, U. S. Army, now acting assistant surgeon, U. S. Army; B. Albert Lieberman, late surgeon, 6th Missouri Volunteers; Joseph N. Henry, late surgeon, 4th U. S. Volunteer Infantry. Assistant Surgeons, with the rank of captain, — John R. Hereford, late surgeon, 1st Missouri Volunteers; James C. Minor, late surgeon, 1st Arkansas Volunteers; Frank W. Foxworthy, late assistant surgeon, 160th Indiana Volunteers; Abram L. Haines, late surgeon, 203d New York Volunteers; James J. Erwin, late assistant surgeon, 10th Ohio Volunteers; W. E. Parker, late acting assistant surgeon, U. S. Army; James E. Shellenberger, late surgeon, 3d Ohio Volunteers. Assistant surgeons, with the rank of first lieutenant, — William H. Cook, acting assistant surgeon, U. S. Army; Lomax S. Anderson, late assistant surgeon, 5th U. S. Volunteer Infantry; Leonard K. Graves, late assistant surgeon, 201st New York Volunteers; Ralph S. Porter, late assistant surgeon, 2d Illinois Volunteers; John A. Metzger, acting assistant surgeon, U. S. Army; Patrick J. McKenna, late assistant surgeon, 2d U. S. Volunteer Engineers; Albert H. Eber, late assistant surgeon, 35th Michigan Volunteers; John E. Boyd, late captain, 2d South Carolina Volunteers.

Correspondence.

CALVIN ELLIS.

Mr. Editor: —

To one who recalls the character of our dead friend it seems like a derogation to feel so much of gratulation, and to speak so much of eulogy, because of his large bequest of *money* to the cause of medical education. Is it unknown, or is it quite ignored, that the legacy in which he felt the highest pride was that of the faithful record of his professional work bequeathed to those who may come after him? It may be dry and faded like the herbarium of a botanist, but it is a *thesaurus* of classical labors collected during many years of conscientious and thorough study. We know that in every page will be found careful observation and honest registration by a competent man, and that such work is at least as worthy of preservation, as valuable to posterity, as that which describes plants, their forms, growth, flowers, etc. Will any one say that these things have no practical or scientific value? In the letters of our greatest American botanist, Dr. Asa Gray, we see how great importance he attaches to the study of the older botanists and of their herbaria, however dry or incomplete.

Is it not quite proper, indeed usual, in the disposal of a legacy of money, to use it, or a portion of it, in accordance with the known wishes of the testator, even when the will itself fails to indicate any such specific intention on his part? Now, it is well known to many of his friends that Dr. Ellis during his last sickness often regretted that his notes had not been transcribed, so that they might be published.

Why should not this be done now, and by the aid of a part of the income of his legacy?

His manuscript is not likely to prove at all as difficult as that of the cipher of "Pepys' Diary," which after two hundred years has been written into perfect form by the Rev. Mynors Bright, A.M., and under no finer stimulus than: "you may as well decipher afresh 'Pepys' Diary.'"

A far higher motive exists for deciphering the records of the professional life of Calvin Ellis.

Z. B. Adams, M.D.

METEOROLOGICAL RECORD

For the week ending July 1st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...25	30.05	71	76	66	81	83	82	W.	S.W.	7	10	O.	O.	.08
M..26	30.06	70	80	60	69	41	55	W.	N.	7	7	C.	C.	
T...27	30.10	68	80	57	51	45	48	W.	W.	5	6	C.	C.	.01
W..28	29.96	70	82	59	55	94	74	S.W.	E.	9	4	O.	O.	.66
T...29	29.91	66	77	54	87	45	66	N.	W.	7	5	O.	C.	.46
F...30	30.10	65	75	55	30	43	36	N.W.	S.E.	27	5	C.	C.	
S....1	30.17	68	82	55	51	44	48	W.	S.W.	5	13	C.	C.	
☞														1.21

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 1, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup
New York . .	3,438,899	1369	664	33.25	16.59	25.69	1.12	3.71
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	193	60	4.68	15.08	.52	—	2.08
Baltimore . .	506,389	229	123	36.52	5.72	31.68	.44	2.64
Cincinnati . .	405,000	120	—	12.75	6.80	7.65	2.55	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	—	—	—	—	—	—	—
Washington .	277,000	103	44	3.92	7.84	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	46	14	17.36	4.34	—	2.17	2.17
Nashville . .	87,754	34	16	20.58	14.70	17.64	—	2.94
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	108,240	28	11	10.71	7.14	—	—	3.57
Fall River . .	95,919	26	9	23.10	19.25	23.10	—	—
Cambridge . .	89.724	27	10	7.40	3.70	—	—	—
Lowell . . .	88,641	38	15	7.89	13.15	7.89	—	—
Lynn	66,703	21	3	9.52	14.28	4.76	—	—
New Bedford .	66,340	15	5	13.33	6.66	6.66	—	—
Somerville . .	61,101	12	7	—	—	—	—	—
Lawrence . .	57,263	19	11	36.82	15.78	—	—	10.52
Springfield . .	56,501	18	2	11.11	16 66	5.55	—	—
Holyoke . . .	43,424	16	5	12.50	12.50	12.50	—	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem	36,883	10	1	—	20.00	—	—	—
Malden . . .	34,613	4	2	—	—	—	—	—
Chelsea . . .	33,468	6	2	—	16.66	—	—	—
Haverhill . .	32,022	10	3	—	10.00	—	—	—
Gloucester . .	30,589	—	—	—	—	—	—	—
Newton . . .	29,716	2	—	—	—	—	—	—
Fitchburg . .	29,438	4	2	25.00	—	25.00	—	—
Taunton . . .	28,167	7	3	—	—	—	—	—
Everett . . .	25,338	6	5	16.66	—	—	—	—
Quincy . . .	23,549	3	2	—	—	—	—	—
Pittsfield . .	22,643	3	1	—	—	—	—	—
Waltham . .	21,812	5	3	40.00	—	40.00	—	—
North Adams .	20,971	5	3	—	—	—	—	—
Chicopee . .	17,842	13	8	53.83	7.69	46.14	—	—
Medford . . .	16,511	6	—	—	33.33	—	—	—
Newburyport .	14,915	5	—	—	20.00	—	—	—
Melrose . . .	14,032	1	—	—	—	—	—	—

Deaths reported 2,406; under five years of age 1,034; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 475, diarrheal diseases 367, consumption 237, acute lung diseases 203, diphtheria and croup 53, typhoid fever 16, cerebro-spinal meningitis 16, measles 11, whooping-cough 10, erysipelas 2, small-pox 1.

From cerebro-spinal meningitis New York 5, Baltimore 3, Washington and Worcester 2 each, Boston, Cincinnati, Springfield and Everett 1 each. From measles New York 8, Boston, Baltimore and Lynn 1 each. From whooping-cough New York 9, Baltimore 1. From erysipelas Boston and Cambridge 1 each. From small-pox Boston 1.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending June 24th, the death-rate was 16.3. Deaths reported 3,558; acute diseases of the respiratory organs (London) 190, measles 131 whooping-cough 90, diphtheria 80, diarrhea 58, fever 32, scarlet fever 18, small-pox (Hull) 1.

The death-rates ranged from 8.2 in Croydon to 22.9 in Wolverhampton; Birmingham 16.8, Bradford 14.8, Gateshead 17.6, Huddersfield 16.1, Leeds 15.9, Liverpool 21.9, London 15.5, Manchester 21.0, Newcastle-on-Tyne 18.3, Nottingham 16.8, Portsmouth 14.2, Salford 17.4, Sheffield 19.2, Swansea 15.1.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 8, 1899.

Ralph W. Plummer, assistant surgeon, appointed surgeon from June 17, 1899.

J. C. Wise, medical inspector, granted sick leave for three months.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JULY 6, 1899.

Murray, R. D., surgeon. To defer departure to Key West, Fla. (as directed by Bureau letter of May 16, 1899), until further orders, and to proceed to New Orleans, La., for special temporary duty. July 1, 1899.

Wasdin, Eugene, surgeon. To proceed to Norfolk, Va., and assume temporary charge of the Service at that port not later than July 17, 1899. July 5, 1899.

McAdam, W. R., assistant surgeon. Bureau letter of May 15, 1899, relieving Assistant Surgeon McAdam from duty at Key West, Fla., revoked and directed to reassume command of the Service at Key West. June 30, 1899.

Robinson, D. E., assistant surgeon. Relieved from duty at Chicago, Ill, and directed to proceed to Mobile, Ala., and report to the commanding officer for duty and assignment to quarters. June 30, 1899.

Altree, G. H., acting assistant surgeon. Granted leave of absence for four days. July 3, 1899.

Bean, L. C., acting assistant surgeon. Granted leave of absence for two days. July 5, 1899.

APPOINTMENT.

McIsaac, Fred C., appointed acting assistant surgeon, for duty at Evansville, Ind. July 3, 1899.

RESIGNATION.

Brunner, W. F., sanitary inspector. Resignation accepted as tendered, to take effect June 30, 1899. July 3, 1899.

RECENT DEATHS.

William Howard Neilson, M.D., a prominent physician of New Rochelle, N. Y, died on July 6th, after an operation for appendicitis. He was born in New Brunswick, N. J., in 1858, and was graduated from Bellevue Hospital Medical College in 1877. At the time of his death he was a member of the Westchester County Medical Society and of the Board of Aldermen of the city of New Rochelle.

J. E. Graham, M.D., of Toronto, Can., who died a few days ago, was one of the most widely-known physicians of Canada. He was President of the Dominion Medical Association in 1887, of the American Dermatology Association in 1889, and was one of the original members of the Association of American Physicians. In 1893 he was made a member of the Royal College of Physicians, London.

BOOKS AND PAMPHLETS RECEIVED.

Die Ursache übler Nebenwirkungen heisser Bäder und deren Verhütung. Von Dr. Foss, dirigirendem Arzt des Bades Driburg in Westfalen. 1899.

A Ring-pleximeter. A Finger Protector for Handling the Headmirror. A New Hearing Device. By Emil Amberg, M.D., Detroit, Mich. Reprints.

On the Use of the Valerianates of Creosote and Guaiacol in the Treatment of Pulmonary Tuberculosis. By A. B. Briggs, M.D., Ashaway, R. I. Reprint. 1899.

Naphthalin in Typhoid Fever, a Remedy in Preventing Intestinal Putrefaction and Tympanites. By Albert Woldert, Ph.G., M.D., Philadelphia, Pa. Reprint. 1899.

Studies from the Department of Pathology of the College of Physicians and Surgeons, Columbia University, New York. Vol. VI, for the Collegiate Year 1898–1899. Reprints.

The Schleich Method of General Anesthesia, with Special Reference to Nose, Throat and Ear Practice. By W. Scheppegrell, A.M., M.D., New Orleans, La. Reprint. 1899.

The Influence of the Heart-beat on the Flow of Blood through the Walls of the Heart. The Teaching of Physiology in Medical Schools. By W. T. Porter, M.D., Boston. Reprints. 1898.

Urinary Analysis and Diagnosis by Microscopical and Chemical Examination. By Louis Heitzmann, M.D., New York. With 108 original illustrations. New York: William Wood & Co. 1899.

The Surgery of the Head and Neck. By Levi Cooper Lane, A.M., M D. (Berol.), M.R.C.S. Eng., LL.D., Professor of Surgery in Cooper Medical College, San Francisco. Second edition. Philadelphia: P. Blakiston, Son & Co. 1898.

The Higher the Order of Railway Surgery, the Greater the Protection to the Employe, the Passenger and the Company. Appendicitis: When to and when not to Operate. By R. Harvey Reed, M.D., Rock Springs, Wyo. Reprints. 1899.

Text-book of Anatomy, Physiology and Hygiene. By E. Franklin Smith, M.D., Lecturer on Anatomy, Physiology and Hygiene, New York Preparatory School; Member of the New York Academy of Medicine, etc. New York: William R. Jenkins. 1899.

Anæmia and Some of the Diseases of the Blood-forming Organs and Ductless Glands. By Byron Bramwell, M.D., F.R.C.P.(Ed.), F.R.S.(Ed.), Physician to the Royal Infirmary, Edinburgh; Lecturer on the Principles and Practice of Medicine, and on Clinical Medicine in the School of the Royal Colleges, Edinburgh, etc. Edinburgh: Oliver & Boyd. London: Simpkin, Marshall & Co., Ltd. 1899.

Address.

NOT THE DISEASE ONLY, BUT ALSO THE MAN.[1]

The Shattuck Lecture.

BY JAMES J. PUTNAM, M. D., BOSTON.

Mr. President and Members of the Massachusetts Medical Society: — I take as the text for my address the familiar sentiment that often falls so solemnly from the lips of older members of the profession in addresses to students who are about to graduate from the schools of science into the school of life: Remember, when you go to see your patients, that it is after all the man, not the disease, that you are called upon to treat.

Impressive as this phrase sounds, I have often wondered just what the various speakers had in mind. This patient might be poor in purse, that one predisposed to certain ailments; the social or domestic surroundings of a third might make his case a peculiar one, and so on. But such external circumstances, important as they might be, would not exhaust the significance of the admonition. We cannot really know the man whom we are called upon to treat without going far beyond his outward relations and penetrating in imagination deep into his mental life. "The man" is, above all else, the mind of the man, and not only the mind as an organ of conscious thought but the mind as an organ of bodily nutrition, and the mind as a vast theatre for the interplay of contending forces that do not always recognize the personal consciousness as their ruler. This is the man that the doctor should learn to know and treat. The need is not met by kindliness and humanity alone; the task is one for science also. Yet medical schools do not prepare their students at all adequately for this duty, or include a knowledge of psychology among their requirements for matriculation. The genius of the truly great physician may bring him to the goal, it is true, without a master's guidance. But if we are not content with the intuitions of the few; if we wish to see principles laid down that shall reflect the highest possibilities of medicine, the training of the doctor must begin during college life. I should rate a thorough preliminary course in psychology and philosophy far above a knowledge of botany or zoölogy, and as following close on chemistry and physics, as a preparation for the work of a general practitioner.

It is not the least of the benefits that will come to us from the insistence on a college degree as a condition for entrance to the Harvard Medical School, that a better chance will have been afforded for remedying this lack in the students' fitting. We want to see in the men whom our university sends forth, proud of her warrant of tasks faithfully performed, not only sporadic signs of a capacity to recognize and control, each after his own fashion, the gigantic and ever active forces of the mind, but abundant evidence that this problem has been, in all its many aspects, an object of their studious thought. The physicians who have previously been good students of psychology have, in my experience, proved themselves to be men of unusually broad sympathies and high ideals, and keen to see causes of disease to which the pure pathologist is often blind. For what a man sees or fails to see depends, as we all know, on how the vast storehouse[2] of his mind has previously been stocked. The inhabitants of that hidden world, like groups of men in society, welcome the new comer whose manner and dress are familiar, and let the others pass unnoticed.

No argument is needed to show what transforming power the mind can exert. The energy set free by the magic agencies of hope, courage, desperation, fanaticism, or by the enthusiasm for a great cause, may reveal the possession of a force undreamed of, or so husband the resources of the body as to keep the flame of life burning for a time when the oil seems exhausted. These great influences have been the doctor's best ally since time began; the harp of David singing to Saul is heard again in the music which is used to tie with new bonds to life the inmates of our State Hospital for the Insane at Danvers. The great leaders of the scientific centuries to which we belong have indeed turned a cold shoulder on the time-honored methods of cure by faith and fear which had worked miracles for ages past. Their work lay in establishing the reign of exact methods of inquiry, and they would tolerate no systems that rested on a less firm basis. But the movement which the labors of these men of science inaugurated is now secure beyond all hazard, and the time has come to recognize that there are others that may justly lay claim to our attention. We may accept the limitations which the scientific method imposes, even to the point of sacrificing intuition for the sake of a more conscious insight. But we should not admit any arbitrary limitation of the field of inquiry, nor rest content until scientific research has taken all the divinations of instinct into account. The splendid wave of pathological and bacteriological research that has raised the art and science of medicine to its present position of authority has set physicians trying to solve their problems in terms of pathology alone; but it is a matter for congratulation that this wave is being reinforced by another which is sweeping us toward a better knowledge of the secrets of the mental life in health and disease. Perhaps we may even learn thereby to interpret the teaching of pathology itself in a wider sense.

The physician is an educator; the successes of the schoolmaster are his successes; the fact that even after such long years of scrutiny and experience the pedagogue still finds new methods of impressing his pupils, and new principles to guide him, gives warrant for the hope that the same may prove true for the physician, provided only that he brings the same amount of patient labor to the solution of his special problems. I doubt if most general practitioners are aware how far, in fact, this hope is already realized. We all hear of the triumphs of surgery, and every doctor feels a personal pride in spreading the news of them abroad. But there are not so many who know that there are men, as yet few in number but of equal genius, who with equal devotion and study have been searching for means to change, little by little, the trend of the forces that work within the mind, and are thus silently laying the foundations of a new departure in therapeutics. This is education of a high order,[3] and such studies as these must yield conclusions that the well-trained doctor will find use for in his daily practice.

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[1] Delivered before the Massachusetts Medical Society, June 13, 1899.

Note. — While this lecture is in press the news arrives — to the disappointment and grief of his many friends — of the fatal ending of Dr. Russell Sturgis's long illness. The loss is an especially serious one for the progress, in our community, of the cause which this address was designed to make more popular, and to the furtherance of which he had brought original investigations of substantial value.

[2] I do not think it really accurate to speak of the brain as a "storehouse," as is so often done, though the term is familiar and expressive. In fact, the brain is no more a storehouse of the events that have transpired in and through it than the brass disc is a storehouse on which the sand will shortly arrange itself, at the touch of the bow, in the wonderful Lissajou's lines, or than the sounding-board of a piano is a storehouse. When the brain is inactive (if one could imagine such a state) it is incapable of telling any story as to its history. But each new stimulus revives each old activity, of identical, or similar, or congruous, or contrasting sort, and so on. The reviving flash of consciousness which occupies each new moment, like the thrill which at the same moment sets the brain into vibration, is a single complex impulse, an instantaneous photograph, and although it takes the form of memory, it belongs in fact wholly to the present.

Neither does it seem to me exact, at least from the point of view of the cerebral physiologist, to speak of "inheriting ancestral experiences." What we inherit is a brain so plastic in certain directions and so little inhibited on those lines that it organizes its experiences of certain sorts with great rapidity.

The power which passes as "intuition," and which seems endowed with faculties that transcend and antedate experience, may, I think, be, after all, experience — taught, though the teaching is marvellously rapid and effective. Any one of us, if he could have appreciated and appropriated and made his own all the opportunities that have been afforded him for education of the brain in any special line would be a genius in that direction.

In the sort of training that is undertaken for the sake of breaking up morbid habits of the nervous system, or of establishing favorable habits under difficult circumstances, the need is even more evident than where only the teaching of the schoolroom is at stake — of inducing reactions that shall have an effective outcome. Definite accomplishment, and motion at any rate are often the prime conditions of mental health. If water does not flow it stagnates, and the more so in proportion to its lack of purity. To this outcome of effectiveness, the effectiveness which implies continuous growth through utilization of evil and of good, the influence of the doctor, above all other educators, is instinctively pledged. No wonder that his efforts are often crowned by disappointment and failure; these are but the disappointments and failures of the schoolroom intensified.

Fortunately, no one here is likely to interpret too narrowly the meaning of effectiveness. There is absolutely no criterion of accomplishment except that which should say whether or not a man had done his best. To refrain from acting is often the fullest act. Washington coolly facing his enemy and his own limitations, and waiting for the chances that rarely came, presents no figure of greater energy or heroism than is presented by the resigned, the cheerful, the ever-ready neurasthenic patient who is doing the best he can. "They also serve who only stand and wait."

The doctor is most obviously an educator in dealing with the training of children, when the task that he sets for himself is practically identical with that necessarily set for the schoolmaster and the parent. I refer to this class of cases for the sake of calling attention to the remarkable results now attained at the various institutions for defective children in this country and in Europe, among which our Massachusetts School for the Feeble-minded, under the able leadership of its present superintendent, might compete for the highest rank. So fine are the chances thus presented that the definition of feeble-mindedness is now being widened to secure the benefits of this training for children not heretofore recognized as defective. Even when regarded simply as schools for the training of teachers and the development of methods of teaching, such institutions as this are bound to hold an exceptional place, because in order that any success at all should be gained, the slightest action and reaction of each pupil's mind have to be recognized, while the educational principles that are followed must be of the best sort, and must be administered with personal devotion and close attention to details.

Even where the child is not strictly defective, but simply a hard case for the parent and the schoolmaster, the methods of influence to which clinical research has given birth are likely to find an important if not a wide field of usefulness. The subject is too large a one to speak of in detail, but there are cases, as the teacher should realize, where the birch and the fool's cap are less useful than the training by the aid of influences such as I shall presently refer to, to be administered under the skilled supervision of the doctor alone. Certain disorders of the physiological reflexes, such as enuresis, are eminent examples of an analogous though a more obviously medical sort. There are cases of this kind where even hypnotic suggestion, of a mild degree and such any physician can soon learn to use with safety and sufficient skill, is the best cure. In fact, the only rational treatment of enuresis and constipation consists in a re-training of the physiological reflex, and the re-establishment of the all-powerful habit and expectation on which they rest. Mechanical and medical means may be used to further this design, but the routine employment of drugs without this end in view does but rivet afresh the assumption and habit of failure. That part of the conscious life to which, after the early years of childhood, the control of such functions as these is delegated should be taught again to work in harmony with the general needs.

But the doctor is seen also in his function of educator when dealing with clinical cases of a commoner sort. Sometimes a process of training must begin afresh because the old machinery of the nervous system has become defective through disease. No year now passes without its records of new successes in this line.

Thus, in spite of all the study that has been given to the treatment of locomotor ataxia, it is only recently that we have learned (under the leadership of Frenkel) that patients with this disease, even when bed-ridden from inco-ordination, can be taught by systematic gymnastics to use their muscles anew, and can thus regain to a considerable degree the lost control over their limbs. A therapeutic discovery like this is a sign of promise, and an inspiration to new research in other lines. The ataxia of the muscles typifies also the ataxia of the mind and of the other functions of the nervous system. We pay dearly for the possession of the intricate machinery which gives us our vivid imagination, our retentive memory, and that power by which we are able to grasp at each moment all the threads of our past experience and to weave them into a new fabric for the service of the present. Mischief begins when the demands of this service cannot be properly met, and the different parts of the vast machine run too fast or too slow; the delicate adjustments fail to respond or work too fine. Then the heart palpitates, which should simply strengthen its beat to meet a need for more blood. Then a bronchitis provokes an asthma, and this recurs and becomes a habit. Or a painful impression that should have disappeared with its cause, swept down the swiftly flowing stream of consciousness, is caught by a backwater, or rolled to and fro in an eddy from which it cannot escape. Or, again, the instinct of imitation, imitation of others or of ourselves, makes us copy and perpetuate a bad trick of muscle or of thought. And so arise the diseases of morbid association and habit[4] the caricatures of the arrangements and co-ordinations of health. Here is a singer[5] who in the first days of his career found himself with beating heart[6] and shaking voice in consequence of a stage fright. He is now a veteran, and no longer stirred by fear of failure, yet his old fright remains indelibly stamped upon his trembling muscles, which do their best, in their turn, to drag back the old emotion. There is at first a divorce between the bodily manifestation and the mental state, and then a new union an abnormal lines.

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[3] I will refer, simply by way of illustration, to the recent searching analysis of clinical cases by the now well-known Pierre Janet: Névroses et Idées fixes, Paris, 1898. The following paragraph, p. 406, which concludes one of the chapters, may give some notion of the author's aim and spirit: "Objective psychology (that is, by clinical observation) does not aim at supplanting subjective psychology, which will remain indispensable for the study of the laws of thought. Neither does it aspire to set up any system of metaphysics or religion, or to overthrow any earnest belief. Its task is to gather together the facts which are essential for a real insight into the working of men's minds, and to discover the art of securing the freest play for healthy mental life and the best alleviation for mental disease."

"I am not frightened, but my body is," said an intelligent friend. "It is my body trembles at the sight of the dangers into which my triumphant soul will carry it," said a hero of an earlier day.

Or, again, to take an example of a habit disease of another sort, here is a patient who has had an inflamed joint. It is long since the local disorder passed away, yet the pains which used to attend it recur at every trifling movement which even remotely resembles those that used to drag upon the sensitive part. The demoralization following illness, or misfortune, or accidents, is a rich source of such disorders. A patient has haunted our hospital clinic for a long time who thirty years or more ago received a blow upon the head which set up a spectral pain that has been his constant companion ever since, though even now he looks in blooming health. Any innate weakness which prevents the brain from carrying on its normal function of prompt, efficient reaction may allow morbid tendencies of these sorts to establish themselves, as weeds grow in a soil too poor to support a better product.

It is not correct to say that these pains are "imaginary." Regarded psychologically, they are just like all other pains. On the field of battle even the ordinary physical causes of pain may fail to cause it, for the impression is followed by no reverberation within the soldier's conscious attention. In the conscious attention of the over-sensitive patient, on the other hand, this reverberation is excessive, and thus the merest hint of physical cause, a whisper of apprehension, the influence of cyclic recurrence like that which reproduces sleep, or even the influence of memory, may make the pain come back.[7]

Fortunately, the knowledge that so many of our ills have this mental origin stimulates to the search for new means of cure, for new means of securing some strong outward trend for the active forces of the brain and thus inducing a little of the healthy anesthesia of the battle-field.

The patient finds it hard to credit the fact that his sufferings are due to mental representation alone, and no wonder. For by what criterion can he, unskilled and anxious, be expected to decide, when the physician, with all his means of diagnosis, is so often in doubt? Frequently, of course, the symptoms are only partly due to habit, and partly also to some local cause. Every good physician is aware of this, but it is not so well known that the removal of other physical disorders, perhaps not originally connected with the symptoms at all, but now a real complication, may induce a partial or temporary alleviation, which will supply the very impulse that was needed to give new hope to the mind and a new "set" to the functions of the nervous system. Thus it is that the treatment of trivial diseases of the eyes or joints can sometimes work such wonders; and thus, too, the new doctor so often eclipses the old. On the other hand, the keen physician will not let himself be trapped into the error of concluding that he has found the cause of the illness because he has found the cure. This is a piece of false reasoning that has worked much mischief and has often brought an unmerited credit to immature theories of disease.

The subject of the *social etiology* of "habit" disease has many interesting and important aspects. Prof. William James[8] has recently suggested that many of the racial peculiarities, such as the high-pitched, anxious voices, the hurried manner, the "over-modelled" faces that do not easily relax, the tense and exhausting eagerness, which visitors see so often among the people of old New England, are due not so much to excess of sunlight and dry air as to tradition and imitation. A comparative study of the varied races of which the population of New England is now composed, made from this point of view and as a basis for more rational treatment, would be heartily welcome. This or that American or Irishman or Jew cannot be treated to the best advantage so long as he is regarded solely as an individual. His racial traditions and temperament should be taken instinctively into account, just as the pianist (to borrow a simile used by Kries) on starting to play a piece of music, glances once for all at the signature which indicates the key in which the piece is written, and then, without need of specific reflection, goes on throughout playing the notes with their appropriate sharps and flats.

To learn to do this sort of thing, to speak and comprehend the mental language of all sorts and conditions of men, is one of the many important tasks which the physician will in time learn to perform.

The existence of these habit diseases is known to every doctor, but this very fact is liable to give one a false sense of confidence in his ability to recognize them. Common as we may think them, they are yet commoner than we think. The most striking forms are seen in hysteria, the chief characteristic of which is that the patient's consciousness is split up into more or less separate groups of forces, which strive with each other for the mastery. The patient is no longer a consistent unit, and is forced, against his will, to play, with the skill of genius, the rôle of disease.

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[4] At the last annual meeting of this Society various types of habit neuro-psychosis were described by Dr. Edward Wyllys Taylor: Boston Medical and Surgical Journal, July 21, 1898.

[5] This illustration is given by Dr. Morton Prince, and I take occasion, in citing it, to call attention to the excellent work which he has done in this direction. See various papers published in the Boston Medical and Surgical Journal, 1898; also Association Neuroses, New York Journal of Nervous and Mental Diseases, 1891.

[6] The presence of these cardiac and circulatory phenomena, as a part of the habit neuroses, is a complication of a peculiarly distressing and important sort ("Angst-neurosis"). See Heart Fear, by W. T. English: Medical News, April 29, 1899; also L'Education de la Volonté: Payot.

[7] Dr. Morton Prince has suggested that the excessive tendency to the mental representation of pain shown by certain persons justifies the designation of them as "algesics," just as other persons to whom visual images readily occur are called "visuals," and so on.

Dr. Mary Putnam Jacobi thinks it possible that the increased sensitiveness of the "pain-memory" may be a part of the general increased attention to the history of the past, though a morbid example of this tendency. New York Medical Journal, April, 1898.

[8] Talks to Teachers. 1899.

But hysteria is not the only soil on which these disorders grow, unless indeed we admit that the hysterical tendency is universal, and that hysterical disabilities and eccentricities are but acute forms and caricatures of the disabilities of normal or quasi-normal life. The term "hysteroid," which retains the notion that such affections are due largely to mental representation, is often an appropriate designation.

The "accident neuroses" form an especially important sub-group, the more so that one can trace, both in the influences which make certain classes of patients peculiarly susceptible to them, and in those which finally excite the outbreak and give it its special form, the play of forces that recall "hypnotic suggestion," and are seen at work on a large scale in mob-madness or panic. The patients who suffer from the severer forms of these disorders are, strangely enough, largely of the mechanic and wage-earning class, who, although sturdy, and used to hardship of various sorts, are apt to be lacking in social and general experience, and are not trained in the sort of self-control that society expects from its members, while, at the same time, their lack of a fixed source of income makes a period of enforced idleness a matter of great moment to them. They are not, as a rule, predisposed by neurotic inheritance, and have usually been strong and healthy, but the traditions of the community in which they were born and bred inculcate the instinctive belief that accidents are terrible events and lead to mysterious and complex troubles. To the patient whose mind is thus stocked with traditions and instincts sympathetic to misfortune, there come next the startling and disabling circumstances of the accident itself, which dethrone the self-control and profoundly disturb the emotions and through them the action of the circulation and the heart, and to this is added the special "suggestion" furnished by some local injury or special fear. It is then as if some one had whispered to the demoralized patient, "Your arm will be paralyzed," or, "You will be an invalid for years." These cases are extremely numerous and immense sums are paid on them in damages. The general practitioner can do the community great service by recognizing and spreading the view that serious as such illnesses often are it is largely mental causes that make them so. A stalwart position of hopefulness taken by the attending physician, at the outset, as a basis for a persistent and thorough treatment by encouragement, and explanation, and personal influence, before morbid habits and invalidism have become ingrained, may save many a patient from a demoralization that the money secured by the verdict cannot make good. How often, on the other hand, does the doctor say: "Madam, you really ought to take care of yourself; you are far more severely injured than you think you are." There is usually a period, to be sure, at the very beginning of the case, when it could be said with truth that the patient is "more severely injured than he thinks he is," because the disturbance that is going on in the deep sea of his mental life has not yet reached the surface. But for him this is a blessed ignorance, and it is a misfortune when the time comes that it is exchanged for a delusion as to the real nature of his disease. It is not the hope of gain that is the prominent factor here, in spite of the raillery of the court room. Doubtless it plays its part, but the essential influence is the disorganition of the forces that rule within the mind, and that, instead of acting in harmony, as they should, break into disorder, like soldiers in panic, and then instinctively seek to readjust themselves under any tolerable, if imperfect, organization and leadership. Happy it is for the patient if this reorganization is effected under the guidance of a doctor who has had the fortune to be graduated with high marks from some philosophical department as admirable as that of our good foster-mother across the river, and thus buoyed up, has brought an undivided will to the study of medicine.

In the treatment of all these "habit" cases, a persistent and insistent *encouragement*, based on a physical examination of rigid thoroughness, and accompanied by an *explanation that has the force of encouragement*, and leaves no doubt as to the physician's conviction, will often clear out the weeds that block the flow of the river of consciousness and let the current sweep along, with the self-obliviousness of healthy activity, in its old channel.

It is a striking fact, as regards explanations, that they have much greater weight after the physician's authority has become established by the partial success of his treatment. The arguments offered beforehand may have been just as convincing as those offered later; so delightfully logical, in fact, that the physician often buttons on his overcoat and leaves the patient's door with the self-satisfied conviction that the battle had been won for both parties. How great then is his surprise, amounting almost to indignation, when he discovers, at his next visit, that not even the outposts of the enemy have been won. Let the patient's confidence have been gained by a little success in treatment, however, and he may accept (sometimes too readily) any explanation, logical or illogical, that the doctor is inclined to offer. All mental healers know this well, and have known it, doubtless, since long before the day when the doubting and suspicious Naaman professed himself ready to accept the religious views of Elisha in return for the cure of his leprosy. The explanations of the doctor are in fact quite as much an appeal addressed to the faith as an argument addressed to the reason.

It will be remembered that Naaman, who was a captain of the host of the King of Syria, was afflicted, according to the diagnosis of the times, with leprosy, and that he was sent by the master to the King of Israel, at the instance of the captive Hebrew maid, to be cured by Elisha the prophet. "So Naaman came with his horses, and with his chariot, and stood at the door of the house of Elisha." Perhaps in his heart he expected failure, and expected it the more that he had pictured to himself just what steps the prophet would take to cure him. When, then, instead of coming down to meet him in person, Elisha left him standing with his retinue at the door, and sent word to him that he should go and wash in Jordan seven times and he would be clean, Naaman turned and went away in a rage, saying, "Are not Abana and Pharpar, rivers of Damascus, better than all the waters of Israel? May I not wash in them and be clean?" And it was only when his servants pointed out to him the folly of his childish passion, saying, in effect, "If the treatment does you no good, it will do you no harm," that he consented to the prophet's conditions. Consent he did, however, and not only was he cured, but he promptly became a convert to the true faith, and one may suspect that he would have been willing to accept any proposition that Elisha had chosen to offer. This parable, as one may call it, is instructive in many respects besides that of indicating the power which the physician acquires over his patient through his success in treatment. It illustrates strikingly with what complex feelings the patient goes — half trusting, half doubting — to see the doctor, and illustrates, too, how the doctor is sometimes put to his wits to see that he does not discount his authority with the patient by letting him dictate the details of the treatment.

I permit myself to say, however, that such an enforcement of conditions, unmeaning in themselves, although it is an effective device and often a necessary one, represents a means of maintaining authority which every physician should try to eliminate more and more as the relations between himself and his patient become established on a more natural basis. We must cure our patients if we can, even if it is necessary to put on the manners of the Grand Pasha, or to hold ourselves as remote as the Mikado; but, on the other hand, something may be risked in the interests of directness and simplicity.

Where simple encouragement and explanation fail, it is often possible to induce the patient, by coaxing or training, to do something which even he must see that he could not have done if his own diagnosis had been correct. If, for example, he has lost temporarily the power to move a limb in a certain way, he can perhaps succeed, under assistance and supervision, in making a sudden motion which will include the lost movement, among others; and then he can be taught to analyze his sensations and to differentiate his efforts. Even pain (in suitable cases) may gradually be cast out if the patient is encouraged to note that "this time," or "that time" it was less severe, until he learns to have an alternate picture of himself as free from it, which at first he did not have. Fortunate it is if the patient can be led to take interest in the "habit" theory, and still more fortunate if he takes to himself the credit of the cure.

Where all these means fail, the physician must make his influence strike deeper. He must himself recognize that one reason for the persistence of habits is that they represent the active intervention of a portion of our consciousness which lies outside the field of our personal attention; beyond the direct reach of our personal will. This hidden consciousness, that plays so active a part in causing our morbid acts, is no stranger, but on the contrary an old friend. The power that thrusts an obnoxious act or thought into the current of our lives is closely related to that power that notes the flight of time during the night, waking the nurse at the appointed hour, or to that which tosses up to us the memory of a forgotten engagement — sometimes, alas, too late — as a chip is tossed up by an eddy in the stream. In the technical language of the day, this power is called "our subliminal consciousness," that which works "below the threshold" of our personal attention. I prefer myself to call it the "sub-personal (or extra-personal) consciousness," but it will be better if you will forget names and seek in your practical experience the warrant for the truth of what I say.

(*To be continued.*)

Original Articles.

THE "RIGHT-ANGLE" CONTINUOUS INTESTINAL SUTURES.[1]

BY HAYWARD W. CUSHING, M.D., BOSTON.

THE ideal intestinal suture is the one which combines greatest rapidity in formation with maximum security from extravasations of intestinal contents. To fulfil these requirements there must be exact adaptation of wound edges and an accurate apposition of serous surfaces; also simplicity in construction, since ease in application means rapidity in operating, and adaptability to general use demands a technique uncomplicated, readily understood, and requiring only such materials and instruments as are commonly at hand, or easily to be obtained.

A short experience usually demonstrates that "continuous" sutures have a great advantage in regard to the ease and rapidity with which they can be inserted. The time spent in knotting a fine wet thread, with fingers sticky with blood, in an intestine difficult to hold as a wet rag, is surprisingly long.

It is true that some other sutures are usually firm, accurate and handsome; but the extra time required to tie twenty or thirty knots is a very important factor in the success of an operation when the patient is rapidly approaching collapse. The result of my observations is that an intestinal wound can be closed from one-third to one-half more rapidly with a continuous suture than by any other form I am cognizant of. In 1886, after many experiments, and an extended investigation of the best sutures then known, I was convinced that the method I then described as the "Right-Angle" continuous was the most satisfactory, other methods being discarded on account of their complex character, or the length of time and especial appliances required for their formation.

The "right-angle" continuous suture is a modification of the Kürschner, or the "continuous Lembert." It has been called by some surgeons a modified "Appolito." It excels not only in neatness of appearance, but also in accuracy of wound union. It is not only continuous but is also a "buried" suture, reducing adhesive inflammation to a minimum. It can, with some practice, be applied easier than other sutures. It can be applied *more rapidly than other sutures* with scarcely an exception — a point of great importance. One of many trials is the following: Resection of human ileum; Lembert sutures required fifteen minutes; the continuous "right-angle," two experiments, five and nine minutes. I have united a resected ileum in the living human subject in eight and two-thirds minutes. With this suture the greater the distention of the intestine the closer the edges of the wound are approximated. It can be interrupted at any point, if desired. It can be reinforced by another superimposed, if any point seems insecure either by itself or an "interrupted Lembert."

Its disadvantages are that its technique is not so readily learned as some; for example, the "Lembert." Again, it has been claimed that if there is much intestinal distention constriction occurs, with resulting obstruction to blood circulation and recoveries. I have found no record of such a result from a continuous suture. In my own experiments on living intestine or clinical observations it has not occurred. It is rather an advantage, since the constricting circle is during distention more deeply buried (Fig. 1), thus approximating more extensively the inverted serous surfaces through whose union, mainly, fecal extravasation is averted. With the Lembert the reverse is true. The sutures separate as the intestine distends and its circumference increases. The inverted edges become narrower by this stretching and are in danger of everting and prolapsing outward between the sutures. Fecal extravasation is then possible.

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[1] Presented at the twentieth meeting of the American Surgical Association, Chicago, June 2, 1899.

In regard to septic infection and suppuration along the track of the suture while being cast off into the lumen of the intestine, I know of no case where this has occurred. The experiments on animals show that the sutures may be partly exfoliated and hang free in the lumen of the intestine without causing septic inoculation of the wound, which has united long before the suture is thus freed, which requires from two to three weeks.

After an extensive review of the literature of the subject, careful and extended experimentation with living animals, practical tests and experiments with various sutures in the dead human intestine, and from personal observation during years of hospital service I concluded that the most satisfactory sutures in most cases was the "right-angle" continuous, reinforced by a similar one superimposed; or by an "interrupted Lembert," if isolated points only require to be secured. If the suture is properly made, this reinforcing will be, as a rule, unnecessary. The reasons for this conclusion are:

(1) The suture does not involve the mucous membrane.

(2) The intestine is closed by a suture which acts so that the greater the tension to which it is subjected the closer it is drawn.

(3) It can be inserted very rapidly and easily.

(4) The closure of the intestine is impervious and efficient.[2]

(5) Its technique is simple.

In proof of the efficiency of this suture I desire to report a few results, recently collected, where it has been used by other surgeons[3] than myself. It is not a complete report of the clinical history of the method, for I have as yet made no effort to obtain such. I readily obtained records of twelve cases (including one case of rupture of the bladder), which include four resections,—two cecum, one ileum, one not stated,—four wounds, tears, ruptures or stabs, — one case, nine wounds of small intestine, — two fecal fistulæ, one stomach anastomosis.

Of these patients 75 per cent. recovered. In the fatal cases the wound was found closed or united in all except one, where the cause of death was pulmonary embolism. Here there had been distention of the intestines, so extreme that several of the reinforcing layer of Lembert sutures had been torn out. The "right-angle" suture had also torn through at this point. These are not selected cases, but are reported as they were collected. Some of the patients, exclusive of the fatal cases, were desperately ill.

The length of time to close the intestine is interesting.

For the tears and wounds, that is, longitudinal sutures, the average was six and one-half minutes. One wound, two inches long, was closed in two minutes. One, two inches long (operation fecal fistula), required fifteen minutes — the maximum. The resection wounds averaged ten minutes without the reinforcing suture. In one case the second continuous suture was placed in four minutes. I therefore think it is fair to assume that the above data demonstrate that one can expect to close, with this suture, an ordinary intestinal wound or tear in six to seven minutes, or unite a resected gut in ten minutes. That when so united it will hold, if not better, at least as well as the best methods we now have at our command.

The technique of the perfected "right-angle" continuous suture is as follows: For uniting longitudinal wounds it is inserted as shown in Figs. 2 and 3. The most satisfactory results are obtained in the human intestine by placing the points of puncture one-eighth of an inch (3 millimetres) apart, and by burying the suture to the same extent in a direction parallel to, and three-sixteeenths of an inch (4–5 millimetres) distant from, the wound edge. The needle traverses the tough fibrous submucous layer, and is not intended to involve the mucous membrane or penetrate the intestinal cavity. Each stitch of the suture should be drawn tight, so as to accurately appose the wound edge before the next is set.

A resected intestine is united by the same suture, but formed as follows: It is begun at one side of the mesenteric attachment by an inverted Lembert suture, which is tied, and the free end (Fig. 4*a*) left pendent from the knot.[4] The resected edges are now united by the "right-angle" suture, which is inserted in the same manner as in a longitudinal wound, commencing at the point of union already made, crossing the mesenteric attachment (Fig. 5) and continuing along parallel to the resected edges of the gut, till the free end (Fig. 4*a*) at the point of commencement, is reached. Care should be taken not to increase the distance of the suture from the resected edge, thus inverting a wider border. The suture also should not be drawn so tight as to pucker or diminish the intestinal circumference. The union of the "terminal" end with the "initial" free end (*a*) by a square knot (Fig. 6) completes the suture, the (free) ends of which are now cut close to the knot (if silk, one-tenth inch, 2 millimetres, long), which sinks out of sight between the approximated serous surfaces. The completed suture presents the appearance shown in Figs. 1 and 7. The mesentery is united by inverted Lembert sutures, interrupted, set on each peritoneal surface (Fig. 7). A very thin mesentery is best sutured by an ordinary interrupted suture. Continuous sutures, when of any length, have been found at autopsy to have relaxed and allowed the mesenteric wound to separate.

For the suture I use the finest white silk, "Machine

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[2] In hydrostatic tests during experimental work the intestine ruptured at other points, usually along its mesenteric border, before the suture tore out enough to permit leaking.

[3] These results are from the records of Drs. H. L. Burrell, F. S. Watson and J. C. Munro, through whose courtesy I am able to report them.

[4] By commencing the suture at one side of the mesenteric attachment as above described (Fig. 4*a*), that portion of the wound is united first, and at a time when it is most accessible. The advantage of this is self-evident, since this is the most difficult point to unite securely, and at which fecal extravasation is most apt to occur. Also when completing the suture the operator can make the last few stitches and tie the final knot in full view, at a point easily accessible, instead of at one so concealed and difficult of access as that portion of the wound about the mesenteric border, the site frequently selected for the completion of an intestinal suture.

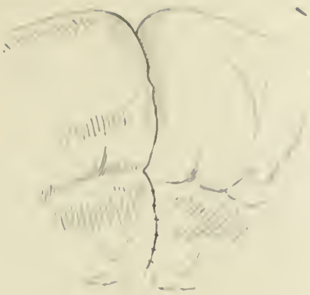

Fig. 1.

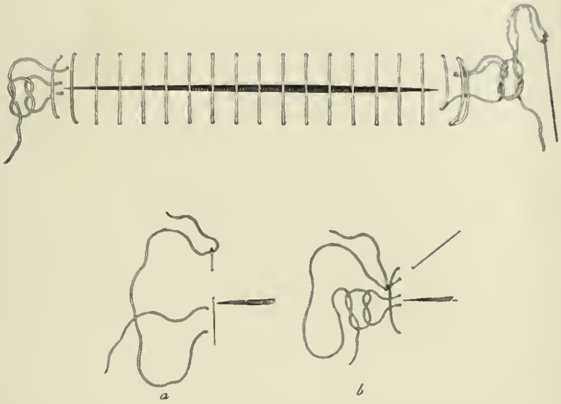

Fig. 2. Diagrammatic. Actual size, as in human ileum. Peritoneal surface. *a–b*. Plan of suture at commencement of insertion.

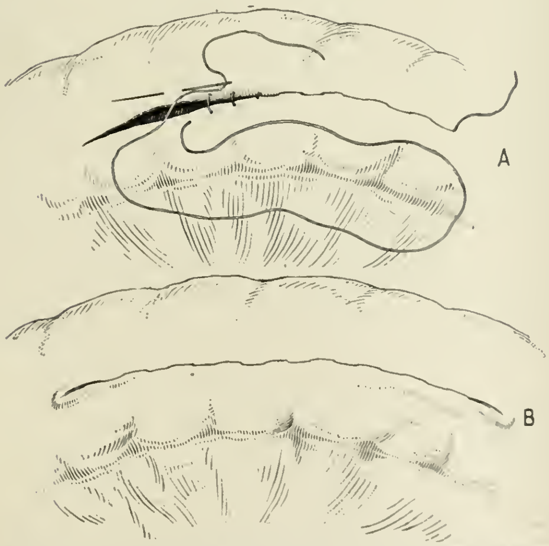

Fig. 3. Ileum. Peritoneal surface. A. Suture in various stages of its formation. Note the direction of the needle inserted parallel to the wound instead of at a right angle to it, as in the Lembert and many other sutures. B. The completed suture. No knot or suture visible.

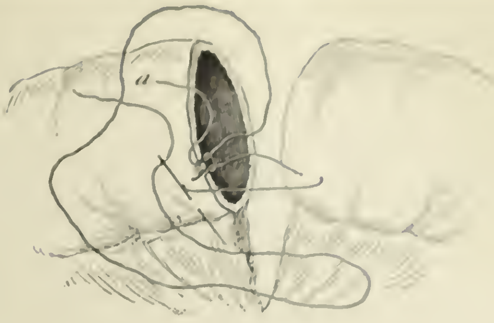

Fig. 4

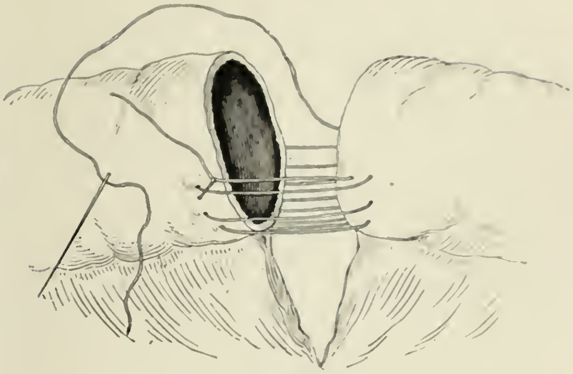

Fig. 5.

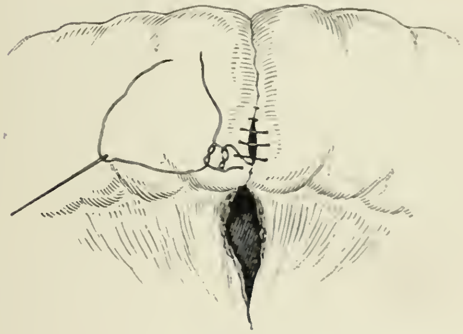

Fig. 6.

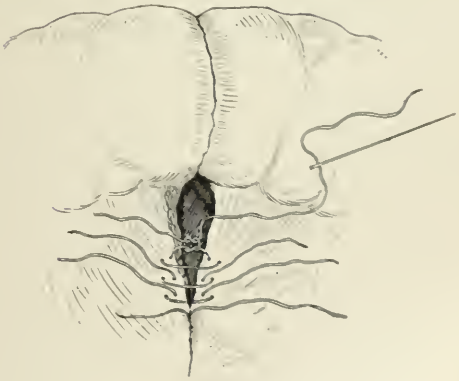

Fig. 7.

twist," J. D. Cutter, No. 000, sterilized by boiling, preserved in sublimated (one-tenth per cent.) alcohol (95 per cent.).

The best needle is a "self-threading" or "spring-eyed" round sewing-needle, one and one-sixteenth inches long. By having this ground flat like a "Hagerdorn," an instrument is obtained which combines all the advantages of the round needle usually used, and is far superior to it, on account of the ease with which it traverses the intestinal wall.

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THE EXAMINATION OF STAINED SPECIMENS OF BLOOD IN ITS APPLICATION TO CLINICAL WORK.[1]

BY HENRY F. HEWES, M.D., BOSTON.

(Concluded from No. 2, p. 41.)

A study of the white corpuscles of blood may, like that of the red, be of considerable importance in connection with the study of our clinical cases. As we have described, in normal blood the leucocytes are present in a certain definite number, the limits of the normal variation being, in the fasting condition, between four and eleven thousand per cubic millimetre of blood. This total number is made up of three and only three distinct types of leucocyte, the distinguishing feature of each type being the staining reaction of the granular cell protoplasm. Each of these three types of leucocyte is present in a certain proportion one to the other. The changes in the characteristics of the leucocyte picture which we find in pathological conditions include variations in one or all of the above conditions or essentials. That is, we may have abnormal varieties of leucocytes in the blood or an abnormal proportion of some one of the normal leucocytes, or an abnormal number of leucocytes present in the blood (the peripheral blood).

There are several forms of leucocyte found in the blood of pathological conditions which are never seen in normal blood. Of these there are two forms which may in the present knowledge of pathology have a practical significance for us in clinical work. These are the two forms of *myelocyte*, the neutrophilic and oxyphilic.

The *myelocytes* are so called because they resemble, and probably are, cells native to the bone marrow. These myelocytes resemble to some extent the normal neutrophiles and oxyphiles, which are in all probability developed directly or indirectly from them or similar cells. They differ from these normal leucocytes, their derivatives, however, in several characteristics, of which the chief is the character of their nuclei.

The normal neutrophile (the polymorphonuclear neutrophile) with its ameboid character has an irregularly-shaped nucleus. It may be horseshoe-shaped or may appear as several nuclei (polynuclear leucocyte). It is never round (practically).

The neutrophilic myelocyte is a round nuclear, neutrophilic cell. The nucleus is spherical, of less intense stain than that of the normal neutrophile. It occupies, as a rule, three-fourths of the cell, and is well marked off from the surrounding protoplasm. The protoplasm is studded with neutral-staining lilac granules, similar to those of the normal neutrophile. In size this cell is, as a rule, large, but it may be of any size. It is non-ameboid. This cell is found in health in the red marrow of the bones. According to Ehrlich, here these cells can be found in all stages of development from basophilic tissue cells, and here also may be seen all stages of development of the normal neutrophile from these myelocytes. In this connection it is interesting to note that myelocytes in the blood can by appropriate staining frequently be made to show both neutral and basic granules in the protoplasm, while with the same staining process the normal neutrophile shows the neutral granules alone.[8]

The differences between the oxyphilic myelocyte and the normal oxyphile are on the whole the same as those distinguishing the neutrophile. The granules of the oxyphilic myelocyte are, however, much larger and darker staining than those of the normal cell.

Neutrophilic myelocytes may occur in the blood of a considerable number of pathological conditions. They are generally present in small numbers wherever a neutrophile leucocytosis occurs, as with the leucocytosis of infectious diseases, suppuration, etc. That is, apparently in the exodus of the marrow stores of neutrophiles in response to the chemotactic influence present in these conditions, some of the myelocytes are carried out. In rare cases of pneumonia and diphtheria as many as 10 to 15 per cent. of the cells have been found to be myelocytes. This myelocyte is most in prominence, however, in conditions of myelogenous leukemia. Here it occurs in such numbers, often 20 to 50 per cent, and associated, as a rule, with so great an increase in the total number of leucocytes that a pathogneumonic blood picture of myelocytosis is presented.

The oxyphilic myelocyte is found in the blood in cases of myelogenous leukemia. It is rarely found in other conditions.

There is one cell which occurs in small numbers in normal blood, which is found in considerable numbers in some pathological bloods. This is the mast cell. This cell is a basophile with this modified Ehrlich method of staining, and we do not distinguish it from other basophiles in our classification. The mast cells are large cells with a fragmented or three-lobed nucleus and a protoplasm studded with large basic granules. This cell is a common feature of the blood of myelogenous leukemia.

An actual increase in the number of leucocytes in the blood is a symptom of a great variety of conditions. Such an increase is almost invariably associated with a relative as well as an absolute increase of a particular form of leucocyte. A relative increase in the proportion of one or more normal or abnormal forms of leucocyte, occurs in a great number of conditions. It may or may not be associated with an actual increase in the number of leucocytes. This subject of the absolute and relative increase of the various leucocyte forms will be taken up in the study of leucocytosis.

In its broadest sense the term *leucocytosis*[9] means an increase in the blood of the actual number of any of the several varieties of leucocyte. Such a condition may occur with or without an actual increase in the total number of leucocytes. It is rare, however, that the existence of a leucocytosis, unaccompanied by an increased total number of leucocytes, has any distinctive significance for purposes of clinical diagnosis. In our study of the leucocytes in connection with clinical work, therefore, we are interested principally in those conditions in which we have an actual increase in the total number of leucocytes.

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[1] Introductory lecture to the course in hematology at the Harvard Medical School.

[8] Normal neutrophiles have sometimes basic granules, but it needs a stronger basic stain to color them.

[9] Several writers, as Cabot, restrict the term leucocytosis to the condition in which there is a proportional increase in the number of normal neutrophiles in the blood, but its general application is as given above.

These leucocytoses may be physiological or pathological.

Physiological leucocytoses are slight increases in the number of leucocytes occurring under the influence of physiological conditions, as during digestion, or exercise, or in pregnancy. Such leucocytoses show either an unchanged differential count or an increase of neutrophiles — a neutrophilic leucocytosis. (I have seen digestion leucocytoses with a normal differential count, others with a neutrophile leucocytosis.) The influence of such conditions can be excluded in a given case by proper choice of the time for taking the blood.

The pathological leucocytoses show some variation in the proportion of some normal or abnormal form of leucocyte. They may be classified in accordance with the nature of the leucocyte to the proportional increase of which the actual increase present is principally due.

In a classification formed upon these lines we have the following forms of leucocytosis:

(1) Basophile leucocytosis.

(2) Neutrophile leucocytosis. (*a*) Polymorphonuclear neutrophile leucocytosis; (*b*) round nuclear neutrophile leucocytosis (myelocytosis).

(3) Oxyphile leucocytosis.

In the basophile leucocytosis the actual increase of leucocytes is due principally to a proportionate increase of basophiles.

The marked increase in the total number of leucocytes with a high differential proportion, 50 to 95 per cent., of basophiles is the distinctive feature of the blood of the disease known as lymphatic leukemia. In this condition we may see many morphological forms of basophile in the blood, round nuclear, polymorphonuclear and apparently polynuclear forms, often of all sizes.

A basophile leucocytosis may, however, occur in several other conditions — but except in children it is, leukemia excluded, rarely associated with any marked increase in the total number of leucocytes. A simple proportionate increase of basophiles is found in pernicious anemia, rhachitis, typhoid fever, and many conditions of inanition and anemia. As we have said, where it is not associated with an actual increase in the number of white corpuscles, no great importance, in the present light of medical knowledge, can be attached to it. Children under ten years of age have normally a per cent. of basophiles running between 50 and 80 per cent., the proportion decreasing with the age. In a child it is not rare to get an increased white count with basophile leucocytosis as a secondary feature of many diseased conditions.

In a neutrophile leucocytosis the actual increase may be due to a proportionate increase of either of the neutrophilic cells which occur in blood, the normal polymorphonuclear neutrophile or the neutrophilic myelocyte. Often both types share in the increase.

In the vast majority of neutrophile leucocytoses, such as occur with infectious diseases, with suppuration, etc., the increase is almost entirely in the normal polymorphonuclear type. The number of myelocytes present in these cases rarely exceeds one per cent. In a few cases of pneumonia and diphtheria they have been reported as high as 10 to 15 per cent. But as a rule in these leucocytoses it is evident that the normal neutrophile is the prominent factor in the condition, the myelocyte being but incidental in the picture. This is the type of leucocytosis which is most common. The term leucocytosis is limited by some writers to this type (Cabot).

In one type of neutrophile leucocytosis, however, we meet with a very different picture. Here, although both forms of neutrophile are greatly increased in number, the myelocytes are prominent in the picture. This is the leucocytosis associated with the condition known as myelogenous leukemia. Here we have as a rule a very great increase in the total number of leucocytes, much greater than is the rule in the common neutrophile leucocytosis. And in every field we find myelocytes — so that these cells often form in the differential count from 15 to 50 per cent. of all cells present.

The normal neutrophiles, on the other hand, though their number is actually increased, show a diminished relative number, their per cent. often falling to 30 or 40 per cent.

Although, as you see, it is impossible to draw an absolute line between these two forms of neutrophile leucocytosis on paper, both being mixed leucocytosis, yet it is seldom difficult in practice. Thus we cannot say that all neutrophile leucocytoses with less than five per cent. of myelocytes are simple secondary leucocytosis, while all with over five per cent. are myelogenous leukemia. But one quickly comprehends in a given case whether the myelocyte is the important factor or merely an incident in the condition.

There is a general picture in myelogenous leukemia — leucocytosis with myelocytosis and anemia — which is characteristic. Blasts are often plentiful. Mast cells are commonly seen, as are several abnormal forms of leucocyte other than the myelocyte. In addition, the oxyphile cells, which are relatively and actually decreased in a simple neutrophile leucocytosis, are actually and sometimes relatively increased in myelogenous leukemia.

In an oxyphile leucocytosis (eosinophilia) there is an actual increase in the number of oxyphiles in the blood. In myelogenous leukemia this increase is due in great part to the presence of oxyphilic myelocytes in the blood. In all other conditions of oxyphilic leucocytosis, however, with very rare exceptions, it is the number of normal polymorphonuclear oxyphiles which is increased. This oxyphile leucocytosis is found in a variety of conditions. It is found in asthma, pemphigus and several skin diseases, helminthiasis and as a post-febrile phenomenon. (Scarlet fever is the only acute febrile condition in which it occurs during the febrile stage.) It is found in trichinosis. Here 50 per cent. of oxyphiles have been reported. An actual increase of oxyphiles is said to be always present in myelogenous leukemia. As stated here, we find the oxyphilic myelocyte present increasing our oxyphile count. In these cases of oxyphilic leucocytosis the actual increase is not always accompanied by a relative increase. This is notably the fact in leukemia, where the great increase of neutrophiles is out of all proportion to the increase of oxyphiles.

To determine the existence of this actual increase in a particular form of leucocytosis it may be necessary to carefully count a given number of microscopic fields, as measured by a micrometer eye-piece. For the details of calculation of the number of leucocytes by this method the reader is referred to Ehrlich.[10] It is rarely necessary to resort to this method for purposes of clinical work.

The characteristics of a given form of leucocytosis, the increase in number of leucocytes and the variations in kind and proportion can be recognized with facility by the method of examination of stained specimens. To judge of the presence of an increased number, some practice in estimation of these stained specimens may be necessary. Frequently the increase is so marked that one is aware of it at a glance. Where the increase is slight, however, or less than 100 per cent., that is, where the number of leucocytes per cubic millimetre is less than 15,000 to 20,000, a careful estimation of the slide is necessary. To properly carry on such work we should have practice in the examination of even spreads of normal blood and of blood possessing various degrees of hyperleucocytosis. With such training one can judge of the existence of even a moderate increase, a leucocytosis of 15,000, with fair accuracy, and even approximate the actual count. In estimating this question of a leucocytosis and its extent in doubtful cases it is best to count systematically the number of leucocytes in a given number of microscope fields upon your specimen and compare this record with that made from a specimen of normal blood spread with same thickness, and perhaps with records of specimens of bloods with varying degrees of leucocytosis, which have been obtained by white counts.

By a comparison of the findings on your given specimen with records of the findings of the preparations of blood containing 5,000 or 8,000 or 11,000 leucocytes per cubic millimetre, the normal variation, you can tell whether the number of leucocytes exceeds these limits or not. Also, after practice of the same kind in recording the findings of specimens in which different degrees of leucocythemia are present, you can judge by comparison of your actual number of leucocytes in your case. In cases where the finding leaves you in doubt a white count can always be made. Frequently, however, all that you desire to know is whether an increase exists or not. At all events even with moderate practice your cover-slip examination saves you the trouble of a count in many cases by showing a normal condition; it gives you positive evidence of a hyperleucocytosis in cases where the increase is marked; it gives you at the same time that it reveals the leucocythemia the diagnosis of the kind, whether basophilic leucocytosis, leukemia, etc., which the white count does not do.

It is not the purpose of this lecture to enter into a discussion of the theoretical side of the physiology and pathology of blood. Some consideration, however, of the present views concerning the origin of the leucocytes and of the mechanism of the production of the various leucocytoses may be useful in preparing for a clearer understanding of these leucocytoses in practical work.

Our knowledge concerning the origin of the leucocytosis of blood is very unsatisfactory. In regard to this question there are two principal theories:

The first is that the three common forms of leucocyte, the basophiles, neutrophiles and oxyphiles, represent different stages in the life development of a single cell, which begins its existence in the blood as a basophile (lymphocyte) and there develops to a neutrophile and finally to an oxyphile. It is not necessary by this theory that the development occurs generally in the blood. It may occur in part in certain centres where the basophiles are carried and from which they emerge as neutrophiles. But the single line of origin is maintained. The seat of origin of the original basophile is considered to be in part the lymph glands and in part the bone marrow.

The second theory is that the different forms of leucocyte originate separately in several centres and enter their blood existence as basophiles, neutrophiles and oxyphiles, full-fledged.

According to the promoters of this theory, the basophiles enter the blood principally from the lymph glands, wherever found, in the intestinal membranes, spleen, or lymph channels; in small part from the bone marrow. The neutrophiles originate exclusively from the bone-marrow centres, where they are formed from original basic cells, passing in their development through the stage of the round nuclear neutrophile or myelocyte, and becoming finally ameboid polymorphonuclear cells. The oxyphiles also arise in the bone marrow through a process similar in its features to that of the neutrophile.[11]

By either theory the centres of origin are almost exclusively the bone marrow and lymph glands, the spleen playing a very unimportant part in the manufacture of leucocytes.

The myelocytes originate in the bone marrow.

The mast-cell basophiles originate in the marrow from tissue cells and may also to some extent be formed from connective-tissue cells elsewhere.

There are also two views in regard to the actual process of leucocytosis: The first is that all forms of leucocytosis represent an actual increase in the numbers of leucocytes of one or more particular types of leucocyte in the blood.

The second theory divides the leucocytosis into two classes. In the first class, including such leucocytoses as occur in the leukemias, there is an actual increase in one or several forms of leucocyte in the blood. In the second class, including the common neutrophile leucocytosis of suppuration, infectious diseases, etc. (the leucocytosis of Cabot), there is merely a change in the distribution of the leucocytes already in the blood, great numbers of neutrophiles being attracted from the internal to the peripheral circulation.

According to Ehrlich, the influences which govern the process of leucocytosis are of two distinct kinds, as follow:

The leucocytoses in which the ameboid forms of leucocytes, the polymorphonuclear neutrophiles and oxyphiles, are increased are as a rule brought about by chemotactic influences. The toxin of bacterial infection, etc., attracts these cells forth in greater numbers from their centres of development, perhaps stimulates their development.

The influence which brings about the leucocytosis with an increase of the non-ameboid cells, the basophiles, as that of lymphatic leukemia, is a mechanical one. There is an increased production of these cells in the blood centres, an increased flow of lymph through them, and great numbers are swept into the blood stream.

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[10] Die Anemie, p. 20.

[11] Klein, Cent. f. Inn. Med. 1899, believes that all oxyphiles are developed from other leucocytes by the laying down of granules formed from broken-down hemoglobin.

The leucocytosis of myelogenous leukemia is principally mechanical, but perhaps also due to some extent to a combination of both influences — a mixed leucocytosis in the sense of its causation as well as in the nature of its cells. Some morbid process, in some cases perhaps chemotactic influences, may stimulate excessive development of cellular elements in the bone marrow. With the increased activity, numbers of cells are swept into the blood stream, both myelocytes and ameboid neutrophiles. Chemotatic influences may also here be a factor in attracting the ameboid cells to the blood.

Evidences of special chemotaxis, the attraction of the toxins (?) of special conditions for special forms of leucocyte, are numerous. Thus in cases of lymphatic leukemia where the blood contains 95 per cent. or more of basophiles, in which some suppurative process develops locally, the pus contains neutrophiles as in cases where the blood content is normal. In a case of Duhring's disease reported by Leredde and Perrin the exudate fluid of the vesicles, which had contained oxyphiles only, became infected with bacteria, upon which the oxyphiles of the exudate were replaced by neutrophiles. Neusser, in a case of pemphigus in which the vesicles contained oxyphiles, induced by a vesicant an inflammatory process in several vesicles, whereupon the cell contents of the vesicles changed from oxyphiles to neutrophiles.

This review of the method of the examination of the stained specimen of blood, the description of the appearances of the corpuscular elements of blood in the normal individual or under the influence of various pathological conditions, as studied by this method, indicates clearly, I think, the general lines of usefulness of this method in clinical work.

In the first place, we are able by the application of this method to diagnose the existence of an anemia in a given case; to estimate the severity of that anemia and to determine its type. The appearance of degenerative changes in the red corpuscles, of achromia or poikilocytosis one or both, at once proves to us the presence of an anemia. The extent of these changes, the appearance or non-appearance of blasts, aids us in determining the severity of the condition.

Having thus determined by inspection the existence of an anemia, we next determine its type, whether pernicious anemia or secondary anemia.[12]

The characteristics of the blood of pernicious anemia are (1) a marked poikilocytosis, with a tendency to an average increase of size in the red corpuscles, and (2) the presence of blasts, of which the greater number are megaloblasts. Achromia is rare, though it may occur. If, therefore, in a careful study of several specimens we find such a poikilocytosis, and nucleated reds present in small or large numbers, and in a count of these blasts find more megaloblasts than normoblasts, we diagnose pernicious anemia.

Some, but slight, confirmation of this diagnosis can be obtained by the finding of a normal or increased color index, from a comparative estimation of the hemoglobin and the number of red corpuscles present.

If in our anemia we do not find a megaloblast type of blood, we have a secondary anemia.

This separation of the anemias into two types by the blood findings is of course an artificial separation. All anemias are secondary; but we can pick out from the many forms one which has in its blood finding a distinctive picture which enables us to classify it by itself. Pernicious anemia, as is clear from our descriptions given earlier of the origin of normoblasts and megaloblasts, is merely a term for a condition of anemia in which the blood-forming centres have reverted to a considerable extent or wholly to the embryonic type of formation of the red corpuscles. This condition may be brought about by several causes. One cause, the infection of the body with the parasites, as the bothriocephalus latus, or the ankylostoma duodenale, we know and can remove. And in such cases the marrow resumes its normal condition and the patient recovers. As to all other causes of this condition we are in the dark. We do not understand their nature and cannot remove them. And it is a matter of experience that all cases with a blood finding of this megaloblast type are progressively fatal. Therefore when we find such a blood we pronounce a case, unless it be one of infection with the before-mentioned parasites, as one of pernicious anemia. The distinction is a thoroughly useful one for purposes of diagnosis and prognosis. I have never seen a case with a blood of this type recover ultimately and know of no such case in literature (except the parasitic cases mentioned).

It is of course impossible to point out here just what the cases are in which the knowledge of the presence or absence of an anemia may be of special importance for diagnosis. But they are many, and since the method determining this fact is so simple it should be investigated wherever there is the least occasion for such a step.

The evidence of anemia which one finds in a large per cent. of cases investigated and found anemic consists in the presence of some achromia, with some distortion in form and size. As a rule the number of corpuscles is normal in such cases. The hemoglobin is, however, reduced. And it should be remembered that the existence of a very mild anemia can sometimes be discovered by this hemoglobin estimation when it is not apparent upon the stained specimen. Anemia is not therefore to be ruled out except by a hemoglobin estimation (specific gravity). If it is of any significant extent, however, it will show in the stained specimen.

In the second place, we may by this method discover the existence of a leucocytosis and differentiate its particular type.

Thus by finding a neutrophile leucocytosis with a considerable proportion of myelocytes we may diagnose myelogenous leukemia, a marked basophilic leucocytosis, lymphatic leukemia.

If we find an unmixed neutrophilic leucocytosis we know that we have present one of the conditions with which this leucocytosis is associated and we can rule out all conditions which do not have a leucocytosis. Such a finding may help us in a given case to differentiate pneumonia from phthisis, suppuration or pyemia from malaria, appendicitis from typhoid, scarlet fever from measles, to diagnose the existence of suppuration, hemorrhage or certain acute infectious diseases, to rule out typhoid or malaria.

If we find an oxyphilic leucocytosis we are led to consider some condition thus accompanied, as trichinosis, leukemia.

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[12] It is possible also from our blood finding to divide the secondary anemias into two types. Thus if in an examination of our specimen we find that achromia is the predominant degenerative condition, out of all proportion to the poikilocytosis or other changes, we may diagnose a chloranemia — an anemia in which the color index is very low. This determination can be confirmed if necessary by an estimation of the hemoglobin and a count of red corpuscles, to determine the actual loss in hemoglobin and the color index. But for the simple diagnosis of the condition the slide examination will suffice. This is the type of blood which is found in the disease of young women known as chlorosis.

If our blood slide leads us to suspect an increase in the number of leucocytes, and we wish to estimate the exact number, we can make a white count. Where the number appears normal we gain our knowledge without this trouble.

In the third place, we may discover by this method the presence of blood parasites, the plasmodium malariæ, the filaria sanguinis hominis, the spirillum of relapsing fever. It is customary to look for these parasites in the fresh specimen, where they are seen alive. But it is perfectly possible to discover them in stained specimen.

Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY FRANK A. HIGGINS, M.D., BOSTON.

ON THE RELIEF OF SUFFERING IN LABOR.

W. S. Fothergill,[1] of Manchester, Eng., says that he is convinced that far more than half the actual pain which is suffered in this world is borne by parturient women, and that pain of this kind receives less attention than any other form of suffering. This occurs although relief of pain is one of the first duties of the physician and the thing for which he is usually summoned. The amount of pain during parturition does not depend upon the difficulty and danger of the labor. Many normal confinements are most painful, while, on the other hand, women in great danger often suffer little. Prevention of suffering during labor is accomplished by having the patient in excellent physical condition, giving her plenty of sleep, as much exercise as possible in the open air short of absolute fatigue, ordering nourishing food, only as much as is necessary, frequent baths, avoiding alcoholic drinks and late hours. Constipation must be prevented. Ordinary corsets and garters must be discarded. Walking is the best general exercise. The ordinary ailments occurring during pregnancy should be treated more by rest and less by drugs than under usual circumstances. False labor pains which often occur are more irregular and more continuous than true labor pains. They cause real suffering, and are usually caused by overloading the rectum. Large enemata, two or three, are given for these if necessary, and the patient put into a large hot bath for ten to twenty minutes. Abdominal applications of mustard, sedatives and opium may then be given if necessary.

During the first stage of labor the use of the hot bath and the rectal enema are equally as useful as in the treatment of false pains. His advice is to keep the patient immersed in a hot bath during the greater part of the first stage, with the view of helping the cervix to dilate and of relieving the pains. Friction over the abdomen, application of a binder, change of posture, quinine in five-grain doses, hourly, for three or four doses, are found to strengthen the uterine contractions without increasing the pain. In the first stage, when the patient is becoming nervous and exhausted, and there is little progress made in the dilatation of the cervix, if it is thought best to give the patient rest by sedatives in place of artificial dilatation, he then first administers a little chloroform, just enough to abolish the patient's reflexes, and follows this just before the patient wakes by a hypodermic injection of morphia. She will then sleep on for some time, and will, on awakening, go on with her labor, feeling much better, and frequently a considerable amount of cervical dilatation will be found to have been accomplished unconsciously during her repose. For the nausea and vomiting often quite severe in the first stage, he applies a mustard leaf over the stomach and gives internally a mixture of chloroform, carbolic acid and dilute hydrocyanic acid in water.

During the second stage of labor anesthesia is produced in the usual way, that is, as the pain comes on the anesthetic is administered during a few respirations, without abolishing the reflexes or destroying the consciousness of the patient. This is continued until the birth of the head, when complete anesthesia is desirable. If pains do not come on regularly in the second stage, with one hand on the uterus rub the fundus of the uterus every three minutes until a contraction is brought on. In this way the labor may be quickened. Cramps during labor may be relieved by hard rubbing and massage done by the nurse. Pain in the back during contractions is much relieved if the nurse presses firmly on the sacrum. He protests against a too energetic manner of conducting the third stage of labor, because of pain from prematurely expressing the placenta. In suturing the perineum the pain is caused by the needle passing through skin and mucous membrane; therefore if the muscle and connective tissue are united without passing the needle through the skin or mucosa the operation is almost painless. Otherwise an anesthetic should be given for the operation. He advises chromicized catgut for perineal tears instead of silkworm-gut. After-pains may sometimes be avoided by allowing the patient from the first to turn over onto her hands and knees in passing water, thus allowing the uterus and vagina to empty freely. Severe after-pains require a little opium. Calomel is given as a cathartic, two or three grains, followed by a saline.

LYSOL POISONING FROM POST-PARTUM DOUCHE.[2]

The first fatal case from the use of a dilute solution of lysol is interesting because of the former claims for the non-toxic properties of the drug. The patient, a primipara, was delivered of a seven months' child after a short and normal labor, breech presenting. The patient first had a vaginal douche of four litres of a one-per-cent. solution of lysol, and the temperature rising shortly afterward to 102.2°, the uterus was irrigated with a similar solution. After an injection of one and one-half litres she became restless and comatose, with stertorous breathing and weak and rapid pulse. Irrigation was stopped, and the patient became conscious in a few minutes. The following day the patient was weak and jaundiced, and the urine contained albumin, blood and bile. Four days after there was frequent hematemesis, and the patient was much weaker, dying on the tenth day. The autopsy showed congestion of the dura and medulla, the liver was enlarged, the kidneys showed acute nephritis, and there was thrombosis of the right broad ligament and spermatic vein, and also endo- and para-metritis.

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[1] Medical Brief, January, 1899.

[2] Centralbl. für Gynäk., No. 39, 189

COMPOUND INTRA-UTERINE FRACTURE OF THE FEMUR.

Wilson[3] reports the case of a woman, an epileptic, who bore a child, perfect except for a considerable shortening of the right femur. There was a cicatrix over the anterior aspect of the middle third of the right thigh, there having been evidently *in utero* a compound fracture of the femur, which had united at an obtuse angle. The angular deformity disappeared in the course of a few months and the bone became nearly straight, but with a good deal of shortening. Several theories are advanced for the cause of the fracture. One was that it was the result of an epileptic attack of the mother in the fifth month in which she fell against the stove, but there was no pain following the accident. Another theory was that the fracture was due to a possible blow from the husband, and another that during an epileptic attack the abnormal increase of muscular power of the abdominal muscles would be sufficient to hold the fetus as in a vice with the femur raised up in a position to receive an injury from the spasmodic contractions of the muscles. Writers on the subject of intra-uterine injuries concur in the belief that external violence to the maternal abdomen may fracture the bones of the child without injuring the elastic abdominal walls of the mother.

PUERPERAL SEPSIS TREATED BY CREDÉ'S SILVER OINTMENT.

Jones[4] reports a severe case of puerperal sepsis which developed after an operative labor with a retained placenta, which developed soon after delivery. On the sixth day the patient was curetted under ether, the uterus irrigated with lysol and packed with iodoform gauze without any improvement. From the ninth to the eleventh day the patient grew rapidly worse, having several chills, with temperature ranging from 110° to 105° and pulse very poor, from 120 to 140 per minute. The uterus was very tender, with a foul discharge, and there was profuse diarrhea. There was no peritonitis, but the patient's condition was regarded as desperate at this time. Later on the eleventh day the patient was given an inunction of Credé's ointment, between one and two drachms being rubbed into the inner surface of the thigh, and this was repeated the next morning and again daily for two days. On the morning after the first inunction the temperature had fallen to from 104° to normal, the pulse from 120 to 90 and the diarrhea had ceased. The patient seemed well except that the uterus was enlarged and tender and there was a profuse perspiration. All other forms of treatment were omitted when the inunction was begun, excepting only quinine and stimulants given internally. His observations agree with Credé's, that the general improvement is sudden and complete, resembling more the results from antitoxin in diphtheria than anything else. Credé has used the ointment in a considerable number of cases of various kinds. In local processes the inunctions are made as far as possible from the seat of the disease. In acute and recent cases one inunction every twenty-four to thirty-six hours is generally sufficient for the disinfection of the system, while in chronic cases it is necessary to repeat them morning and night for several days.

(*To be continued.*)

Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

MEETING OF THE SECTION ON SURGERY AND ANATOMY, COLUMBUS, O., JUNE 6, 7 AND 8, 1899.

(Concluded from No. 2, p. 47.)

DR. BROWN, of Illinois, arose at this juncture and said: As a representative of the country doctor, who is a listener probably more than anything else, I want to say that this discussion, like every other surgical method in treating disease, leads one to believe that our magnificent surgical friends, Drs. Ochsner and Murphy, are getting on two sides of the question, when in reality they are not. The story I am reminded of is that of the student who was questioned by the professor concerning the treatment of a certain difficulty, as to what he would do — he would do this, and that, and the other thing. "If you didn't succeed then," asked the professor, "what would you do?" He replied, "I would send for you!" The country doctor cannot send for Dr. Ochsner and Dr. Murphy. I should be compelled to send for both of them, because they have two kinds of treatment. This treatment of cases of peritonitis is simply a matter of the individual case. When Dr. Ochsner goes to the bedside of a patient he will treat that individual case as he finds it, not as you discuss it here before these gentlemen. Dr. Murphy will do exactly the same thing. I know the treatment of Dr. Ochsner of depriving the patient of all nourishment is a good thing, but whether it will do all he says, I am willing to wait to see.

DR. MOORE, of Indianapolis, closed the discussion.

TEMPORARY LIGATION OF THE COMMON CAROTID ARTERY, DURING REMOVAL OF LARGE TUMORS ABOUT THE FACE, WITH REPORT OF A CASE.

This paper was read by DR. JOSEPH J. BRANHAM, of Baltimore. He reported a case of large sarcoma of the face and temporal region; excision; hemorrhage controlled by temporary closures of the common carotid artery by means of a compress and ligature. After operation the patient was up on the fifth day and out of the hospital on the eighth. The most important thing in connection with the case was the manner of controlling the hemorrhage during the operation; the size and position of the growth made excessive hemorrhage inevitable on attempting its removal.

DR. F. C. SCHAEFER, of Chicago, read a paper on

GOITRE: ANATOMY, PATHOLOGY, AND TREATMENT.

He reported seven cases, six of them representing the past year's operative work for goitre, and the other of a large goitre and exophthalmos. He said that there were two remedial agents that loom up so prominently before the profession that it might be of interest to name them: first, the product of the thyroid gland, and second the chemically pure iodine — the former of recent introduction; the latter having been used empirically, locally and internally for many years.

In discussion, DR. WAHRER., of Ft. Madison, Ia., said that he had a patient, a young lady, twenty-four years of age, feeble, with a large unilateral right-sided goitre, as large as a hen's egg. He gave her twenty-five grains of the desiccated thyroid daily, divided into five doses, with the cataphoric application of potassium iodide. The case was treated with marked success. With the continuous use of these remedies, the growth disappeared within five weeks.

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[3] American Journal of Surgery and Gynecology, October, 1898; American Gynecological and Obstetrical Journal, February, 1899.

[4] Obstetrics, February, 1899.

In reply to the discusser's question as to the cause of its rapid disappearance, Dr. Schaefer said he thought it was due to stimulation by absorption.

The paper was further discussed by Dr. Levings, of Milwaukee.

Dr. R. C. Dugan, of Eyota, Minn., read a paper on

EMERGENCY SURGERY WITH ESPECIAL REFERENCE TO WORK IN THE HOMES OF THE POOR.

Discussed by Dr. Brown, Ill.; Dr. Lawless, Toledo; Dr. Rosenthal, Mo.

Dr. J. B. Murphy, of Chicago, read a paper on

INTESTINAL FISTULÆ.

It was very important to the surgeon, it was annoying, it taxed his ingenuity; as a rule it is the result of the surgeon's work. Bone is the most common cause of fistulæ; next is mural strangulation. He divided fistulæ as follows: *Intentional.* — Artificial anus (permanent), artificial anus (temporary), laceration of intestine, impairment of wall, division with scalpel or scissors, forceps, ligature, drainage-tube and packing, injuries in parturition, curettement through perforation of uterus. *Accidental.* — Criminal abortion, vaginal intestinal perforations, failure of union after enterectomy or enterorrhaphy.

In discussion, Dr. L. Crile, of Cleveland, asked what disposition, if any, he undertakes to make of fistula due to tuberculosis of the bowel.

Dr. Murphy replied, resection of the bowel, and recited a case reported by Dr. Körte, in which he operated something like eight times, removing a large portion of the ileum, all of the ascending and a portion of the transverse colon, and finally made an end-to-end anastomosis so as to sidetrack the intestine involved, removing it, and was successful in curing his patient.

Dr. D. L. Fairchild, of Clinton, Ia., read a paper on

SURGICAL TREATMENT OF ABSCESS OF THE LUNG.

He said pneumonia is now generally recognized to be an infectious inflammation of the lungs, due, in the majority of cases, to the influence of the diplococcus pneumonia of Fränkel. The disease pursues generally a well-defined course, marked by certain pathologic changes; once in about 50 cases it is said that the pathologic changes result in the formation of abscess. Among the complications may be found consolidation of the lung, hydrothorax, empyema or abscess. An abscess of the lung is a much more dangerous condition than an empyema, on account of the difficulty of surgical drainage. He reported two cases, one in a man weighing 250 pounds, who was attacked with croupous pneumonia two months previously. After operation patient made a rapid and uninterrupted recovery. The other was a case of a young man who had passed through a rather severe attack of pneumonia. Result, uninterrupted and rapid recovery. He recommended puncture of the suspected area by means of an aspirating needle; if pus is found it should be evacuated by free incision, resecting a rib, if necessary, to obtain sufficient drainage. He did not approve of irrigation, owing to the resulting distressing irritation of the lung.

Discussed by Dr. Levings, of Milwaukee, who advised the use of a short exploratory needle.

Dr. Murphy, of Chicago, spoke of the case of operating for abscess of the lung with pleural adhesions.

SOME OF THE RARE FORMS OF HERNIA AND THEIR RADICAL TREATMENT.

was the title of a paper by Dr. R. Harvey Reed, of Rock Spring, Wyo., who spoke of gastric, umbilical, ventral, and labial hernia. He desired to show (1) that all cicatricial tissue must be completely removed; (2) that the most perfect apposition of the separated parts must be secured; (3) that strong, flexible, thoroughly sterilized and absorbable animal tissue should be used for subcutaneous sutures, and that non-absorbable, thoroughly sterilized suture should be used for approximating the integument; (4) that great care should be taken to avoid the possibility of necrosis by shutting off the normal blood supply, and thus not only preventing the absorption of the animal structure, but eventually causing the breaking down of the adjacent structures, thus deprived of their normal blood supply, which is bound to complicate the case. After having tried different kinds of animal tissues, prepared by different methods for subcutaneous suture, he has obtained the best results from pyoktanine catgut, which he has prepared by his chief nurse under his personal direction. For over two years he has purchased his catgut in the raw form from a firm in New York, which experience has taught him furnished most excellent and reliable form of catgut, prepared first by immersion in ether for not less than four days, then wound on glass spools and immersed in solution of 1 to 1,000 of pyoktanine in absolute alcohol, after which the jar containing the alcohol solution of pyoktanine with the catgut is sterilized for one hour under pressure. Objection to other methods of sterilization is the overhardening of the animal tissues.

Dr. McRae, of Atlanta, reported a case of

DIAPHRAGMATIC HERNIA

which he operated, the result of a stab, penetrating the chest and diaphragm; the other was that of a negro woman who gave the history of having severe attacks of constipation for several years, resulting in obstruction.

Dr. Marcy, of Boston, spoke of the

INFUNDIBULAR PROCESS IN THE NORMAL DEVELOPMENT OF THE MALE SUBJECT IN HERNIA.

He reviewed diagrammatically the anatomy of hernia, with especial reference to the cord. He laid claim to the originality of the Bassini operation. Bassini does not claim to have made a single operation until 1884, while Dr. Marcy claims to have made contributions to this technic as far back as 1870. Speaking of the operation he said: "It makes no matter whose name it has, but I claim that the name be given to the nation whence the operation had its origin!" The material is non-essential, only it must be aseptic and absorbable, and when you have gained these two points you ought to have perfect union.

Dr. Freeman, of Denver, mentioned a case of hernia of the diaphragm, produced by a gunshot wound, seemingly only to penetrate the skin, but examination revealed a large opening in the chest-wall, large enough to admit fist. Patient died of internal hemorrhage.

Dr. Kelly, of Baltimore, urged the propriety of considering American claims in the matter of priority of originality in technic. He said: I use the non-absorbable sutures. When it comes to transplantation of the cord in hernia, getting rid of the weak point in the wall, I want all these gentlemen here to speak not of the Bassini operation, but of the Halsted operation. If you will take a little bit of trouble and consult the records, you will see that Dr. Halsted's publication antedated that of Bassini.

Dr. Lord, of Omaha, reported a case of

UMBILICAL HERNIA

in a patient weighing three hundred pounds, who had had repeated pregnancies, the last of which resulted in twins. There were two large hernias, one the size of a Bartlett pear, and the other the size of an ordinary hen's egg, between the umbilicus and the ensiform cartilage. I do not recall ever seeing in my researches reference to an umbilical hernia of this kind.

Dr. Ballard, of Louisville, thought that the curved incision offered some points of advantage.

Dr. Warner, of Columbus, urged the early operation of hernia.

Dr. Manley, of New York, thought the keynote to the situation was that the operation for the so-called cure of reducible hernia ought to be the simplest.

Dr. Milliken, of Texas, thought that the silver-wire suture solved the problem.

Dr. Moore, of Minneapolis, wished to bear testimony to the fact that multiple ventral hernias occurred above the umbilicus.

Dr. Ochsner discounted the idea of priority of claims to operations, and thought that the important point was a radical operation, and "not to fool away any time about this man and that man."

Dr. Ruth, of Keokuk, said that despite all care he had taken with absorbable and non-absorbable material, he had a great deal of trouble occasionally with infection.

Dr. Murphy, of Chicago, reported a

METHOD OF CLOSING AN OPENING IN DIAPHRAGMATIC HERNIA IN THE CASE OF A BULLET WOUND.

Dr. Harris, of Chicago, said that all methods which transplanted the chord were bad; he also pointed out the value of the silver-wire longitudinal suture and said that it was removable; that it secured the most perfect coaptation and afforded the best union.

Dr. Ramon Guiteras, of New York, presented a paper entitled

SOME OBSERVATIONS ON THE BOTTINI OPERATION FOR PROSTATIC HYPERTROPHY.

He reviewed the etiology, normal and pathological anatomy, macroscopic and microscopic conditions, symptomatology, prognosis and treatment. He believed in trying palliative measures first, that resection, castration, etc., had all had their day and their advocates. He then gave a description of the Bottini instrument and operative technic. Bottini operated on 200 cases, only 23 of which received any value; no deaths. Meyer, he said, had 12 cases, 4 of which were fatal; Friedenberg had 32; Stein, 12, all improved; Simon, 8, 2 fatal; Hank, 5, fair result; Morton, the same; Clark, 4 cases, fair result; Guiteras, 20 cases, 2 deaths.

In discussion, Dr. Freeman, of Chicago, reported 7 cases with no deaths; 6 had large, rather firm, prostates, about the size of a lemon. In the seventh case, he said, the prostate could not be felt through the rectum, the middle lobe being large and valvular. All had been very much benefited by the operation.

Dr. Robbins, of Michigan, reported 4 cases, and said that while he thought it was one of the valuable operations of the future, at the same time he believed that it was a dangerous operation, unless the operator was extremely careful.

Dr. Bouffleur, of Chicago, said that he saw a man's entire urethra split by the Bottini operation, and this in the hands of a celebrated surgeon, the blade having turned to the side. He further said: "If the cauterization of the prostate is so valuable, why do it in the dark? Why not make a suprapubic incision, take the cautery and burn the prostate through the bladder?"

In closing the discussion, Dr. Guiteras said that the bending of the blade was a very important point, and that it usually occurs when the amount of electric force is off during an operation. Before every Bottini operation, the battery should be recharged. As a general thing, there is enough force in the battery for three operations; sometimes only one.

Dr. W. M. Beach, of Pittsburg, read a paper on

SOME COMPLICATIONS RESULTING FROM RECTAL OPERATIONS.

He named as some of the complications following operations or injuries upon the fixed rectum, first, incontinence; second, stricture; third, elongation of the anal rectum; fourth, ulceration and hemorrhage; fifth, loss of rectal sense-organs; sixth, suppuration and phlebitis. The direct antithesis of incontinence is stricture.

In discussion, Dr. Pennington, of Chicago, thought that, while a good many bad results follow operations on the rectum because of the operation itself, that is, operation for hemorrhoids, etc., I think a great many of these evil results, such as stricture, ulceration, hemorrhage, etc., are due to inefficient after-treatment as much as to the operation itself.

Dr. Martin, of Cleveland, thought that the title of the paper ought to have been, "Bad results of bad surgery."

Dr. A. H. Ferguson, of Chicago, read a paper on

A TYPICAL OPERATION FOR THE RADICAL CURE OF OBLIQUE INGUINAL HERNIA AND ATYPICAL ONES.

He said, in part: A typical operation for the radical cure of oblique inguinal hernia is one that places all the structures involved in the same relationship to one another as they are present in a normal person. The operations that have been hitherto produced to cure inguinal hernia fall far short of being typical. A careful analysis of failures, a painstaking research for hidden truths and a discernment for contestable premises are ever before the surgeon who hopes for more success, new discoveries and lasting operative procedures. Of all the operations that I have performed, it is the simplest and easiest to execute. There is good scientific reason furnished for every step in the operation. The results are excellent so far. The last eighteen months I have performed my typical operation sixty-four times, counting each case of double hernia as two operations. There have been no relapses so far. Atypical operations for the radical cure of inguinal hernia are all those which do not in the completed operation leave all the structures as they are present in a normal inguinal region.

The following papers were read by title:

"Excision of Rectum for Malignant Disease, without Sacral Resection," by **Dr. Nicholas Senn**, of Chicago.

"Colostomy," by **Dr. J. A. Wyeth**, of New York.

"Contribution to the Subject of Operative Interference in Perforating Typoid Ulcer," by **Dr. C. A. Powers**, of Denver.

"Influence of Age, Sex and Race in Surgical diseases," by **Dr. W. L. Rodman**, of Philadelphia.

"Hernia of the Diaphragm and Report of Cases," by **Dr. Floyd M. McRae**, of Atlanta, Ga.

FOURTH DAY.

Dr. S. L. McCurdy, of Pittsburg, read a paper entitled

DETAIL IN CLEFT-PALATE OPERATIONS.

He said that in all operations upon the mouth or face the patient should be placed in the Murphy position, the operator sitting above the head, and that Fillebrown's method of producing anesthesia is of advantage in all operations on the face and mouth. He held that in every operation upon congenital deformities the preservation of material should be the first consideration, and that in Fillebrown's operation this conservation of tissue was observed. He then described an instrument called a "steel hoe," with a cutting edge on the tip and on both sides, which was devised for the purpose of cutting through the soft tissues well up around the margin of the cleft, and far enough, too, so that when the flaps are hoed from the bone they reach across the chasm. With the cutting sides it is drawn forward to the anterior angle and backward along the margin of the soft palate, as well as the hard, the uvula being readily split to its tip. A self-retaining mouth-gag was likewise described, which can be accurately adjusted to the side of the head without tilting the mouth-gag from the teeth; it is held in position by a head-band. A self-retaining tongue-depressor is attached to the gag; the tongue can be thrown up to any desired position by adjusting a lever which is attached to the gag apparatus. He then showed an improved staphylorrhaphy needle.

Dr. Vance, of Louisville, said that he endorsed the use of this needle, and that he first knew of it as having been used by Dr. Koons, of Kentucky, since 1882. He believed that it was the best staphylorrhaphy needle in use. He said it was a question whether the dentist could not perform these operations better when the cleft ran back to the hard palate.

Dr. Ochsner said that he had performed the Wolf operation on over thirty patients with success, and that the secret of success in these hard-palate operations consisted in making the flaps so loose that it required no tension to hold them in place.

Dr. Bullitt, of Louisville, **Dr. Ricketts**, of Cincinnati, and **Dr. McCurdy** closed the discussion.

THE TREATMENT OF BURNS.

Dr. M. F. Lee, of Columbus, read this paper by title.

Dr. Liston H. Montgomery, of Chicago, followed with a consideration of

TRAUMATIC SHOCK.

He said that the causes and results of traumatic or surgical shock depend upon the amount of constitutional disturbance that has been produced by the solution of continuity. Among the immediate and remote causes that produce shock would be, for instance, the falling of a heavy weight. A blow upon the head or over the spine, be this ever so slight, and whether the injury inflicted is a contusion, or when a wound has been produced, has been immediately followed by concussion or shock, as the surgeon is disposed to diagnose it. One of the very first symptoms of shock is the subnormal condition of the bodily temperature of the patient. In a word, anticipate shock by the administration of morphine, chloral hydrate, or, if the indications require it, give brandy, whiskey, aromatic spirits of ammonia, coffee, or tincture of digitalis, or the hypodermic use of strychnia, if need be; inhalation of amyl nitrite, and if there is hemorrhage and it is under control, have at hand a saline solution of tepid sterilized water. Keep the head lowered and the body in a recumbent position.

Dr. Warner thought that the loss of blood in this matter of shock was an important point. Especially was this true in children.

Dr. Fairchild, of Iowa, thought that the question of shock was a very misleading one. He had seen cases of profound injury in which the element of shock was not very great at the time, and again he had seen patients that were not injured severely suffering from most profound shock.

Dr. Jelks, of Memphis, found that the extreme pallor might be relieved and shock ameliorated by a lowering of the head.

Dr. Nelson, of Chicago, was of the opinion that anything that affected the sympathetic system would produce shock.

Dr. Bishop, of Pennsylvania, held the idea that one of the things to do was to "cure the doctor of shock," that the best way to get reaction was to "quiet the doctor." He thought that there should be differentiation between shock and hysteria.

Dr. Jonas, of Omaha, said it was necessary to clearly define shock from injury; that shock was due to overstimulation; that there was the same amount of blood in the system after the shock, and that the introduction of the saline solutions overfilled the vascular system, producing an amount of work that the heart was incapable of performing, and that many patients were thus killed, instead of shocked to death.

Dr. Earle, of Maryland, **Dr. Means**, of Columbus, and **Dr. Warner** closed the discussion.

WOULD SURGERY SUFFER IF IODOFORM WERE ABOLISHED?

Dr. E. C. Brush, of Zanesville, O., read this paper by title.

Dr. William Jepson, of Sioux City, Ia., read a paper on

AUTOMATIC DRAINAGE.

It was discussed by **Dr. Bullitt**, of Louisville, **Dr. Warren**, of Columbus, **Dr. Fairchild**, of Iowa, **Dr. Dugan** and **Dr. Eggleston**.

Dr. Thomas C. Martin, of Cleveland, read a paper entitled

PHANTOM, SEMILUNAR AND ANNULAR STRICTURES OF THE RECTUM; THEIR DIAGNOSIS AND RADICAL TREATMENT UNDER DIRECT INSPECTION.

He said, in part: That the rectal valve constitutes the most hypsometric of the topographic features of the movable abdominal rectum is conclusively proven by the photographic pictures. The specimens from which the photographs were taken were prepared by a method consisting in fixing the cadaver in the knee-chest posture, and pouring melted paraffine into the atmospherically inflated rectum; when the wax had sufficiently hardened, the gut was carefully removed. There are three forms of valvular obstruction: (1) Anatomic coaptation of the valves may establish an abnormal physiologic resistance to the descent of the feces; (2) congenital hyperplasia of the rectal valve is a condition classically described as diaphragmatic stricture or membraneous septum in the abdominal rectum; (3) hypertrophy of the rectal valve constitutes the classic annular stricture of the abdominal rectum. Obstipation was an important symptom. He differentiated between constipation and obstipation.

DR. EARLE, of Maryland, said that if any person doubted the existence of the valves, the same could be verified by placing the patient in knee-chest position and using a Sims speculum.

DR. BURNHAM, of Baltimore, thought that while these valves did exist, their presence was not quite as distinct as the essayist would want to have them.

The paper was further discussed by DRS. BEECH, PENNINGTON, JELKS and MARTIN.

DR. THOMAS YOUMANS, of Columbus, read a paper on

ACUTE GONORRHEA; ITS PREVENTION AND CURE.

DR. THOMAS'S (Pittsburg) method of treating gonorrhea was twice a day at first, then once a day, etc. A temperature of 140° will not kill the gonococcus. It has been said a case in which typhoid existed and at the same time gonorrhea existed, the typhoid fever would kill the gonococcus. I have a patient under my care at the present time who had typhoid fever, but it did not kill the gonococcus.

DR. CAMPBELL, of Chicago, pointedly remarked in discussion: With regard to the prevention of gonorrhea, I would say that the parents should consider it more their duty in the case of marriage to investigate the condition of the prospective groom, and in that way lessen very materially the work of the gynecologist.

DR. PATTERSON, of Philadelphia, said that the one known method of prevention of gonorrhea is "virtue"; that 85 per cent. of the prostitutes of Philadelphia suffered with some form of venereal disease, the greater proportion having gonorrhea. He also stated that in the University of Pennsylvania, department of genito-urinary diseases, they were able to state absolutely when a case was cured and when it was safe for a man and woman to marry.

DR. FERD. C. VALENTINE, of New York, was the next discusser. He said, in part: The doctor began by saying that the majority of males become gonorrheic. He does not go so far as Spencer Wells, who says that every man had a "clap" sometime or other in his life: I believe that only 90 per cent. of men have it and I protest on behalf of man against the slander! From 10 to 30 per cent. of females become gonorrheic after marriage. I believe that to be an underestimate, because in the statistics of 1894 (Berlin), it was shown that of women dead of disease of the reproductive apparatus, 80 per cent. died of gonorrheal infection. How many of these succumbed because of gonorrhea conveyed by husbands who considered themselves cured it is impossible to say, because the majority of men, I think, would not marry until they felt that the woman of their choice would not become diseased through them. Eighty per cent. of the children that went blind in Germany lost their sight from gonorrheal ophthalmia. He pointed out many diseases resultant from gonorrheal infection. He used the 25 per cent. of the stock solution of potassium iodide and kept fresh bottles on hand.

DR. OCHSNER and DR. JELKS closed the discussion.

Papers by DR. B. B. DAVIS, of Omaha, "A Case of Brain Cyst," and DR. J. H. LETCHER, Henderson, Ky., "Mammary Cancer," were read by title.

DR. F. C. VALENTINE, of New York, read a paper entitled

OUTLINES OF URETHROSCOPIC DIAGNOSIS, WITH SPECIAL REFERENCE TO CHRONIC GONORRHEA.

The doctor held that the chief essential in the treatment of chronic gonorrhea is manifestly, as in other diseases, to ascertain its cause. An instrument, he said, was necessary to show the practitioner where the disease lies, and its character; that such an instrument must be simple in construction, easy of use, not prone to get out of order, and always reliable. He believed that the study of unrethroscopy on the cadaver was absolutely useless, circulation having ceased, the natural color and consistency of the mucosa gone, offering no means for comparison. He said that the most frequent tumors of the urethra were papillomas and fibrous polypuses; that carcinoma of the urethra was very rare; that Oberländer was first to make an early diagnosis of carcinoma by means of the urethroscope in 1893. His closing thoughts were, that no chronic disease of the urethra can be diagnosed nor intelligently treated without the urethroscope; the technic of urethroscopy is not difficult; that a urethroscope must be easily manageable, of a prime cost, and of a price of maintenance within the means of the average general practitioner. All these requirements, I think, are attained in the little instrument I am demonstrating.

DR. TUCKERMAN, of Cleveland, said that he would like to show an extension of urethroscopy, presenting a photograph and his device. He had for the purpose of vesical examination made a slight modification in the shape of the obturator, making the point at the side instead of in the middle, and by that means, with a little care, the point enters with ease through the triangular ligament into the membranous urethra, and slides easily over the prostate.

The following papers were read by title:

"Use of Distilled Water and Boiling for the Sterilization of Surgical Instruments," by DR. W. K. ROGERS, of Columbus.

"Use of Dental Engine in Surgery," by DR. W. G. A. BONWILL, of Philadelphia.

"The Division Field Hospital," by DR. S. K. CRAWFORD, of Chicago.

"Intestinal Anastomosis without Foreign Body by Means of a Natural Bobbin," by DR. F. B. TURCK, of Chicago.

DR. J. B. EAGLESON, of Seattle, read a paper on

CASE OF PANCREATIC CYST; OPERATION; RECOVERY.

The patient in question was a native of Norway, age 34. In May, 1897, she had a sudden attack of severe pain in the left side in the region of the kidney, accompanied by extreme nausea and vomiting. The attack lasted five weeks. A second attack occurred in July. During the following winter she suffered recurrent attacks. At the operation the usual lumbar incision was made for exploring the kidney, which was found healthy; the tumor could be located as extending from a fixed point just above the kidney downwards and forwards into the abdominal cavity. The tumor when extricated was found to be oval in shape and about twelve E. M. in diameter; it was smooth, dense and hard, resembling a solid tumor on palpation. An opening was torn through the gastrocolic omentum and the tumor wall exposed, which had a dark bluish color resembling a cyst. It was now diagnosed as a pancreatic cyst and I decided upon immediate incision and drainage. An incision one inch long was now made into the cyst and its contents drained out by turning the patient on her left side. The contents were fluid, dark greenish-yellow, quite turbid, with a sourish odor. At the end of six months her health is good and she is able to do her own housework.

Dr. R. M. Stone, of Omaha, Nebraska, read a paper entitled

REPORT ON THE SCHLEICH SOLUTION.

He said, in part: Schleich suggested various formulas containing chloroform, ether, and benzin in different proportions. His No. 3 formula was composed of: Chloroform, 30 cubic centimetres; ether, 80 centimetres; benzin, 15 centimetres. This was adapted to major operations and had a boiling-point of 107.4°. Through the courtesy of Dr. C. C. Allison, surgeon-in-chief of the Presbyterian Hospital in Omaha, I have had the chance to give the Schleich solution 200 times. I have now used it in 250 cases all told. The longer I use it the better I am satisfied with its superiority.

In discussion, Dr. Murphy said that he had had Dr. Stone use the Schleich solution in Chicago for him with very excellent results, and that he was well pleased with it.

Dr. Jepson thought that from statistics of deaths from ether and chloroform, and the number of cases that have been given the Schleich solution in this country, he did not think there were yet sufficient data to prove which was the safest anesthetic.

The above being the concluding paper in the Section of Surgery and Anatomy, Dr. Murphy, of Chicago, proposed resolutions of thanks to the Chairman, Dr. Mayo, for the scientific and business-like manner in which he handled the sessions. The proposition of Dr. Murphy was concurred in by the members of the Section rising simultaneously.

Dr. Mayo said: "I thank you for this appreciation of my efforts," and then modestly referred to the Secretary, Dr. Harris, who, he said, assisted him greatly in rendering the results obtained.

A motion to adjourn was then made and ordered.

A $250,000 Fee. — Even the surgeons will soon have to envy the bacteriologist. Koch is said to have asked of the Cape Colony Government the modest fee of $250,000 for his work on the Rinderpest. — *Philadelphia Medical Journal.*

Recent Literature.

The Surgery of the Head and Neck. By Levi Cooper Lane, A.M., M.D. (Berl.), M.R.C.S. (Eng.) LL.D., Professor of Surgery in Cooper Medical College, San Francisco. Second edition. Philadelphia: P. Blakiston, Son & Co. 1898.

Professor Lane, in his book on "Surgery of the Head and Neck," dedicates his book to futurity, and has only the limited hope that a few years of existence will be granted to its pages. We, however, think better of the work than the author. It is written essentially from a personal standpoint and takes up with commendable thoroughness the various affections of the head and neck. It is written in a pleasing style, and is evidently the result of the author's ripe experience, and works that are founded upon experience are not entirely ephemeral. The cuts in the book are curiously antiquated, and, we regret, do not add to the value of the book. We shall look with interest for the appearance of a work from the author on other portions of the body. The book is very readable.

Chemistry: General, Medical and Pharmaceutical, including The Chemistry of the U. S. Pharmacopœia. By John Attfield, F.R.S., for thirty-four years Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, etc. Sixteenth edition. Philadelphia and New York: Lea Brothers & Co. 1899.

So rapid and extensive is the advance in the science and art of chemistry that this sixteenth edition of Professor Attfield's work, in spite of the fact that two former editions have appeared within the last decade, contains upon almost every page some important additions to the text.

These changes bring up to date the book which of all books upon the subject of chemistry is probably the best adapted for the teaching of the science of chemistry in its applications in medicine and pharmacy. Combined with a thoroughly comprehensive treatment of the subject and a store of general and special information upon chemistry, the book has a teaching quality which is most remarkable.

The system, and the various methods enlisted by Professor Attfield to teach this, from the point of view of the teacher, most difficult subject, may well serve as an example to all writers upon scientific subjects.

The Treatment of Disease by Physical Methods. By Thomas Stretch Dowse, M. D. (Abd.). F.R.C.P. (Edin.), formerly Physician Superintendent Central London Sick Asylum; President North London Medical Society; Physician to the North London Hospital for Consumption and Diseases of the Chest; to the Northwest London Hospital and to the West End Hospital for Epilepsy and Diseases of the Nervous System, etc. Pp. 400. New York: E. B. Treat & Co. 1899.

This work is in reality a later edition under a new title of the writer's lectures on massage and electricity in the treatment of disease. The general style of the book remains the same, but the subject matter has been brought up to date. In addition to chapters on the principles of massage and its method of application are discussions on the special massage of different portions of the body. Particular attention is given to massage in nervous exhaustion, sleeplessness, pain, melancholia and allied states. One lecture is devoted to the Weir-Mitchell treatment and another to the Manheim treatment in diseases of the heart. A chapter on Electro-physics and another on Electro-therapeutics complete the volume. The book contains much matter foreign to its title. This is notably the case in the chapter on Massage in Nervous Exhaustion, Neurasthenia and Hysteria. This is a decided disadvantage, in our opinion, from the standpoint of the general practitioner. He opens the book to learn the author's ideas on massage in these various diseases and nothing more. Few doctors have time to read books of 400 pages, of whatever character, and especially is this the case in so narrow a field of medicine as massage and electricity. It is only justice to add that for students of massage these digressions into general medicine will prove very profitable, because of the attractive manner in which they are presented. The broad training of the writer, as his various hospital appointments testify, is made evident from the beginning to the end of the volume.

The Newer Remedies. A Reference Manual for Physicians, Pharmacists and Students. Third edition. By Virgil Coblentz, A.M., Phar. M., Ph.D., F.C.S., etc., Professor of Chemistry and Physics in the New York College of Pharmacy. Pp. 150, octavo. Philadelphia: P. Blakiston, Son & Co. 1899.

This manual contains an alphabetical arrangement of the newer remedies, giving in concise form their synonyms, sources, methods of preparation, tests, solubilities, incompatibles, medicinal properties and doses. In the addenda, special consideration is devoted to organo-therapeutic agents and the indifferent compounds of iron. The book is exactly what it pretends to be, is eminently satisfactory and its third edition is sure to meet with favor by physicians and druggists.

The Crystalline Lens System. Its Embryology, Anatomy, Physiological Chemistry, Physiology, Pathology, Diseases, Treatment, Operations and After-Changes, with a Consideration of Aphakia. By Louis Stricker, M.D., Cincinnati, O. Pp. 600. 1899.

Dr. Stricker intended originally merely to make a translation of Otto Becker's classical monograph, "Pathologie und Therapie des Linsen Systems," which appeared as a part of the Graefe-Saemisch Handbuch in 1877 and his "Zur Anatomie des gesunden und kranken Linse," which he published in 1884. Although the improved laboratory methods which have come into more general use during the last decade have greatly increased our knowledge in other directions, it is unfortunate that in this particular department of ophthalmology a similar gratifying advance has not been noticed; much, however, has been done and consequently the compiler has seen fit to so enlarge the scope of his work as to include as far as possible what new facts have become known and what new theories have been promulgated in the various countries. The title that has been selected, comprehensive as it is, but inadequately describes the immense amount of subject matter contained within the covers and is likewise inadequate to a just conception of the amount of labor necessarily expended in the preparation of a compilation so extensive, the sources of information being often so remote. Numerous footnotes and a bibliography in chronological order from 1532 to 1895, comprising 3,433 references, help to make the book of inestimable value for purposes of reference. It is a matter of exceeding regret that such excellent results attained at the expenditure of so much time and energy should be so marred by careless proof-reading; the errors in spelling, numerous as they are, may easily be eliminated from a future edition, which it is to be hoped will be printed upon better paper and be submitted as a more satisfying example of the art of book-binding.

Clinical Lectures on Mental Diseases. By F. S. Clouston, M.D. (Edin.), F.R.C.P.E., etc. Fifth edition, pp. 727. Philadelphia and New York: Lea Brothers & Co. 1898.

This rarity — an entertaining scientific work — has reached its fifth edition in less than fifteen years, an unusual if not unprecendented achievement for a book on mental disease. Its well-deserved success is in large measure due to the author's vivid and faithful delineation of the disorder in all its varieties. His descriptions and cases make a masterly collection of clinical pictures, unequalled in modern psychiatric literature. His now well-known studies of the influence of development upon the sane and insane mind, which have materially advanced our knowledge of the pathology of insanity, still further enhance the value of this volume.

The present edition is mostly a reprint of the last, the only additions relating to the use of thyroid extract in certain cases of insanity, and to some original pathological work done at the Edinburgh Royal Asylum and the Scotland Asylum's pathological laboratory.

Luke; the Beloved Physician. By J. C. Culbertson, M.D., Cincinnati, O. 1899.

It is worth while for the physician occasionally to turn aside from the ultra-professional literature which forms the bulk of physicians' libraries, and to contemplate the lives of those men of early times of whom brief fragmentary sketches constitute our best information.

The beloved physician, whose life forms the subject of this excellent character sketch by Dr. Culbertson, is best known to us by his writings. Of his active skill as a physician or surgeon we have little or no information. As a keen observer and reporter of the exciting events which he witnessed in the first century of the Christian era he had no equal. His deep professional interest is shown by the minuteness and care with which he portrayed the infirmities and the diseases to which the people of those times were subject.

Regulation of Massage in Hungary. — The Hungarian Minister of the Interior has issued stringent regulations for the control of massage establishments, etc. Massage treatment in diseases of the sexual and abdominal organs and of the eye may be carried out only by qualified medical men. In all other cases the operator must have the advice and supervision of a qualified medical man. Transgressions of these rules is a misdemeanor punishable, if free from aggravating circumstances, by imprisonment up to fifteen days and a fine not exceeding 100 gulden. — *Medical Magazine.*

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TETANUS AND FOURTH OF JULY.

THE fact that six deaths have occurred in Boston and twenty-four in New York and vicinity from tetanus, the injury in almost every case being due to toy-pistol wounds received on the Fourth of July, calls attention anew to the barbarous character of the American method of displaying patriotism on that day.

Fireworks have to be exploded in the middle of the dusty road, or in a vacant lot with a dirt surface, in order to avoid littering lawns or setting fire to houses, and the result is that the irresponsible small boy is turned loose with his fellows to spend the day in a grand carnival of dirt, gunpowder, racket and patriotism. By the time he has gotten his hands into a condition of grime superlative even for the small boy, he bethinks himself of the toy pistol which his father has provided him with to cap the climax of the celebration, and in his haste and excitement, handling it with his finger on the trigger and his left palm over the nozzle, fires the blank charge of wadding into the bacillus-laden dirt which smears his palm, and carries it through the skin and palmar fascia in among the tendons and nerves. A bullet would be a safer charge for the cartridge, for it would go clear through. The boy then runs to his mother, who finds that the wound looks trivial (the little puncture in the tense palmar fascia gives no idea of the amount of dirt, wadding and havoc inside), washes the hand, ties a rag around it, and the boy goes on with his play.

The mother may, as, alas, has not infrequently happened, take the child to a doctor, who not remembering the anaërobic nature of the bacillus, and the fibrous strength of the palmar fascia, so well adapted to cover and hide the dirt and wadding, makes a superficial examination, perhaps probes the wound, puts in an antiseptic dressing and sends the child home. The wound apparently does well, there is no swelling or redness, or at most a slight seropurulent discharge.

In four or five days the symptoms of lockjaw set in, the boy is hurried to a hospital, where all too late a quart or so of antitoxin is injected into his vein or his brain, the wound is thoroughly opened up, the wadding and *débris* removed, but the poison has already locked the nervous system in its iron grip, the poor boy's back stiffens and arches, he cries with pain as the convulsions become more frequent, and dies within a few hours of his admission to the hospital.

Now the pity of it is that this whole sad story need never have taken place were it not for the manifestations of carelessness and ignorance at several points. In the first place, even if the Fourth of July must be celebrated, let the parents, however willing to trust their precious offspring to the tender mercies of the dynamite cracker and the toy cannon, remember that the toy pistol with the so-called blank cartridge is more dangerous to their boy himself, at least, if not to the bystanders, than a .32 Colt revolver loaded with ball cartridge, and let them refrain from including it among the dangers to which their liberality and patriotism subject him.

In the second place, let parents and physicians remember that punctured wounds through the palmar fascia must be widely opened and kept open, and cleaned and kept clean. Common atmospheric air will poison what few bacilli the doctor cannot wash away. In other words, tetanus is an eminently preventable disease, and it is some one's fault, either from carelessness or ignorance, when a boy dies of it.

When loose talk is indulged in about an epidemic of tetanus as a result of the number of cases that have occurred since the Fourth of July, it is well to remember that the tetanus bacillus is ommipresent in street and stable dirt and garden mould, and whenever the bacillus is presented, by means of Fourth of July and the toy pistol, with the most favorable conditions for growth and multiplication, he is a fool if he doesn't grow and multiply. If every day were Fourth of July we might expect an epidemic of tetanus, but as that is fortunately not the case there is no reason to fear it.

In regard to the results of the serum treatment, the experience of the last few weeks in Boston has agreed with that of previous years in showing that in the acute cases, namely, those in which the symptoms appeared within ten days of the infection, treatment by antitoxin or any other method was useless. In Boston all the cases occurred within six days and all died. The two cases treated at the Boston City Hospital received large doses, 400 to 500 cubic centimetres by intravenous injection, in spite of which the progress of the disease to a fatal termination was rapid.

As noted in another column, the mortality of the New York cases has been very large. In most of these it is stated that the intracerebral injections were employed.

With regard to the efficacy of the antitoxin treatment, when we consider that recently it was employed in very large amounts and without modifying the mortality of the acute cases, it looks as if we must await some more effective preparation, stronger in antitoxic units, before much can be expected from it.

The fact that the milder cases got well under antitoxin treatment does not prove anything, as these cases got well before antitoxin was employed.

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THE TREATMENT OF INEBRIETY.

Those who are most actively engaged in work among the poor are agreed that alcohol lies at the basis of most of the degradation and misery which is so apparent in any large city, and is also a menace in our smaller towns. Various efforts have been made to remedy or at least modify the evil by legislative acts, with but doubtful success. Prohibition has failed of its end in great degree, and the restriction of licenses has but slight effect where so many are granted. Moral suasion, valuable as it may be in individual cases, will hardly reach the root of the matter, while human nature remains as it is. It would appear, therefore, that we must, in a measure, accept the situation, and while not relinquishing all legitimate means of combating the evil, should rather direct our attention, as physicians, to the vice of alcoholism as a disease, and provide suitable treatment for its victims. The recognition of this fact has led from time to time to the establishment of asylums for inebriates, in which they may have the restraint, combined with the moral and physical care, which are prerequisites to their cure.

The first institution of this sort in America was opened for patients at Binghamton, N. Y., in 1864; after various vicissitudes, dependent largely upon meddling politics, the institution was converted into an asylum for the insane. In spite of the unfortunate outcome of this earliest attempt at systematic medical treatment of the inebriate, over fifty similar hospitals have since been established in America, of which at least thirty are said to be in active operation at the present time. Our own State Institution at Foxboro is an example of what may be done in the treatment of this diseased and dangerous class in the community.

Wherever civilized man has gone alcohol has apparently been his constant companion, to the detriment of the morals of those savage tribes with whom he has been brought into contact, as well as of himself. We have been much interested in receiving a copy of a bill drawn up by Dr. J. M. Creed, of Sydney, New South Wales, providing for the care, control and treatment of inebriates in that community. The bill has already passed the Legislative Council, and is now ready for presentation to the Legislative Assembly for its concurrence. The document is drawn up in a most comprehensive way, and covers a great variety of details. Its object, in general, is to provide judicial authority over the inebriate class, to the end that they may be properly guarded and cared for during the periods of their irresponsibility. Certain of the more important suggestions of the bill are as follow: A judge or magistrate, on application, and after evidence of a medical practitioner, and on inspection, may make an order as to the control of inebriates. Lower courts may make an order in case of an inebriate frequently convicted of drunkenness. The property of an inebriate may be under the order of a judge or magistrate or court in lunacy. Inebriates are not to leave the Colony of New South Wales. Places where inebriates are under control may be inspected by certain officers, including the inspector-general of the insane. A person supplying an inebriate with intoxicants shall be liable to penalty. The governor may license institutions and may make regulations.

In general, the provisions of the bill are admirable, and may well be studied in detail by those interested in such legislation. While there are, doubtless, certain minor points dependent upon the form of government in New South Wales, which would not apply to our States, nevertheless, the underlying principle must be the same everywhere where inebriety exists. Victims of the alcohol habit, for the protection of themselves, their families, and the community at large, must in an enlightened state of society be treated not as criminals, nor as insane, but as sick, and therefore imperatively needing care, for a longer or shorter period.

Appended to the bill before us is an interview with Dr. Creed, which contains much common sense, clearly stated. Among other things he says:

> I have not slavishly followed previous legislation, as it has not been effective. In most cases elsewhere no action can be taken except on the initiative of the dipsomaniac himself, and but few have the self-reliance or sense of duty to do what is necessary for themselves. To be of real advantage any law must contain provision for action to be taken by some other person, if it is proved necessary, without the previous assent of the victim of intemperance. This is done in ordinary cases of lunacy; why should it not be in the madness of drink? It is hypercritical to object to similar action being taken in both cases. Habitual drunkards no doubt might be certified to as lunatics, but we are reluctant to place this stigma on any one who, if kept from drink, will be sane in a week. I have also taken a new departure by providing that a person may be placed under the charge of an attendant without being confined in an institution. In this way many sad cases might be controlled, in which the sufferers would have to be left to perish without it. . . . The best intellects of our time, which have made the consideration of this most important of all social problems a special study, are unanimous in their opinion that it is simply criminal ignorance to continue to treat drunkeness as a crime, when there are known scientific methods of dealing with it successfully — of curing it absolutely in many cases, as I have been, and am doing, even without the aid which this bill would give, and of preventing continuous outbreaks of the use of healthy substitutes for alcohol at the right time.

It is, no doubt, by such legislation, practiced in a large scale, that substantial reforms are to be accomplished.

MEDICAL NOTES.

Imprudent Homicide. — Dr. Lassellette has just been sentenced, in Paris, to two months' imprisonment for "imprudent homicide." The doctor had operated upon Madame T. for a voluminous fibroma of the uterus; a few hours after the operation the patient died. The autopsy revealed a pair of hemostatic forceps in the cavity of the uterus. — *Philadelphia Medical Journal.*

Dr. Schaefer Called to Edinburgh. — Prof. E. A. Schaefer, F.R.S., for fifteen years Jodrell professor of physiology in University College, London, has been elected to the chair of physiology in the University of Edinburgh.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, July 19, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 37, scarlet fever 24, measles 35, typhoid fever 15.

Tetanus at the Boston City Hospital. — Two cases of tetanus as a result of toy-pistol wounds received on the Fourth of July were treated by the intravenous injections of large amounts, 400 to 500 c. c., of the antitoxic serum of the State Board of Health. Both cases were acute, the incubation periods being five and six days, and both were fatal within twelve hours of admission to the hospital.

Butler Hospital for the Insane. — Dr. G. Alden Blumer, superintendent of the State Hospital for the Insane at Utica, N. Y., has accepted the offer of the superintendency of the Butler Hospital for the Insane, situated near Providence, R. I., to succeed the late Dr. Gorton.

NEW YORK.

Incompetent Treatment of the Sick; An Attempt to Prevent It. — A public meeting was held at the Waldorf-Astoria Hotel on July 13th, under the auspices of the Medical and Legal Relief Society, with the praiseworthy object of discussing the proper measures to be taken to put a stop to incompetent treatment of the sick by Christian Scientists and others. Unfortunately, however, the affair turned out to be somewhat of a farce, as there were few prominent medical men or other citizens present, and the Christian Scientists, who were on hand in large numbers, insisted on doing most of the talking. By way of formulation of remedial measures the provisions of a proposed bill by Alderman Opie were read, and these proved to be so impracticable as to be ludicrous. The bill might well be styled a law against giving bad advice, and is of such a nature that it could never be passed, or could never possibly be enforced if it were passed.

Sterilized Milk for Brooklyn. — Mr. Nathan Strauss, July 10th, began to supply the Borough of Brooklyn daily with one thousand bottles of pasteurized milk, free of charge, from one of his sterilizing plants in Manhattan, the distribution of the milk being made under the direction of the Health Department. A wealthy Brooklyn merchant has now offered to contribute $500 toward a fund to establish a milk-sterilizing plant in the Borough, and it is possible that a plant that was in operation there in 1895, and afterwards abandoned, may be reopened.

Bellevue's Narrow Escape. — By the prompt and energetic action of the resident physicians, nurses and attendants, several of whom were more or less seriously burned about the hands, Bellevue Hospital was saved from a destructive conflagration on the night of July 10th. The fire occurred in the infants' pavilion, where there were at the time about thirty women patients and forty babies, and was occasioned by the overturning of a candle, which set fire to the mosquito netting over one of the children's cribs. The flames spread rapidly from crib to crib, but, fortunately, all the inmates were rescued without any serious accident.

Scarlet Fever at West Point. — A slight outbreak of scarlet fever of mild type recently occurred among the cadets at West Point, occasioning a considerable scare and preventing the landing of the senior class of cadets from the U. S. Naval Academy, who had come up the Hudson on the training ship *Annapolis* to pay them a social visit.

Death at the Age of One Hundred and Two. — Mrs. Harriet Byron Townsend, daughter of the late John Seaman, died at Roslyn, L. I., on July 8th, at the authenticated age of one hundred and two years. She was born at Locust Valley, not far from the place of her death, on November 25, 1796. Of her numerous descendants there are living two children, ten grandchildren, fifteen great-grandchildren, and three great-great-grandchildren.

The Late Dr. Fabricius. — Dr. Frederick W. Fabricius, acting assistant surgeon, U. S. A., whose death from yellow fever at Santiago is mentioned in the Journal of July 6th, was until recently a resident of New York, where Dr. H. M. Biggs was his preceptor and special friend. He was only twenty-six years of age, and was graduated from Bellevue Hospital in 1895. Later he was an interne of the Metropolitan Hospital for the Insane.

Tetanus in New York. — During the three days July 12th, 13th and 14th no less than nine deaths from tetanus occurred in the city of New York, and ten deaths in places in the immediate vicinity, and it is said that between July 4th and July 16th there were in all twenty-four deaths from this disease in the city and vicinity. In almost every instance the tetanus was the result of a pistol-shot wound of the hand received on the Fourth of July, and nearly all the victims are young lads. The toy pistol is responsible for these deaths, the wad of the blank cartridge penetrating deep into the tissues of the hand, in most instances a very dirty hand. One case of tetanus, however, is reported from Yonkers in which the disease is attributed to the scratching off of a vaccination scab, with the result of producing an ugly sore. This patient on July 15th was said to be improving under tetanus-antitoxin treatment. A considerable proportion of the large number of cases of tetanus which have recently occurred in New York and the neighboring towns have been treated with the serum, in most instances, it is stated, by means of intracerebral injections. The percentage of recoveries cannot be given at present, but a large proportion of the patients died, and it seems probable that in most of them the treatment was not resorted to until too late to afford much hope of a favorable result. Of three cases at the Roosevelt Hospital in which the serum treatment was used, one died and two were reported improved. One patient died at the Harlem Hospital and one at the J. Hood Wright Memorial Hospital. Four cases in Yonkers were reported improved, and of two cases in Passaic, N. J., one died and one was reported improved.

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ARMY NOTES.

Cost of Subsistence for Sick Soldiers. — The orders issued during the Spanish-American War, allowing a *per diem* of sixty cents for the subsistence of each soldier undergoing hospital treatment have been revoked, and an allowance of forty cents per man from the appropriation for the subsistence of the army has been substituted, the latter sum having been found by experience to be amply sufficient.

The "Relief" Detained at Yokohama. — The hospital ship *Relief*, on her way from Manila to San Francisco, with 250 sick and wounded, has been detained at Yokohama by the heavy storms which have prevailed.

Policing of Volunteer Camps.— Recent orders relieve volunteer organizations in the home camps of the duty of policing their camp areas. The Quartermaster's Department is now charged with that duty, and is empowered to hire civilian scavengers and purchase the necessary appliances. These scavengers will have charge of the construction of latrines and the disposal of their contents, as well as the removal of all garbage and waste. The necessary disinfectants are to be furnished by the Medical Department. This order has been issued as a result of the recognition of the fact that raw troops are unwilling to properly perform the unpleasant tasks required for the maintenance of a fixed camp in sanitary condition, and manifest a strong tendency to evade the performance of such duties. The same order also amends tactics to the extent that latrines may be located by commanding officers as far from the vicinity of the kitchens as may be necessary, it formerly being prescribed that the company kitchens and latrines should be on the same side of the camp area, and hence in too close relation with each other.

Miscellany.

THE FEMALE NURSE CORPS OF THE ARMY.

A circular providing for the organization of a corps of army nurses under the direction of the surgeon-general has recently been issued by the War Department. The corps will consist of chief nurses, nurses and reserve nurses, from which assignments will be made by the surgeon-general to such military hospitals as may contain cases requiring the attention of trained nurses. At each hospital to which nurses are assigned, one of them is to be a chief nurse, but under ordinary conditions not more than two will be assigned to hospitals having less than twenty beds. Women not under contract will not hereafter be permitted to serve as nurses in army hospitals except in an unforeseen emergency, the medical officer in charge of the hospital being required to at once report the fact to the surgeon-general for his action. For appointment, nurses must be qualified physically, mentally and morally; must be graduates of reputable training-schools and have had two years' experience in a hospital, and must also be endorsed by the superintendents of the schools in which they may have been trained or graduated. These provisions may, however, be waived in the case of dietists, immunes to yellow fever and nurses who rendered satisfactory service during the Spanish-American War. Contracts with nurses will be for periods of at least a year, except for immune nurses, who are not required to sign for any definite length of time. Nurses recently accepted are considered as on probation regarding their fitness for army service, and if not found acceptable are to be recommended for annulment of contract by the chief nurses under whom they may have served. Such recommendations, after being suitably endorsed by the medical officer in charge, are to be forwarded to the surgeon-general. The contract of a nurse will not be annulled except for good reason, presented in writing and forwarded the surgeon-general through the chief surgeon. The contracts of nurses serving outside the United States may be annulled by chief surgeons, provided the services of such nurses are no longer required; but nurses on duty in the United States, whose services have been satisfactory, will not be discharged except by order of the surgeon-general. For service in the United States the pay of nurses will be $40 per month; for colonial service $50 per month. Chief nurses receive the same pay as nurses where less than five nurses are constantly serving at a hospital. Where five or more and less than ten are constantly serving, a chief nurse receives $60 per month, while if more than ten nurses are serving together the chief nurse receives $75 per month. Nurses are furnished with transportation, medical attendance, furnished quarters and with one ration in kind. Leaves of absence on pay are not to exceed thirty days in any one year, but while on such leave the nurse receives twenty-five cents per diem in lieu of a ration. While on leave of absence the time consumed in travelling to and from the United States will not be counted. Each nurse must provide the prescribed uniform of blue and white at her own expense.

A certain number of nurses who have rendered at least four months' satisfactory service in the army are to be appointed reserve nurses. Each reserve nurse is required to sign an agreement to enter active service, when and wherever necessary, and to report to the surgeon-general on the 1st of January and 1st of July of each year, and at other times if required. Reserve nurses are not paid except when on active duty and sign contracts for no definite period. A nurse will be dropped from the reserve list upon reaching the age of forty-five years if she ceases for five years to practise her profession, if she becomes incapacitated for duty by reason of ill-health, or for any other good and sufficient reason.

The nurses' corps is at present under the supervision of Dr. Anita Newcomb McGee, the only woman contract surgeon in the army.

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THE SECRET OF SUCCESS IN MEDICINE.

We learn from an American contemporary that Dr. John E. Harper, in an address on Success in Medicine, delivered at the graduating exercises of the College of Physicians and Surgeons of the University of Illinois, pointed his moral by citing the principles adopted by Sir Henry Holland for the conduct of his professional life. Holland began practice, Dr. Harper informed his hearers, "at the age of twenty-one among the aristocracy of the West End of London, and at the outset made the following two resolutions: (1) That he would never practise more than ten months in any one year, spending the remaining two months in travel and recreation; (2) that he would never allow his practice to exceed fifty thousand pounds per annum." To these rules, we gather, he adhered with admirable resolution for sixty-four years, and it is comforting to know that he "several times collected in one year the amount to which he had limited himself." We fancy that most people will fully agree with Dr. Harper that the secret of success in medicine is to make £50,000 a year. The resolution never to exceed that limit is one that most of us would find no difficulty in keeping; nor would many find such a self-denying ordinance as Sir Henry Holland with such fortitude inflicted on himself at all necessary. Sir Henry's plan of starting in practice "among the aristocracy of the West End of London" is another secret of success that is unfortunately not open to every one. Not a few have to content themselves with the aristocracy of Brixton, or Stepney, or even of Whitechapel, but these haunts of fashion have, of course, the advantage that the practitioner has, perhaps, less difficulty than he might find at the West End of limiting his income to £50,000 a year. To speak seriously, Sir Henry Holland's career is about the last which could be used as showing to ordinary practitioners the way to success in medicine. He had altogether exceptional advantages at the start; he lived at a time when a little knowledge went very much further than it goes now; he was largely used by statesmen as a neutral medium of unofficial communication, and by ladies as a purveyor of gossip — it is not on record that on his paying a professional visit one day he was informed that her ladyship was too ill to see him? Lastly, he did not limit his aspirations in the matter of fees to £50,000, but to £5,000 a year. Even this is a self-limitation which most practitioners do not find it needful to impose upon themselves as a rule of professional life. — *British Medical Journal.*

THE VEILED OPERATOR.

The bacteriologists have discovered that the beard is without doubt guilty of harboring septic germs. Dr. Hübener, of Breslau, according to the *British Medical Journal*, has experimented on several of his bearded colleagues, passing a slide bearing a film of agar-agar two or three times over and through the beard. Out of 26 cases pyogenic cocci were thus obtained in 11; in 3 the staphylococcus pyogenes aureus in small groups; in 8 the staphylococcus pyogenes albus in great abundance. Experiments were tried by Professor Flügge — a man with a beard standing for ten minutes close over an agar plate without a cover, and then standing for the same time close to another agar plate with his beard covered with a mask of folded muslin. The difference in the number of germs thus obtained was extremely trifling. Nevertheless Hübener[1] believes that he has contrived a more perfect beard guard. A frame of the kind seen in the simpler chloroform masks is covered with sterilized muslin, and held to the face by a metal bar passing over the ears, as in a pair of spectacles. It covers the mouth and nostrils, and some of the muslin hangs below it and is tucked under the beard and fixed with pins to the collar of the operating jacket. Dr. Hübener finds his mask very effective. He repeated Flügge's experiments, and on this occasion the agar plate remained sterile in 6 out of 18 experiments with bearded surgeons. In the remaining 12 he assures us that only a few insignificant "colonies" were obtained. We fear that if this mask be adopted here, certain well-known opponents of antiseptics will laugh at the beards of their colleagues, an act which in the East is considered derogatory. Garré recommends that the operator should not wear a mask, but keep his beard moist in sublimate solution during an operation. This practice, however, is very uncomfortable, spoils the beard, and appears to act imperfectly as a guard against sepsis. Several foreign operators, it would appear, habitually wear beard masks. Theoretically, shaving would seem the safest course if Hübener's earlier experiments indicate a constant condition.

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[1] Centralbl. f. Chir., No. 11, 1899.

METEOROLOGICAL RECORD

For the week ending July 8th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....2	30.03	74	86	61	52	65	58	S.W.	S.W.	10	15	C.	C.	
M...3	30.02	78	92	65	62	69	66	W.	S.W.	10	14	C.	C.	
T....4	30.04	81	94	68	57	68	62	S.W.	S.W.	12	14	C.	C.	
W...5	30.00	80	89	70	73	80	76	S.W.	S.	11	13	C.	C.	
T....6	29.86	81	90	72	79	64	72	S.W.	S.W.	9	13	O.	O.	.02
F....7	29.92	78	86	71	72	58	65	W.	W.	12	8	C.	C.	
S....8	29.89	72	77	68	77	91	84	E.	S.W.	8	6	O.	O.	.45
☞	29.97	78	88	68	67	71	69			10	12			.07

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 8, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1607	845	26.76	8.40	21.00	.60	2.88
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	435	189	20.24	10.58	14.03	2.07	2.56
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	195	66	14.28	12.75	5.61	1.02	3.06
Baltimore . .	506,389	268	136	37.45	6.66	33.56	1.85	1.85
Cincinnati . .	405,000	121	—	12.45	1.66	8.26	—	1.66
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	—	—	—	—	—	—	—
Washington .	277,000	153	78	28.60	5.85	25.35	.65	1.30
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	47	23	44.73	6.39	27.69	—	4.26
Nashville . .	87,754	47	21	31.95	19.17	21.30	4.26	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	108,240	—	—	—	—	—	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	31	19	41.86	9.66	28.98	3.22	6.44
Lowell . . .	88,641	48	33	47.84	2.08	40.60	—	4.16
Lynn	66,703	—	—	—	—	—	—	—
New Bedford .	66,340	24	21	41.60	4.16	37.44	—	4.16
Somerville . .	61,101	11	5	9.09	—	9.09	—	—
Lawrence . .	57,263	37	24	43.20	13.50	32.40	—	8.10
Springfield . .	56,501	15	9	40.00	13.33	13.33	—	—
Holyoke . . .	43,424	16	10	25.00	12.50	25.00	—	—
Brockton . .	37,278	9	2	11.11	—	—	—	11.11
Salem. . . .	36,883	21	9	4.76	4.76	4.76	—	—
Malden . . .	34,613	8	—	—	12.50	—	—	—
Chelsea . . .	33,468	15	3	6.66	20.00	—	—	6.66
Haverhill . .	32,022	6	1	—	—	—	—	—
Gloucester . .	30,589	4	1	—	25.00	—	—	—
Newton . . .	29,716	13	5	6.79	—	—	—	—
Fitchburg . .	29,438	—	—	—	—	—	—	—
Taunton . . .	28,167	15	6	13.33	—	13.33	—	—
Everett . . .	25,338	7	4	—	—	—	—	—
Quincy . . .	23,549	6	1	—	66.66	—	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	9	2	—	11.11	—	—	—
North Adams .	20,971	3	—	—	—	—	—	—
Chicopee . .	17,842	12	7	50.00	—	50.00	—	—
Medford . . .	16,511	3	—	—	—	—	—	—
Newburyport .	14,915	—	—	—	—	—	—	—
Melrose . . .	14,032	2	—	—	—	—	—	—

Deaths reported 3,194; under five years of age 1,523; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 841, diarrheal diseases 651, consumption 286, acute lung diseases 202, diphtheria and croup 90, typhoid fever 30, whooping-cough 24, measles 17, cerebro-spinal meningitis 13, scarlet fever 11, erysipelas 3, small-pox 2.

From whooping-cough New York 10, Philadelphia 4, Boston and Nashville 3 each. From cerebro-spinal meningitis New York 4, Boston and Cincinnati 3 each, Baltimore, Providence and Newton 1 each. From measles New York 13, Providence 2, Philadelphia and Washington 1 each. From scarlet fever New York 7, Boston 2, Philadelphia and Baltimore 1 each. From erysipelas New York 3. From small-pox New York and Boston 1 each.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 15, 1899.

L. B. BALDWIN, surgeon, detached from the Key West Naval Station and ordered to hospital, New York, for treatment.

R. G. BRODRICK, passed assistant surgeon, granted sick leave for six months.

R. K. MCCLANAHAN, assistant surgeon, detached from the Naval Hospital, Philadelphia, Pa., and ordered to the Key West Naval Station.

L. L. YOUNG, passed assistant surgeon, sick leave extended three months.

J. M. STEELE, surgeon, detached from duty in connection with recruiting rendezvous at Baltimore, Md., and ordered home to wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JULY 13, 1899.

MCADAM, W. R., assistant surgeon. Granted leave of absence for fourteen days. July 11, 1899.

RAMUS, CARL, assistant surgeon. Relieved from duty at the Cape Charles Quarantine Station and directed to proceed to Havana, Cuba, and report to Surgeon H. R. CARTER, for duty. July 13, 1899.

FOSTER, J. P. C., acting assistant surgeon. Granted leave of absence for thirty days. July 11, 1899.

STEARNS, W. L., hospital steward. Relieved from duty at New York, N. Y. (Stapleton, Staten Island), and directed to report to the medical purveyor, New York City, for duty. July 8, 1899.

ALLEN, G. C., hospital steward. Relieved from duty at Baltimore, Md., and directed to proceed to New York, N. Y., and report to the commanding officer for duty and assignment to quarters. July 8, 1899.

PECK, F. H., hospital steward. Relieved from duty at the Egmont Key Detention Camp and directed to proceed to Baltimore, Md., and report to the commanding officer for duty and assignment to quarters. July 8, 1899.

SOCIETY NOTICE.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION. — The Association will hold its ninth annual meeting at Washington, D. C., September 19, 20, 21, 1899.

D. PERCY HICKLING, M.D.,
Chairman Committee of Arrangements.

ERRATUM.

In the number for July 13th, on page 40, second column, line twenty-eight, "macrocytes" should read "microcytes."

RECENT DEATH.

RUSSELL STURGIS, JR., M.D., M.M.S.S., died in Boston, July 17, 1899, aged forty-two years.

BOOKS AND PAMPHLETS RECEIVED.

Hay Fever. By Carolus M. Cobb, M.D., Lynn, Mass. Reprint. 1899.

Infant Mortality in Massachusetts. By Samuel W. Abbott, M.D. Reprint. 1898.

Self Examinations for Medical Students. Philadelphia: P. Blakiston, Son & Co. 1899.

Signs and Tests of Death. By Justin Herold, A.M., M.D., New York. Reprint. 1899.

Modern Possibilities in Chronic Catarrhal Deafness. By Sargent F. Snow, M.D., Syracuse. Reprint. 1898.

White Dandy, or Master and I: A Horse's Story. By Velma Caldwell Melville. New York: J. S. Ogilvie Publishing Co. 1898.

Annual Reports of the President and the Treasurer of Harvard College, 1897–98. Cambridge: Published by the University. 1899.

Transactions of the Louisiana State Medical Society at its Nineteenth Annual Session, held at New Orleans, La., May 10, 11, 12, 1898. New Orleans. 1899.

On the Use of the Valeriantes of Creosote and Guaiacol in the Treatment of Pulmonary Tuberculosis. By A. B. Briggs, M.D., Ashaway, R. I. Reprint. 1899.

The Importance of Blood Examinations in Reference to General Anæsthetization and Operative Procedures. By Hamilton Fish, M.D., Ouray, Col. Reprint. 1899.

Electro-hæmostasis in Operative Surgery. By Alexander J. C. Skene, M.D., LL.D., Professor of Gynecology in the Long Island College Hospital, N. Y., etc. New York: D. Appleton & Co. 1899.

Peripheral Nerve Transplantation, with the Report of a Case in which the Sciatics of a Dog were Transplanted Successfully between the Severed Ends of the Median and Ulnar Nerves of a Man. By Reuben Peterson, M.D., Chicago. Reprint. 1899.

Materia Medica and Therapeutics: An Introduction to the Rational Treatment of Disease. By J. Mitchell Bruce, M.A. (Aberd.), M.D. (Lond.), Fellow of the Royal College of Physicians of London, etc. Philadelphia: Lea Brothers & Co. 1899.

Laboratory Work in Bacteriology. By Frederick G. Novy, Sc.D., M.D., Junior Professor of Hygiene and Physiological Chemistry, University of Michigan. Second edition, revised and enlarged, with frontispiece and 76 illustrations. Ann Arbor: George Wahr. 1899.

Chronic Appendicitis the Chief Symptom and Most Important Complication of Movable Right Kidney. The Relations of Movable Kidney and Appendicitis to Each Other and to the Practice of Modern Gynæcology. Chronic Nephritis Affecting a Movable Kidney as an Indication for Nephropexy. The Hernia Guarantee and the Minimum of Confinement after Operations for Appendicitis with and without Pus. By George M. Edebohls, A.M., M.D., New York. Reprints. 1899.

Address.

NOT THE DISEASE ONLY, BUT ALSO THE MAN.[1]

The Shattuck Lecture.

BY JAMES J. PUTNAM, M. D., BOSTON.

(Concluded from No. 3, p. 57.)

Every thinking person is aware that our minds work under many masters; we might designate them as our "silent partners." Under normal conditions we have reason to congratulate ourselves at the useful division of labor which this arrangement secures; but when the mental harmony is broken by disease, these masters of the mind jostle and trip each other in their efforts to restore the balance, and then we feel the sort of dismay, the sense of alteration of ourselves, such as in old days was called possession by the devil. The acts that we do are only partly the acts of our personal wills: some of them seem inspired and even performed by a power which is more or less foreign, yet which we feel bound to obey. So Tennyson's sailor boy, who must and will run away to sea, says:

> "My mother clings about my neck,
> My sisters crying, 'stay for shame';
> My father raves of death and wreck,
> They are all to blame, they are all to blame.
>
> God help me, save I take my part
> Of danger on the roaring sea,
> A devil rises in my heart
> Far worse than any death to me."

Or, as the writer of the charming Harvard ballad puts it:

> "Within my earthly temple there's a crowd;
> There's one of us that's humble, one that's proud;
> There's one that's broken-hearted at his sins,
> And one that, unrepentant, sits and grins;
> There's one that loves his neighbor as himself,
> And one that cares for naught but fame and pelf.
> From much corroding care should I be free,
> If once I could determine which is me."[2]

We have not the right, even where we have the wish, to deny our responsibility for the acts of these hidden forces of the mind, and it is a high function of education to enable us to understand and to control them; to make the desirable "me" prevail.

And thus queerly constructed, and perhaps with the demon of distrust looking through his eyes and speaking a language which his words vainly strive to contradict, the patient comes to the doctor, carrying his burden of morbid habits, as Christian, in "Pilgrim's Progress," carried the burden of his sins, seeking for explanation and relief. How shall he be met?

The answer instinctively suggests itself: by some sort of treatment akin to "hypnotic suggestion." This name excites great prejudice in many minds, and I should be glad to have it forgotten until the principles on which such treatment rests shall have been indicated, and the fact made evident that the methods designated differ only in degree from other modes of influence such as every physician uses in his daily practice and every person of strong character in the contacts of daily life. The analogies that suggest themselves in these directions are, in fact, so striking, that there is risk of going too far toward making out the hypnotic method to be an affair of everyday occurrence. One often hears the influence which society exerts over its members spoken of as "hypnotic," and it is quite as justifiable, and more to our purpose, to extend the conception so as to cover the case of a hypochondriacal patient whose judgment and reason have been captured by a morbid habit or a delusion of disease. There are times when we all become unusually impressionable to external influences or to the promptings of our own instincts; and it is clear that this is made possible by the withdrawal of the critical and questioning faculty that stands like a Cerberus at the door of the mind and is the enemy of all impressionability except of its own choosing. It is by no means to be assumed that the person thus altered is necessarily reduced to a lower plane. We make ourselves voluntarily more impressionable and less critical for the purpose of listening better to the whisper of our genius or our conscience, or to the whisper of one such voice chosen out of many:

> "Though love repine and reason chafe,
> There came a voice without reply, —
> ''Tis man's perdition to be safe,
> When for the truth he ought to die.'"

Even the means by which the impressionability of health is voluntarily secured sometimes present a striking resemblance in detail to those which are used for the purposes of hypnotic suggestion. Take, for instance, the case of a person who is striving to recall some name or fact. The whole substance of his effort consists in eliminating everything that stands in the way of complete passivity. He sits fixedly gazing at some object, yet taking no heed of what he sees; he hears the ticking of the clock with unusual intensity, but the sound does not reach beyond the ear, and serves only as a means to keep him from entertaining any stronger interest that might prevent his catching the first glimpse of the real object of his desire, if, by chance, impelled by the hidden forces to whose influence he submits himself, it should drift across the field of his mental vision.

I need not pursue these analogies further in order to convince you that a patient staggering under a tormenting and dominating habit has no reason to feel humiliated when he yields to an influence so familiar as that which I have indicated, in order to make himself impressionable to the words of encouragement from the physician in whom he has confidence, and who is striving by these means to reveal to him another and truer picture of himself than that with which in his delusion he has been so long familiar. And this applies also to the child, impressionable by nature both to evil and to good, and sometimes a victim to tricks of bodily and mental habit which can be removed only by deep-reaching influences of these sorts, if even then.

A sweeping condemnation is often brought against the use of hypnotic suggestion, based on the assumption that it involves the subjection of the will of the patient to that of the doctor. But this same sort of influence is exerted daily in the schoolroom, in social intercourse, and most of all in the army, and the results are good or bad according to the obvious intention of the method, and to the intelligence or ignorance, the high-mindedness or low-mindedness of the person by whom it is brought to bear. The physician who domineers over his patient, or makes him a slave to needless rules, can weaken his independence without hypnotic suggestion; while he who is bent on strengthening the patient's will can and must call special methods, analogous to those of hypnotic suggestion, to his aid. Nevertheless, the final aim of the doctor, as Madame De Staël said of the legislator, should be to make himself unnecessary, and we may add, in company with the sturdy Sir James Paget, to make, if it is warrantable, even his rules unnecessary.

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[1] Delivered before the Massachusetts Medical Society, June 13, 1899.

[2] E. S. Martin: Sly Ballads in Harvard China.

For the attainment of the ends that I have indicated the patient must be taught to let his critical instinct and his will lie passive at first, while the new set of motive-impulses is being presented, but finally to use them for reinforcing the new mental attitude which they could not have created alone. The part thus assigned to the will is not a wholly negative one, and the imputation that the patient grows strong solely through another's effort is only correct if the treatment stops short of the final stage. In fact, the whole treatment, from first to last, and at every stage, involves the patient's consent and co-operation. This passivity or "consent," whichever one may call it, of the critical instinct and the will may be induced in many ways. The teacher secures it when he exerts over his pupil the fascination of his personal influence for the purpose of interesting him in his tasks; the physician secures it when he induces his patient to sit or lie quietly with muscles relaxed and senses engrossed, so that he shall listen without inclination to comment on what is said, or shall allow his own sense of encouragement and hopefulness to take deeper root. If, after such treatment, the patient comes and says: "I heard what you said, but cannot now repeat it," and if, thereafter, his act shows the reappearance of the newly-suggested impulse in the form of an apparently spontaneous product of the patient's thought, the most desirable result will have been attained. This kind of treatment may be called "hypnotic suggestion" if one will, but the prejudices that this word used to excite would never have arisen if such therapeutic measures as these had alone been in question.

It would, however, be disloyal not to recognize that even the experimental uses of hypnotic suggestion, objectionable as in some respects they are, have been of high value to medicine. It is to the studies made possible by hypnotic methods that we owe much of our present familiarity with that part of the mental life that lies beyond the direct reach of our personal attention, and if to this we add the service that treatment involving profound hypnotic influence has rendered in many cases of serious and otherwise incurable disorders we have abundant reason to be grateful for Braid's and Liébault's discoveries. Nevertheless, it has, fortunately, been found that the actual induction of the hypnotic sleep is far less often necessary, so far as therapeutic purposes are concerned, than was formerly believed. The results effected through it have given the hint that simpler methods might suffice, and so have inspired with new power the physician's confident assurance of improvement or recovery that gets the name of "waking suggestion." It is the patient's misfortune if this assurance does not reflect the most thorough diagnosis that science can command and the most hopeful prognosis that the conditions, *taken at their best*, can justify. Unfortunately, it sometimes happens that the very scientific training which justifies the physician's dignified position of authority in the community acts to prevent him from "taking at their best" the influences that make for a good prognosis. The capacity, one might also say the genius, for improvement which the patient often shows is apt to be underrated, just because it is so mysterious, so undefinable, and so wayward. Both physician and patient need to realize more fully that the latter has, to a considerable degree, the germs of a real power of control over his bodily and mental states, provided his personality is conceived of in a sufficiently broad sense.

Whatever be the method by which the influence is secured, the treatment of these diseases of association and habit must follow one of two familiar courses. The first is that of eliminating from the mind the troublesome and recurrent impulse or habit; the second, that of introducing another impulse incompatible with the former and tending therefore to its exclusion. Both of these attempts are made in education of every sort, but it is safe to say that the latter is by far the more successful of the two, and is in fact the one which mainly does the work even when it is not ostensibly employed. It is wiser to build up than to pull down, to induce virtue than to eliminate vice, to get rid of morbid thoughts by supplanting them with others that are better, or to utilize them as materials for growth rather than to conduct a campaign against them. The restoration of motion is the essential factor. The swiftly-flowing river will quickly absorb the muddy brooks that enter at its sides. That is, to say the least, the "Western" as distinguished from the "Oriental" mode of progress. It is true that great therapeutic advantages have seemed from time to time to have been gained by seeking out and casting out a painful or bitter experience which had been germinating, perhaps for years, in the mind, hidden from view except in its morbid manifestations, which took the form of hysterical outbreaks, moods of depression, disordered sleep and other phenomena of like character. Several remarkable series of cases[10] have been reported where such ideas have apparently been traced to their lair and then exterminated, and with them the complex organization of morbid ideas and emotions of which they formed the centre. I believe, however, that this explanation of the therapeutic successes which have unquestionably been achieved in such cases is not necessarily the correct one. One may readily believe that if a patient could be brought to give his tacit consent to any theory of the cause of his troubles which the ingenuity of the physician might suggest, he would gain new hope and receive an effective impulse toward recovery, even if the theory which was offered him was not the true one. The main point is, I believe, to secure a nucleus for a new set of associations which shall be exclusive of the old ones. The patient is to be taught to push ahead in the direction of health and activity as one pushes his way through a thick forest, regardless of the scratches and bruises to which he is exposed on the way, and it does not greatly matter whether the path of escape is or is not identical with that which was followed when the way was first lost, except in so far as that it is important to gain the patient's ready acceptance of the path actually proposed.

Unfortunately, even the much vaunted hypnotic suggestion often fails to work; or if the new suggestion seems at first successful the morbid habit may in the end settle heavily back again. Is "Philip drunk" or "Philip sober" really the stronger and more consistent character? This is a question which the doctor often has to ask himself and to which, perhaps, it is only by trial that he can find the answer. Fortunately, in the memory of Philip sober there may be groups of half-forgotten experiences[11] dating back perhaps to the days of his youth, and capable of forming, by their union with the new impulse, a temperament sympathetic with the better course, and thus he may be enabled to prevail. One may try to express such conditions in terms of cerebral anatomy and physiology, but it is doubtful whether, in the present state of our knowledge, a clearer conception of the process would thereby be gained.

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[10] See contributions by Dr. Russell Sturgis on the Use of Hypnotism to the First Degree, in the New York Record, Feb. 17, 1894; also Ibid, 1899 The earlier publications by Janet, Breuer and Freud, and others should be noted in this connection, and also Loewenfeld's excellent criticism in his Psychotherapie.

Fortunately for the educational outlook, the evidence has begun to accumulate that a morbid inheritance is not the inevitably crushing and baneful thing that it has been thought. We come into the world, each one a being of limited capacity but in other respects free to become what circumstances make us, and responsible, to the extent of our capacity, for our lot. We bring no ticket-of-leave which stamps us as drunkards or maniacs on probation, but we do bear, in the histories of our ancestors, a certificate that hints by what efforts and by what avoidances we can make ourselves reasonable successes in our respective lines. There is no original sin, and not even, as it seems to me, original propensity, but only original capacity and original limitation, and even limitation is only another name for latent capacity.

A highly interesting side-light is thrown on the discussion between these two doctrines — the fatalistic doctrine of propensity and predestination, and the more hopeful doctrine of plasticity limited only through capacity — by the evidence adduced in a somewhat similar discussion which has been going on among the embryologists. What is it that gives our bodies their definite and ever recurrent form? Do the nerves as they pass from their centres of growth to their destination in the skin and in the muscles bend and twine to find their passage in obedience to some inherent tendency of growth, or does each cell-process start out not only ignorant of its future but without a positively defined future, and make its way in obedience to mechanical laws of least resistance and simple laws of growth, just as a rootlet makes its way amongst the stones in its seemingly inspired search for the distant water? If I understand aright the teaching of the present day, the latter is the case. This teaching does not aim to rob heredity of its powers, but, in so far as it is applicable to the problems of mental growth, it does glorify the influence of education in making us what we are. The child of the drunkard does not inherit drunkenness, but he does inherit a defective brain, a brain liable to go wrong perhaps in many ways but reclaimable to a considerable extent through education; just as the child of the tuberculous parent does not inherit tuberculosis but the soil on which it may develop. The difference between these two doctrines is more than an academic quibble. It is one of vital tendency.

The cases that I have thus far had in mind have been of relatively curable sorts, either because the patients had traditions of good health to look back upon, or because it was assumed to be possible to cast out some special fixed idea, or habit, or delusion of illness, which had arisen in consequence of some more or less accidental experience, but still lay loosely attached in the mind, or, at any rate, had not become, through the bonds of association, an integral part of the great body of ideas and feelings on which the patient's mental life revolved. But these disorders arise more readily, strike their roots wider and deeper, and keep a more tenacious hold if there is a native defect in the mechanism of the nervous system such as we see in that great class of cases which for convenience's sake may be grouped as *constitutional neurasthenias.* With such patients the problem of treatment is often not so much to rid them wholly of the consciousness of their symptoms as to aid them to look through and beyond their troubles, and eventually in some degree to ignore them, as one learns to ignore a defect in vision.

If patients with this sort of illness are often plagues to themselves they are no less a source of sighs and groans to their doctors and their friends. Yet they are among the best and keenest people in every community, and it may even be said that it is their doctors and friends who are in a measure responsible for keeping them what they are, — at least in the sense that salt was defined by the small boy as that which made potatoes taste so bad when there wasn't any on. In other words they would be better off if we knew better how to appreciate and to treat them. Liable to fatigue, and unable to accomplish as much as their robuster neighbors, such patients become keenly alive to their failures, and are apt to fall into mental habits marked by baffled reason, morbid self-consciousness, and balking will. Beginning by suspecting and hesitating, they often end by ceasing to act. The limitations set by the original "weakness" are of trifling consequence as compared with these secondary and needless incrustations, framed from false premises by the patients' inexorable logic. But the balking will, like the balking horse, can often be trained to work again; the obstacles that seemed so invincible when tangled into a web made up of the memory of past failures and fears can often be overcome if taken piece by piece.

Fortunately, it is by no means every neurasthenic patient whose case takes the unfavorable course that I have indicated. There are many persons, weak in body but unconquerable in spirit, who keep themselves free from this entangling web of troubles. They make unnecessary the therapeutic suggestions of the physician by accepting their limitations as indications for casting about to decide on their best course for the future and best means of usefulness for the present, and striving to regard the tasks imposed by illness in the same light as the tasks imposed by health. Such persons give new meaning to the fine words that Tennyson puts into the mouth of the aged Ulysses:

> "Tho' much is taken, much abides; and tho'
> We are not now that strength which in old days
> Moved earth and heaven; that which we are, we are;
> One equal temper of heroic hearts,
> Made weak by time and fate, but strong in will
> To strive, to seek, to find, and not to yield."

The problem for the physician in dealing with patients to whom such a course as this does not come instinctively is to use all the means that may lead to its adoption. If there is any slender thread of interest or enthusiasm or even of fanaticism in their composition it should be recognized and encouraged. And, happily, the slender thread is often enough. It has not the all-embracing power of the large and warm temperament of hopefulness, but what is lacking in massiveness may in a measure be made up for by intensity. The almost fierce glow of energy and fortitude seen in some of the frail-bodied New England women portrayed by Miss Wilkins gives a good illustration of this principle.

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[11] See Dr. Mary Putnam Jacobi's paper, A Suggestion in regard to Suggestive Therapeutics, in the New York Medical Journal for April 9, 1898.

Neurasthenic patients cannot, as a rule, be expected to overcome their troubles alone. We say to them, "make an effort of the will and do this or that," but the will cannot create situations, but only choose between them, and although it is true that a better choice usually exists than that which the patient makes, yet to see this and to choose correctly is a task of no little difficulty. Such a patient is compelled at each step to compare the act which he wishes to accomplish with that which he wishes to avoid, and so the latter is presented afresh with all its imperative fascination, as a card is forced on a novice by a skilful player. It is the physician's part to present a new alternative for the reason to adopt and the will to act upon. When such patients clearly understand that, with patience and the cultivation of a dogged indifference to symptoms which are unimportant though annoying, they can learn to note and to accentuate their powers of accomplishment and enjoyment, the ground is already cleared for the action of food and tonics, recreation and active work.

An element of special encouragement and mental stimulation in particular directions may be made to accompany treatments designed ostensibly to fulfil other needs. The famous so-called "rest cure," which the genius of Weir Mitchell devised, owes the remarkable success which it exhibits in able hands less to rest and food in themselves than to the mental influences that go with the isolation, the scrupulous precautions that leave no excuse for indigestion or fatigue, the obvious confidence of the doctor and the nurse, and the contagion of recovery such as permeates every successful hospital. All these changes in the patient's surroundings are often, from the point of view of mental influence, more effective than a journey to Europe, though even as regards the latter the familiar lines:

> "Cœlum non animam mutant,
> Qui trans mare currunt."
> (They change their skies but not themselves,
> That cross the seas.)

are, luckily, not always true.

Many a doctor has tried the rest treatment and has failed, because he did not follow exactly Dr. Mitchell's rules, not realizing that in omitting certain "surely unessential" details he was leaving out the very heart of the mystery. On the other hand, I fully agree with Dr. Prince[12] that results similar to those accomplished through the agency of the "rest cure" may often be obtained through pure mental stimulation and education.

Take next the question of physical exercise, which may stand as a type of a whole class of treatments. You recommend it for your neurasthenic patient, but to what end? Do you wish to toughen his muscles, to help his digestion, to strengthen his heart? Or is it in fact recommended for the sake of introducing the leaven of energy, in the hope that it may finally infect his whole mental life? If such is your desire, five minutes of sharp exhilarating work or play will do what hours of chest-weights would fail to accomplish. Perhaps you may even start a love for the study of physical development and thus give a new impulse to an invalid life. It may be as when a boy, dull at his books and drifting into general incompetency, has the good fortune to meet some one who discovers that he is a genius at whittling, and who by encouraging him in this accomplishment gives him a chance which will in the end transform him not only into a good mechanic but into a man of first-rate, all-round capacity. And so, too,[13] relaxation of body may be employed to teach relaxation of mind. On the same principle, a soothing treatment by water or electricity may help to give the genius of sleep a better chance to control the currents of the mind.

It is worth while to note what a needless weight of sombre forebodings is often carried by a *word* or *name* to the patient's anxious mind. To feel "tired" may be bad enough at the best, but it makes a world of difference whether one accustoms himself to take the term as meaning the fatigue of a person who expects in due time to be rested, or as a bottomless pit of exhaustion, demanding sighs and groans. It is true, as Dr. James says,[14] that the drunkard's reform often dates from the day that he gives himself the unsavory name, it is equally true that needlessly alarming symptoms can often be unmasked on the reversed principle; as a legal friend of the writer once, in court, robbed an "excoriated tibia" of its terrors by rendering it as "barked shin"

Happy is the neurasthenic patient who has a sense of humor or a liking for philosophy, so that he can get a certain satisfaction from externalizing his troubles, as William Blake painted his visions and Bunyan put his into the Valley of the Shadow of Death. To learn to recall the good days on the bad days; to remember that the University of Leyden was founded during the starvation of the great siege, and to realize that limitations are also finger-posts to new sorts of progress, infuses a sense of triumph into one's efforts toward the self-forgetfulness of effective life. Many patients think that they are not gaining, because the signs of improvement are less obvious to them than the signs of failure. The latter stand out in painful isolation; the former lose their own identity in augmenting the general efficiency, just as the stippled spots of paint on the impressionist's landscape blend into a glow of color. Fortunately, however, the test of successful work and the sense of comfort that accompanies it usually tell the truer story, and the physician can powerfully intervene as an interpreter.

Neurasthenic patients are often led, partly by native temperament, partly through the circumstances of their illness, to seek philosophic views of life, and indeed without some familiarity with them even the buoyant satisfaction that successful work brings to the healthy mind leaves something to be desired.

The inspiring doctrine of individuality, with which the pages of Emerson are full, that heightens one's interest in the novelties which the light coming through one's own window, the touchstone of one's own genius, can alone reveal; the reassuring belief that urges us to "live ever in a new day," and forbids us to drag around the "corpse of our memories" of evil; the great doctrine of "service," which presents only another aspect of the principle that if a man consistently follows the lead of his own best instincts he is sure to find that his interests are at one with those of an ever-widening community; such principles as these are like so many watch-fires, blazing up from the hill-tops into the darkness of the night.

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[12] Educational Treatment of Neurasthenia: Boston Medical and Surgical Journal, 1898.

[13] As Miss Annie Payson Call has so well explained.

[14] Talks to Teachers.

In conclusion, I would say, as I said in opening, that every physician is an educator, whether he will or no, and should study to be a good one. He works of necessity with a threefold object in view: to cure his patient; to leave him better able to cure himself another time; and to establish systems of treatment that shall reflect sound and liberal views. He must of necessity come into close personal contact with his patient, and may therefore, through the powerful influence of his own personality, make him narrow or suspicious, or unduly dependent on rules and mysteries; or, on the other hand, more reasonable, more self-reliant, more liberal, a firmer believer in his own genius, and the supporter of simpler creeds. The opportunity for usefulness is an enormous one; for I hold that to rid a patient of a tormenting delusion and to increase his power of resistance against debasing habits and thoughts is quite the equivalent of a successful operation for a painful disease, and needs as much skill and preparation. It is to the opportunities and responsibilities of this task, which should not be evaded, that I have tried to call your attention.

The physician, too, must call the community to his aid; for many of these disorders start in the imitation of inferior social customs and in the acceptance of narrow social traditions, and we may confidently hope that they can be eliminated in part through changes in public feeling such as an intelligent doctor may help to set on foot. The community is neither intentionally ignorant nor intentionally heartless. It adopts the easiest and nearest opinion, and is readily open to change. We gather at our annual meeting to gain strength from the contact with each other, as Autæus from his Mother Earth; let us separate again, each to be a centre for the spread of knowledge not only of those forces whose effects are to be measured by the microscope and the chemist's tests, but of those also which no chemist can estimate, but which may, nevertheless, work upheavals in social sentiment, as the water which trickles into the crevices of the rock may one day freeze and burst it asunder.[15]

Original Article.

PERITONSILLAR ABSCESS.[1]

BY FREDERIC C. COBB, M.D., BOSTON.

Peritonsillar abscess may be defined as a phlegmonous inflammation occurring in the tissue surrounding the tonsil. Its best-known synonyms are quinsy and acute phlegmonous tonsillitis. Widely different views as to its causation are given by various authors. Bosworth and Lenox-Brown are firm believers in its rheumatic origin, while others believe it to be due to the entrance of germs into the peritonsillar tissue resulting from acute tonsillitis. In the records of my cases, the question of rheumatism could not always be decided, but the results are as follow: Those having no history of rheumatism numbered 18, while those in which the history was doubtful were 19, and those having a clear rheumatic history were seven. As to the question of whether the quinsy was due to infection from the tonsil, we can only judge by examination of its condition at the time of the peritonsillar inflammation. It must be remembered that even when tonsillitis precedes an attack, the tonsil may have cleared up when examined four or five days later, the time when peritonsillar cases usually present themselves for examination. In 24 of my cases there was no distinct lesion of the tonsil recorded, while in 13 the tonsil was clearly pathological, being either swollen or covered with exudation, while in seven only could no lesions be found. As to age, the youngest of these cases was seven years old, while the oldest was fifty-five; the largest number of cases, or 29, were between the ages of ten and thirty, those occurring between thirty and forty being only five, those below ten years, but three.

Pathology.— The pathology of quinsy does not differ from that of any pus formation in cellular tissue elsewhere, the especial point of interest being found only in the study of its anatomical relations. Most authors speak of the inflammation as localized in the tissue immediately surrounding the tonsil. Chiari alone suggests that pus is to be found in the pharyngo-maxillary space. This space is well described by Zuckerkandl in his paper on the "Relation of the Tonsil to the Great Vessels." The pathology of peritonsillar abscess can be understood only by an anatomical study of the tissues surrounding the tonsil. The tonsil is bounded in front by the palatoglossus or anterior pillar, behind by the palatopharyngeus or posterior pillar, some of the fibres of which pass around it in such a way as to form a kind of sling. Its inner side is free, while on the outer it is in relation with the amygdaloglossus and the styloglossus, which are small muscles, and some fibres of the posterior pillar or palatopharyngeal, as heretofore mentioned. Directly outside of these few small fibres we find a hard fibrous-tissue wall about one millimetre in thickness from which fibrous septa run into the tonsil. On removing this tissue we come upon the superior constrictor of the pharynx, a muscle of much greater size than those just mentioned, and, continuing outwards, upon the buccopharyngeal fascia which lines its external surface. This fascia forms the inner wall of the pharyngomaxillary space, a cavity of considerable size when dilated. This space is described by Linhardt as a cavity filled with connective tissue and fat between the side wall of the constrictor, the internal pterygoid and the upper vertebræ, containing in its posterior part the great vessels of the neck. It was left to Zuckerkandl to show that this space was divided into two smaller ones by the styloglossus and stylopharyngeus muscles. These form a partition wall, back of which, in the rear of the space and behind and to the outside of the tonsil, lie the great vessels of the neck. The extent and appearance of this space is well shown by a cross-section of the head at the level of the teeth and the lower jaw taken from Testut's "Anatomy" (Fig. 1). It will be seen that the space extends nearly to the angle of the jaw by a prolongation between the pterygoid and the superior constrictor muscle. This explains why abscesses sometimes break near the wisdom teeth. The walling off of the posterior portion by the muscles spoken of is not, however, so clear in the diagram as it is on dissection of the parts.

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[1] Read before the American Laryngological Association, May 22, 1899.

[15] I am aware that an account of "mental therapeutics" could make no claim to completeness, even in outline, if it did not discuss the limits of action of this agency. Nevertheless, this part of the subject is too large to handle briefly, and too important to dismiss summarily. I therefore leave it for another occasion, and content myself with a reference to the treatment of those affections which the general practitioner must treat on the lines here indicated, if he wishes for success.

In order to assure myself that this partition was efficient, and also to trace the direction of least resistance to the passage of fluid in this space, I injected the cadaver, through the tonsil, with wax, passing the point of the needle well through the constrictor muscle into the pharyngomaxillary space. The result was gratifying, the injection passing in quite easily and giving the palate a very characteristic appearance of peritonsillar swelling. After allowing the wax to harden, a cross-section of the part was made just below the hard palate, and the route of the injection traced (see Fig. 2, with accompanying diagram, Fig. 3). It was found to have filled the space extending along the lines spoken of in Testut's diagram, toward the region of the teeth anteriorly as well as into the soft palate, or as far as its junction with the hard palate. Figure 2 corresponds with Figure 3, the dark spaces showing clearly, after the wax has been removed, the pharyngomaxillary fossa, the muscles and vessels of which are outlined. The injection did not extend into the space occupied by the great vessels in the rear of the pharyngomaxillary space, but it was stopped by the diaphragm formed by the styloglossus and the stylopharyngeus muscles. On removing the wax from the pharyngomaxillary space, a deep cavity was found extending not only beneath the tonsil but also above into the soft palate. The distended cavity could have contained three or four drachms of fluid easily. The presence of pus in this space would, it seems to me, explain the usual phenomena of peritonsillar abscess. In order to reach the posterior pillar, pus must force its way either through the soft palate from the upper part of the space and so infiltrate the pillar, or it may pass through the superior constrictor above or behind the tonsil directly into the pillar. The portion of the constrictor at which least anatomical obstruction was found appeared to be just above and below the tonsil, between the anterior and posterior pillars. It is to be noted that the fibres of the anterior pillar and those of the constrictor cross each other at an angle, a fact which may explain the occasionally ineffectual results of puncture of the abscess.

It is not of course claimed that all abscesses arise in this space, since removal of the tonsil sometimes exposes an abscess cavity at its base, but it is claimed that many cases of peritonsillar abscess owe their clinical appearance to the accumulation of pus in the pharyngomaxillary space forcing both the tonsil and peritonsillar tissues forward and inward. If pus were situated between the tonsil and the pillars, it would force the pillars outward and the tonsil inward at the same time, yet we usually find the tonsil occupying its normal relation to the pillars, the whole being, as I have said, pushed inward and forward. The very large amount of pus often found in these abscesses is, it seems to me, too great to be accounted for by its presence in the small areolar space at the base of the tonsil. Assuming that this space is the seat of the pus formation, it would seem natural that it should sometimes force its way backward among the great vessels in the neck in spite of the septum already described. Clinically such cases have been recorded. Bosworth cites a case reported by Reid[2] in which pus burrowed along the vessels into the mediastinum; another by Kiemann[3]; and a third by Velpeau[4] and Beraud, in all of which the pus had burrowed along the vessels into the cellular tissue of the neck, sometimes extending into the mediastinum, in two of the cases causing a pleurisy.

Symptoms. — The symptoms of peritonsillar inflammation observed in my cases have not differed from the clinical picture. Patients usually presented themselves between the third and sixth day, with great increase of saliva and complaining of great, usually unilateral, pain on swallowing. The voice was dry and thick, the temperature always considerably above the normal. The duration of most of the unpunctured cases was seven days, but occasionally one lasting ten days or even two weeks was encountered. The soreness, however, from which the history of the beginning of the peritonsillitis was derived may have dated from an acute tonsillitis preceding the abscess formation. In one case pain existed before any peritonsillar swelling appeared, and it was not until two days after that the peritonsillar swelling became noticeable. In none of the cases were there symptoms of the extension of the swelling beyond the fauces.

Treatment. — Almost all the cases presenting themselves for treatment were so far advanced that it seemed hopeless to try to abort the abscess by salicylates, aconite or guaiac. Indeed, early experience with acute peritonsillitis had not given me much encouragement to pursue this treatment. The main and most important question seemed to be, when and where to open the abscess. The usual point selected was in the median line above the tonsil between the root of the uvula and the gingivopalatal fold. When incision was made here it often happened, even after the most generous opening, that the wound closed, and that twenty-four or thirty-six hours later the abscess ruptured elsewhere. In such cases pus was not seen to ooze from the location of the puncture, but either the opening could not be found or pus exuded from between the pillars, usually above the tonsil. All the cases, of course, could not be followed, but the average date of relief in the cases punctured was almost exactly that of those unpunctured, which was a fraction under seven days. The closure of the punctured cases seems to me to be due to the differing direction of the muscle fibres of anterior pillar and superior constrictor. When the knife passed into the wound these layers were in abnormal relations to each other on account of the tension caused by the gagging movements of the throat; when the throat again became quiet the muscles assumed their normal relation, the openings sliding over each other so as to close the vent made by the knife. It was noticed that wherever a yellow spot in the palate seemed to indicate the pointing of the abscess relief after incision was instant and persistent. The explanation of this, it seems to me, is that the muscles were here glued together by the inflammatory exudation in such a way as to prevent the riding-over motion spoken of. By far the most usual point of passage of pus was found to be between the pillars of the fauces above the tonsil, suggesting that to puncture in this locality would

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[2] Medical and Surgical Reporter, Philadelphia, 1888, vol. xlix, p. 387.
[3] Wien. med. Presse., 1882, vol. xxiii, pp. 1, 520.
[4] Manual de Anat. Chirurg., Paris, 1862.

Fig. 1.

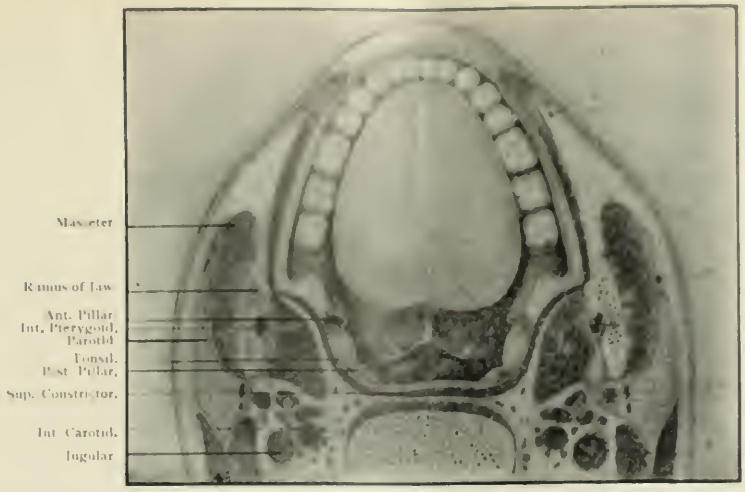


Fig. 2

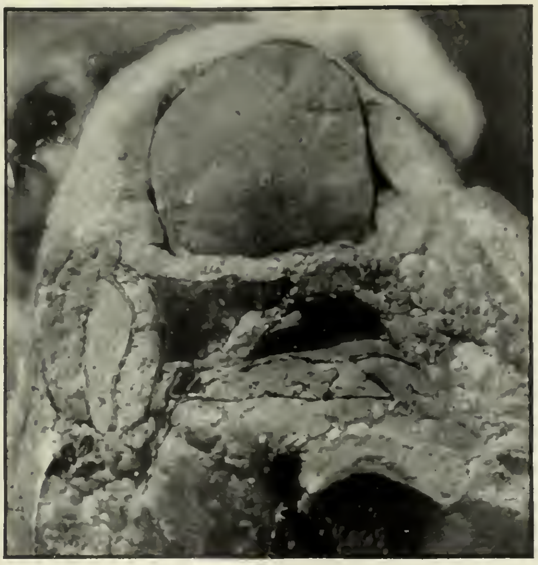
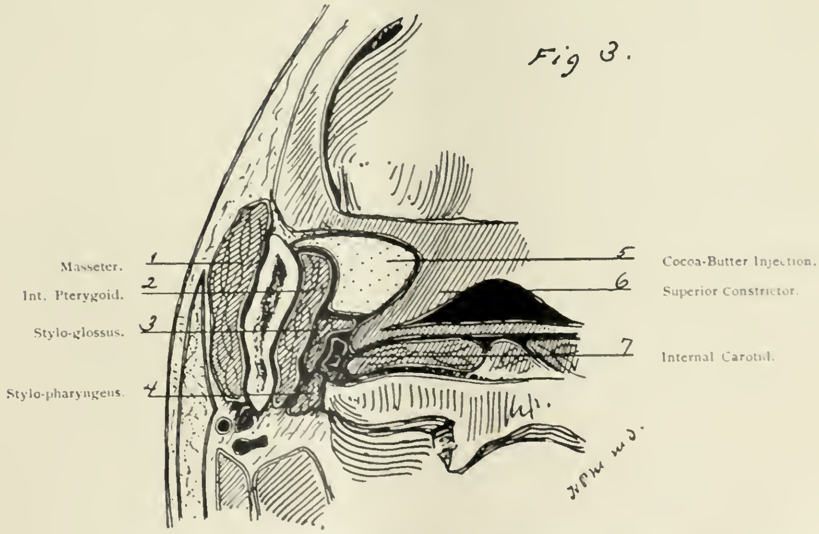


Fig 3.



Transverse Section of the Head slightly below the Hard Palate.

be following nature's indication. The danger from hemorrhage of such a puncture would not be great, since the large vessels lie in a plane posterior to that of the posterior pillar. The knife used should be a right-angled one in order to avoid passing this plane.

Summary.—The whole number of cases examined was 44.

(1) No causative relation could be proved to exist between rheumatism and peritonsillar abscess.

(2) An acute inflammatory condition to the tonsil was found to exist in a sufficient number of cases to suggest that it may be the cause of the infection to the peritonsillar tissue.

(3) A study of the pharyngomaxillary space shows: (*a*) that its injection with wax on the cadaver may produce an appearance similar to the peritonsillar abscess as seen clinically; (*b*) that its distance from the surface of the palate may account for the depth of the puncture often needed in order to obtain pus; (*c*) that the cross action of the muscles covering the space seems a sufficient reason for the closure of punctures made into it; (*d*) that the supratonsillar fossa and the infratonsillar space offer the surface for puncture most free from anatomical obstruction; (*e*) that puncture anterior to a plane passing through the posterior pillars cannot injure the great vessels if the knife be kept at all times anterior to such plane; (*f*) that the space is divided into two cavities by a septum formed by the styloglossus and stylopharyngeus muscles. This in most cases protects the great vessels from purulent infiltration. Failure of this septum to act explains the cases cited by Bosworth where pus passed along the great vessels into the mediastinum.

In conclusion, I wish to express my thanks to Professor Dwight, of the Harvard Medical School, for both advice and material, and to Dr. H. P. Mosher, for his excellent photographs and drawings, and for much valuable assistance in the preparation of specimens.

Clinical Department.

A CASE OF SEPTICEMIA TREATED WITH NORMAL SALT SOLUTION.[1]

BY CARROLL E. EDSON, A.M., M.D., DENVER, COLO.

During the past ten years increasing attention has been directed to the intravascular employment of normal salt solution in cases other than of hemorrhage. Since 1896 especially has its use been tried in cases of general sepsis of varying origin. The considerable and exceedingly interesting literature upon the subject was well summarized in an article by Dr. T. F. Reilly in the *Medical Record* of November 12, 1898.

I report the following case as a clinical contribution to the increasing number of successful cases that I may help, in whatever small measure, call attention to this ready and simple means of combating what has else been too often a prolonged and hopeless struggle.

I regret the absence of full bacteriological and blood examinations. I should not ask attention to an imperfect protocol were it not for the striking and suggestive lesson which the case affords.

C. M., age twenty-six, single, an electrical engineer, had been under my close observation for a year, during which time he had two typical attacks of follicular tonsillitis. The family and previous personal history have no bearing upon the illness under consideration. In 1896 and 1897 he had a severe and rather prolonged fever, which may have been typhoid, although reported not to have been. His habits and conduct of life had been exemplary and his health always good.

In the spring of 1898 he was much overworked, and from the first of May until his illness in November had in addition to overwork great business responsibility and anxiety. He was much run down and sleeping poorly. Early in November he suffered from a moderately severe attack of an infectious angina then epidemic in Denver. The throat was intensely sore and there was considerable glandular swelling in the neck. The tonsils were not more involved than the rest of the throat. There was no follicular exudation. No bacteriological examination was made, but the case was similar in every way to others during the epidemic in which cultures were made, and was probably due to a streptococcus infection. Recovery was slow, with great prostration. He returned to work too soon, against advice. During the next week at the office he complained of muscular soreness and weakness.

On November 24th his throat, which had been slightly uncomfortable, became very painful again and there was great backache, headache and high fever. During the next two days the attack ran a course similar to the first, save that there was more general pain tending to localize itself about the joints. On this account treatment by salicylates and alkalies was given, with anodynes and opiates. No relief was obtained. The muscular and joint pains became worse although there was little or no swelling. There was great difficulty in securing sleep; the temperature remained high, and it was evident that the illness would be prolonged.

On the 28th the condition became rapidly worse. While the temperature and pulse remained where they had been for several days, in the neighborhood of 101° and 110 beats per minute, the respirations rose to 35 and soon to 40. There was no conscious dyspnea, no local pleuritic pain to be distinguished from the great muscular aching everywhere present. Careful examination disclosed nothing more than a small area in the middle of the upper lobe of the right lung, with very slightly heightened percussion note and harsh and distantly exaggerated breathing. The heart was negative, and it may here be stated that daily examination never revealed any evidences of endo- or pericardial lesion.

For the next three days there was much intestinal distention, with a good deal of tenderness, which was not localized. There was some vomiting and troublesome belching. The bowels were finally opened by calomel, salines, and high enemata and the gaseous distention relieved by repeated enemata of asafetida mixture. During the rest of the illness there was fortunately no disturbance from the intestinal tract, and, with the exception of a few days during which there was slight febrile albuminuria, the urine remained normal.

The area of suspicious import in the lung did not increase and there was no development of any actual pneumonic process. There was lingering and rather shifting evidence of slight congestion over small patches in the upper right lung for a week or more. The respirations however remained continuously rapid and rather shallow. The pains rapidly became absolutely crippling. The knees, ankles, hands, elbows and shoulders were successfully and irregularly invaded.

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[1] Read before the Medical Society of the State of Colorado.

There was only very moderate swelling, which appeared to be not so much in the joints as an edema in the tissues about them. Over the backs of the hands this was especially noticed. There was at times a very faint blush over small areas, but never noticeable unless looked for. There was also very great tenderness over the muscles. Indeed, it was difficult at times to say whether the pain, which made it almost impossible to move or care for the patient, was caused so much by the motion of the joints as by the pressure upon the muscles. The best, though only slight, relief obtained was from painting the parts with 20 per cent. ichthyol and wrapping them in water with hot bottles outside.

There was almost absolute insomnia, and the few moments' rest obtained was marked by incessant delirious conduct of business affairs. For a while trional gave a little rest, but codeine, chloral, morphine, laudanum or even hydrobromate of hyoscine had little effect in quieting the increasing restlessness, and none procured any satisfactory sleep.

The condition on the 5th of December was most desperate. The temperature chart did not convey any idea of the illness, and is not reproduced for that reason. There was marked emaciation and a frightened look of distress upon the ashy face which can hardly be described. The decubitus was one of complete muscular relaxation, the limbs helpless from the pain, which made the patient moan if he saw any one even approach the bed. The temperature remained steadily between 101° and 102°, the fever being slightly higher on alternate days; the pulse, varying from 110 to 118, was weak, small and compressible, but regular. The respirations remained constantly rapid, about 35, but from time to time there were periods of great distress in breathing unexplained by any discoverable cause. There was very great restlessness, amounting to jactitation much of the time, insomnia and delirium at night, and by day a curious mental state of apparently clear cerebration which, however, was not real. Close watching showed that the mental processes were decidedly clouded and the patient has no recollection whatever of the events of some ten days. There were no rigors or marked fluctuations in temperature, but the man was frequently chilly. Considerable soothing followed hot alcohol baths. Despite nourishment, which was well taken, and abundant stimulation (sulphate of strychnine, one-thirtieth of a grain subcutaneously every four hours, and five drachms of whiskey every two hours), the patient was evidently fast succumbing to the septic invasion.

The injection of normal salt solution into the tissues seemed to offer slight hope and its use was approved by Dr. W. H. Bergtold and Dr. C. A. Powers, who saw the patient with me. At four o'clock on the afternoon of December 5th Dr. Powers injected sixteen ounces of hot sterilized salt solution into the subcutaneous tissues about the breast. Following the injection there was perhaps slight improvement in the restlessness and several quiet naps of from ten to forty minutes. There was an abundant and considerably increased flow of urine in the next twelve hours, nearly double the amount of the corresponding length of time before. Between 12 and 2 A. M. there was a period of very great restlessness and excitement, during which time it was very difficult to keep him in bed.

The morning of the 6th there was no especial improvement in the temperature, pulse or respiration, but the pain was decidedly less and the general condition seemed to warrant a continuation of the treatment. At 8 A. M. twenty-six ounces were injected slowly into the median cephalic vein. The injection caused great distress, a pulse of 120 and respirations of 40, with marked excitement for a short time, and profuse perspiration. Two hours later there was a sharp rigor lasting twenty minutes, the temperature rising from 100.6° to 103.8°. Following this the temperature fell gradually to 99.8° at 4 P. M., the lowest since the beginning of the illness. During the day the patient was much quieter than he had been and there was no note of any pain. The legs and arms were much less tender and the hands were used a little. At 8 P. M. the temperature rising to 100.8°, and there being a little return of pain, a third injection of eighteen ounces was made, this time under the pectoral muscles, as there seemed less disturbance and equally good results from intracellular injections. Following this there was no chill and only moderate sweating. A good deal of quiet sleep, with only light whispering delirium, was had during the night.

On the 7th there was much relief from pain in the morning, but during the day the restlessness, delirium and pain returned, and at 4 o'clock P. M. the temperature, pulse and respiration all being higher than for two days, a fourth injection of fourteen ounces was given. All the symptoms at once abated, the pain and the tenderness first. The pulse rate became lower and the quality better. The general expression of improvement was more marked than the signs of the chart.

On the 9th there was a rise of temperature which led to the consideration of further saline infusion, but this was postponed for signs of increasing pain, which did not develop. A similar rise on the 13th also proved a false alarm.

The subsequent history has nothing of general interest. The mild delirium lasted a long time, as did moderate fever and great weakness. The emaciation was extreme, and the patient absolutely unable to help himself simply from muscular weakness. Convalescence was necessarily slow after such an illness, but was uninterrupted, and by the first of June, 1899, complete.

The interesting features of this case were, *first*, the nature and location of the septic process. While I lack all bacteriological proof, I am inclined to think it was due to the streptococcus for the following reasons: It followed directly upon the recrudescence of an infective angina which was clinically the counterpart of others in which the streptococcus was found, and the absence of any suppurative process. A general typhoid infection was ruled out by the clinical picture of the illness, the absence of Widal's reaction and the probable typhoid character of the illness a year before. Nor was the picture one of a pneumococcus infection in the lungs. There was no consolidation, no characteristic expectoration. That the focus of infection starting from the throat became secondarily located in the lungs I am inclined to believe from the coincident appearance of the profound sepsis, the very rapid breathing and the signs pointing to moderate congestion. The shifting nature of these signs was also a point in favor of a streptococcus invasion. There may have been some localization in the joints, but the pains seemed rather those of secondary irritation from absorbed toxins. This can of course be only conjecture.

Secondly, the very noticeable relief obtained by use of the salt solution. The lessening and cessation of pain, the quieting and clearing effect upon the brain, and the improvement in the pulse and whole general appearance were very striking. That this was not a chance coincidence seems proved by its immediately following four separate injections, the symptoms having returned after the lapse of a number of hours. Certainly up to the time of the first infusion the patient was steadily and rapidly failing; from that time began his recovery.

Lastly, the ease with which large amounts of salt solution can be injected under the skin if the fluid be allowed to run in slowly with gentle massage, and the quickness with which it is absorbed. So far as I could see, in this case the relief from the subcutaneous injections was quite as marked as from the intravenous infusion, while the disturbance seemed less. Other observers, however, have reported similar excitement from the subcutaneous use of the fluid. The sweating and free urination were noticeable after each injection.

Should I be so unfortunate as to see another so severe a case, I would make early use of repeated saline infusions, which can certainly in the light of our present knowledge do no harm, and which offer such encouraging results.

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Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY FRANK A. HIGGINS, M.D., BOSTON.

(Concluded from No. 3, p. 64.)

RETRODISPLACEMENT OF THE PREGNANT UTERUS.

Storer[5] in discussing the subject says that there are no symptoms of consequence until about the tenth week, and they may be further delayed in a large pelvis. Spontaneous cure is limited by four things, adhesions, the sacral angle, the character of its displacement and its degree. The patient is often unaware of trouble until pressure symptoms come on. Urinary symptoms are apt to be the first thing noticed, more or less severe interference with micturition preceding actual retention. This is due to the upward pressure of the cervix on the urethra in versions of the uterus, and to a dragging on the urethra in flexions of the uterus. Constipation is also an early symptom. Upon examining a case of incarceration an exaggerated discoloration of the vulva is seen, and an extreme bulging of the perineum, which in one case, the result of a violent effort, caused a central rupture of the perineum and protrusion of the fundus. In flexions the cervix is accessible and not softened as usual in pregnancy, but there may be enormous hypertrophy. In uterine versions the cervix disappears behind the pubes often out of reach. The diagnosis is often very difficult. The displacements may become corrected as pregnancy advances, or pregnancy may go on to full term, the uterus becoming sacculated. Abortion more frequently occurs, although the retroflexed uterus has difficulty in expelling its contents and the fetus may be retained months after its death. If abortion does not occur grave results generally ensue without treatment, and 77 cases of death have been collected, mainly from sepsis, uremia and rupture of the bladder. Treatment is, first, to empty the bladder, which is often a difficult matter, and then attempts at replacement by manipulation are made. These consist mainly of depressing the cervix by traction from below and by pressure from above with fingers behind the pubes and at the same time pressing upwards on the fundus to release it, causing the uterus to revolve upon itself rather than attempting to force it up bodily. Elastic pressure in the form of water-bags in the rectum or vagina has been of service. If taxis fails, the patient's condition is good, and no urgent symptoms present, an expectant policy is advised up to the end of the fourth month, using careful packings, the knee-chest position, etc. Finally, an abdominal operation results in easy replacement without any great danger to the mother and with a better prognosis for the child.

OPERATIONS DURING PREGNANCY.

Noble[6] reports the results of his experience, which embraces twelve cases: one of myomectomy, one of hystero-myomectomy, one of appendicitis with abscess, one of intestinal obstruction after labor, and one of fistula in ano. The patient upon whom myomectomy was performed aborted, the operation having been undertaken for supposed ovarian tumors. He considers the operation not justifiable under ordinary circumstances during pregnancy. One other patient aborted, but the ovum was already dead before the operation, which only hastened the inevitable. All of the ovariotomies did well; in none of them was there the least difficulty in performing the operation, and in every way the patients made as good recovery as though they had not been pregnant. His experience corresponds with that of other surgeons and is in happy contrast to the results of the let-alone practice which so often leads to difficulties in delivery, and unless prompt and intelligent operative measures are taken, to the bruising, infection and necrosis of the tumors, with peritonitis subsequent to labor. In the case of intestinal obstruction, which proved fatal, the operation was complicated by the seven months pregnant uterus, which greatly increased the difficulties of finding the trouble in the abdomen and in dealing with the adherent bowel after it was found. This leads him to believe that it would be wiser in such a case, when dealing with so serious a condition as obstruction, to promptly do hysterectomy and get the big uterus out of the way, and then proceed in a systematic way to do whatever is necessary. He believes that all ovarian tumors which are recognized during pregnancy should be promptly removed even if quite late, as the risks of operation are much less than the risks of delay. Fibroid tumors should not be operated on during pregnancy unless for some very special reason. With reference to general operations in various parts of the body, while there is little danger of bringing on an abortion, yet he believes the indications for operations should be marked, that is, evidence should be present that the patient's life or health would be jeopardized by leaving the condition to continue until after labor.

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[5] Boston Medical and Surgical Journal, March 9, 1899.

[6] American Gynecological and Obstetrical Journal, April, 1899.

HYSTERECTOMY FOR PUERPERAL SEPSIS.

Goffe[7] says the question or even the propriety of hysterectomy for puerperal sepsis has yet to be determined, as there is no affection in which it is more difficult to lay down general principles of action. Two definite forms of puerperal sepsis are recognized, sapremia and septicemia. The former is the result of the absorption of toxins or ptomaines secreted by germs growing upon a putrefactive focus. These are the products of the less virulent forms of bacteria, and the progress of the disease depends largely upon the resisting powers of the patient. Such cases are characterized by a chill and a sharp rise of temperature early in their history and by offensive lochial discharge. They should be promptly curetted with antiseptic douches, free drainage of the lymph vessels kept up by catharsis, and the patients stimulated and nourished well. If the symptoms then are not arrested, but there are signs of constant infection, indicated by continual rise of temperature, tenderness over the uterus, chills and languor, the question of operative interference arises. If on the other hand the infection is that of the pure streptococcus, the curette has no place. It simply breaks down the resisting zone and opens the way for ready entrance of the bacteria and in the more serious cases it cannot do good at the time of recognition of the disease, as the invasion has already passed beyond its reach. The nature of the treatment must be such as to assist the resisting power of the uterus against the invasion of bacteria. Bumm, the German pathologist, found that under favorable conditions an inflammatory exudate is found around the seat of invasion, which, aided by the phagocytic action of the white corpuscles, prevents penetration of bacteria to adjacent tissues, and the process is thus limited to a circumscribed area. But in more severe infection, or with less resisting power of the tissues, the bacteria break down the protective zone, enter the lymphatics and veins, and toxins and micro-organisms are carried through the system. A case of puerperal sepsis at the Polyclinic is reported at length. Curettage was first performed and afterwards abdominal hysterectomy, uterus and broad ligaments removed *en masse.* The walls of the uterus were studded with collections of pus, also ovaries and tubes contained pus. The patient died of exhaustion following septic pneumonia on the thirty-sixth day after operation. The author questions whether the fatal result was due to the delay in the radical operation, and if not what measures, if any, might have been used to prevent the case reaching the condition where radical procedure was necessary.

THE EFFECT OF POSTURE IN DELIVERY.

Dickinson[8] at some length reviews the literature and the experimental work done on the effect of the Walcher, the Trendelenburg and the Mercurio postures in altering the size and shape of the pelvis. The literature of the subject is considerable and the opinions of the different authors greatly at variance, but his studies lead him to made the following deductions:

(1) Posture will notably alter the shape of the pelvis in late pregnancy.

(2) Increase in available room in the pelvic cavity as a whole cannot be brought about.

(3) To obtain the longest conjugate at the inlet, the hanging dorsal posture is to be employed. The gain is nearly one centimetre.

(4) To obtain the longest conjugate at the outlet, the full-flexed dorsal posture is necessary. The increase promises to be from one and five-tenths to two centimetres.

Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

SECTION OF OBSTETRICS AND DISEASES OF WOMEN.
MEETING AT COLUMBUS, O., JUNE 6, 7, 8 AND 9, 1899.

THE afternoon session was the first held by this Section.

DR. A. H. CORDIER, of Kansas City, Mo., thanked the Society for the honor conferred on him in choosing him its chairman, and in the Annual Address commented on the progress of gynecic surgery in the United States. There has been a resurrection of old methods, which have been made safe and life-saving. At the present time the adaptability of the human intellect, enabling it to accept the good and to reject the useless, is best evidenced in the medical profession. In commenting on the advances in the department of gynecology he spoke of the surgical treatment of cancer of the uterus, which has been so unsatisfactory in many respects; yet early surgical intervention is justifiable. Calcium carbide has proved no more useful for this terrible disease than many other remedies that have been advocated. In cancer early and correct diagnosis is most important. The early recognition of gonorrhea and the avoidance of uterine sounding diminish the number of cases of pelvic suppuration. A few years ago vaginal enucleation of the uterus and adnexa for pus practically caused a war in the profession. In operating for abnormal conditions both the vaginal and the abdominal methods have their good points, but he chose the abdominal route as being more complete and almost perfect. In the treatment of the insane the neurologist and gynecologist should work together. In operating on the insane relief of pain and better general health only should be promised, and the alleviation of mental condition hoped for. Ectopic gestation is more frequently recognized than formerly. All cases should be operated on as soon as recognized, unless gestation be near its normal termination, when it is a question whether to wait or not for the viability of the fetus. The abdominal route should be preferred in the treatment of extra-uterine gestation. Serious hemorrhage may occur by vaginal incision, which would necessitate celiotomy for its control. The loss of the child in cases of contracted pelves can now be avoided by the selection of obstetric operation. Post-partum douches are not only useless but harmful, and should only be employed in women with gonorrhea, for the protection of the child's eyes. The origin of puerperal sepsis, and its production by unclean hands and instruments, are more clearly understood. Serotherapy promises, in the near future, to be of much use, and, in his opinion, puerperal fever may be relieved by immunizing and curative doses of antistreptococcic serum. Credé's ointment of the soluble silver salts has produced very remarkable results in the hands of some observers, results that have been so sudden as to astonish the physician. Time alone will determine the usefulness of this method in puerperal sepsis.

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[7] Medical News, January 28, 1899.
[8] American Journal of Obstetrics. June, 1899.

Dr. **Augustus P. Clarke**, of Cambridge, Mass., read a paper on

PELVIC TUBERCULOSIS,

in which he remarked that the sources of contamination of the serous tissue are numerous. The principal avenues of entrance are along the loins from the intestinal tract. The morbid conditions resulting in adhesions of a portion of the intestine to the Fallopian tube and the subsequent ulceration or perforation of the united surfaces furnish, no doubt, one of the means by which the bacilli reach the adnexa. From the intestine to the mesentery, and from that point to the peritoneum and to the uterine appendages the bacilli may pass uninterruptedly. In many cases, if not in most, tuberculosis of the genital tract occurs in connection with the general dissemination of the disease in the other organs. This not infrequently takes place in childhood and before puberty. Tuberculous lesions of the adnexa originating through the blood supply, though occasionally observed, cannot be regarded as a common process. The three forms of the Fallopian tubes usually mentioned may very properly be reduced to two classes, the miliary and the fibroid varieties. Miliary pelvic tuberculosis may not pass beyond the first stage, or the disease may remain latent for varying indefinite periods. It is in such cases that a mere abdominal incision may be followed by apparent recovery, but it is not safe to regard the seeming recovery that follows celiotomy resorted to for tubercular peritonitis as being permanent in results. The chronic form of fibroid tuberculosis, in which the connective tissue is greatly increased, may become arrested in its course or in recovery. The connective tissue in its embryonic development having, of course, its origin in the same fibrous layer tends generally to the production of conservative processes. The preternatural development of the fibrous tissue in the tube, ovary, or other pelvic structure exposes the mass to the danger of becoming, through its diminished vitality, the focus of malignant degeneration. Observation proves that the presence of bacilli in the testes of husbands of women who are found suffering from tuberculosis of the Fallopian tubes should not be regarded as being positive evidence that the disease has been the result of transmission of bacilli from the husbands, for such infection of the male genital organs may have first been imparted from the female.

Dr. **H. A. Kelly**, of Baltimore, feels sure that coitus has nothing to do with tuberculous infection, and has never seen a case due to that cause. The tubes are not frequently the site of the disease, although the uterus is affected more frequently than is generally supposed. In three cases he has made diagnosis by microscopic examination of scrapings from the uterine surfaces. Tuberculosis of the cervix is very rare, and he has seen one instance only. In operating, all diseased tissues should be removed. The tuberculous uterus should be extirpated. Retroperitoneal glands should be carefully examined.

Dr. **E. E. Montgomery**, of Philadelphia, reported a case of tuberculous disease of tubes and ovaries occurring in a girl thirteen years of age, the condition being associated with diverticulum of the bladder. The patient had suffered from inability to retain urine. The tuberculous appendages were removed. The bladder was irrigated later, and a decided improvement was noticed.

Dr. **Goldspohn**, of Chicago, believed that the removal of caseous tubes renders the development of tuberculous lesions elsewhere less probable. He believes that the uterus and part of the ovary, if possible, should be permitted to remain.

Dr. **C. G. Frederick**, of Buffalo, N. Y., reported a case of double tuberculous disease of the appendages in which he performed supravaginal hysterectomy. The patient had a tuberculous abscess developing later, which was opened by the vagina, and general pulmonary tuberculosis developed later. Ruth reported a case of large ovarian tumor, complicated with tuberculous omentum in which pulmonary tuberculosis developed.

Dr. **Cumston**, of Boston, spoke of pulmonary tuberculosis coexistent with tuberculosis of the vermiform appendix, and gave evidence that the infection did not have to come through the vagina. He does not remove the tubes unless they are absolutely degenerated, but opens the abdomen and thoroughly irrigates, and, as a rule, permits the tubes to remain.

Dr. **James F. W. Ross**, of Toronto, discussed the difficulty of diagnosis in these cases of miliary tuberculosis. Hemorrhage is often a symptom of tuberculosis of the appendages. It occurs most frequently in young, unmarried women and cannot come from infection through the vaginal tract. Marvellous cures result from simple celiotomy and irrigation.

Dr. **J. R. Eastman**, of Indianapolis, Ind., called attention to the importance of diagnostic curettage and microscopic examination, with isolation of the tubercular bacilli.

Dr. **D. Tod Gilliam**, of Columbus, reported an interesting case of calcareous degeneration in a tuberculous condition in which the calcareous plates were removed and symptoms relieved.

Dr. **C. A. Reed**, of Cincinnati, reported a case of general miliary tuberculosis of the intestines. One year later pulmonary tuberculosis developed.

Dr. **Dorsett** advocated the injection of antiphthisic serum and reported a case in which it had been used successfully.

GYNECOLOGIC CONSIDERATIONS OF THE SEXUAL ACT.

Dr. **Denslow Lewis**, of Chicago, Ill., read this paper. He emphasized the fact that man first seeks to live, then he seeks to make others live. Medical men in their deliberations should take cognizance of this great factor in human life. Lewis believes that sexual matters should be taught the young at an early age. Girls particularly should know the usual consequence of sexual intercourse. Their modesty may be shocked but their virtue will be saved.

Papers by Dr. **John S. Pearson**, of Louisiana, Mo., on "Mothers of Yesterday, To-day and To-morrow," "Women of the Past, the Present and the Future," and by Dr. **Edwin S. Ricketts**, of Cincinnati, Ohio, on "Obstruction of the Biliary Ducts in Women," were read by title.

Dr. **Clinton Cushing**, of Washington, D. C., read the next paper on the programme, which was entitled

CHOLECYSTECTOMY.

Dr. Cushing assumes that the gall-bladder is not necessary to the health or well-being of the individual;

that it performs no physiologic function. The indications for surgical operations on the gall-bladder are: (1) Recurring attacks of biliary colic, with or without jaundice, whether the gall-bladder is enlarged or not; (2) enlargement of the gall-bladder whether there be pain or not; (3) persistent jaundice, which is preceded or accompanied by pain in the region of the gall-bladder with or without paroxysms resembling ague; (4) empyema of the gall-bladder or peritonitis in the region of the gall-bladder: (5) abscesses in region of gall-bladder; (6) when the gall-bladder is seriously diseased, as it is better than having it as a place for further accumulation of gall-stones or as a point of new inflammations.

THE ANATOMY OF THE ROUND LIGAMENT.

DR. J. WESLEY BOVÉE, of Washington, D. C., read this paper by title.

SECOND DAY.

WHAT SHALL WE DO WITH THE UTERINE FIBROID?

DR. D. TOD GILLIAM, of Columbus, read this paper by title.

DR. HENRY P. INGRAHAM, of Buffalo, read a paper entitled

SPONTANEOUS RUPTURE OF THE BODY OF THE UTERUS DURING LABOR.

In investigating 48,000 cases of labor, 12 cases of ruptured uteruses had occurred, five of these being traumatic and seven spontaneous. Most of the cases occurred in the practice of midwives. A large proportion of the cases occur among the foreign-born population. Many cases are unrecognized. The condition, however, is less frequent now than formerly, owing to the advances made in obstetric technic.

In the discussion which followed the paper, DR. GOFFE, of New York, said he thought many cases of uterine rupture were unreported. He reported a case in which death occurred without marked symptoms, in which the autopsy revealed complete rupture of the uterus, and also a unique case in which the uterus had been torn away by the vagina, it having been mistaken for the placenta and removed with the child.

DR. BALDWIN added four cases to the list of ruptured uteruses; in three of them death occurred.

DR. FITZGIBBON, of Milwaukee, in a paper entitled

UTERINE FIBROIDS,

discussed the varieties and position of these new growths. The purely myomatous tumor is rarely found. Various degenerative changes were described. The direct causation of these tumors is unknown. The colored race are very frequently affected. The symptoms were divided into (1) constitutional; (2) uterine; and (3) those due to pressure. Early diagnosis is sometimes difficult. Fibroids may be diagnosed as pregnancy, retained menses, flexions, malignant disease, subinvolution and inflammatory exudate, and these in turn may be mistaken for fibroid. Treatment may be non-surgical and surgical. Ergot is the best styptic, although hydrastis is often valuable, but the intra-uterine use of styptics is to be condemned. Electrolysis is not satisfactory. Surgical treatment is palliative, either the vaginal or abdominal route being used according to indications. Ligation of the uterine arteries and broad ligament is not advisable. Oöphorectomy has its uses in some cases. The intraperitoneal method of hemostasis is preferable. Myomectomy may be used in subserous fibroids. In section the abdominal incision should be made high to avoid injury of the bladder. Injury to the ureter is the greatest danger to be avoided. Three complicated cases were described in detail.

In discussion, DR. G. BETTON MASSEY, of Philadelphia, condemned the use of the term "electrolysis," meaning a chemical dissolution of the growth. He prefers the phrase "electricity applied by a careful technic." If results are not secured in a year let the case be turned over to the surgeon. The use of oxychloride of mercury at the seat of application is advocated. In hemorrhagic cases and small tumors he advocated the use of electric treatment.

DR. WM. H. WATHEN, of Louisville, Ky., condemns the extraperitoneal method of treating the stump in hysterectomy for fibroids, believing it to be unsurgical and unscientific. If the cervix is permitted to remain there is a possibility of degenerative changes in it. He believes electricity has no field in these cases and that it does untold harm. We should be conservative, but when the ordinary medical treatment fails, surgery should be employed. Myomectomy is the ideal method in these cases.

DR. T. A. REAMY, of Cincinnati, O., thinks that electricity has its uses. He has knowledge of 50 cases in which the symptoms have been relieved, and protests against a dogmatic condemnation of methods other than surgical.

DR. H. D. MARCY, of Boston, is thoroughly satisfied that electricity produces no material benefit. He had invited Apostoli to demonstrate his method in his hospital, and watched the results, which were unsatisfactory. The consensus of opinion in two continents is in favor of the surgical rather than the electrical method.

DR. ALBERT GOLDSPHON, of Chicago, believes that electricity relieves the pelvic hyperemia, and that this result can be obtained without the use of an electrode in the uterine cavity, or an invasion of the endometrium. The extra-uterine method of electrical application is the best. In hysterectomy he prefers complete removal of the uterus.

DR. JOSEPH R. EASTMAN, of Indianapolis, believes that the delay occasioned by using electricity is detrimental to the patient and that the surgeon is best qualified to decide which cases should be treated surgically and which electrically. The use of electricity is exceedingly limited. The selection of method is to be suited to the individual case.

DR. PALMER thinks that the treatment must be adapted to the individual case. A study of the history of the case must be made. The use of medicines is very unsatisfactory, but ergot and hydrastis are the two most useful drugs we possess for the condition. He considers Baer's operation the best to employ when operation is advisable. Curettement does good in many cases. He believes it will arrest the growth and diminish the size of the growths.

DR. J. WESLEY BOVÉE, of Washington, advised the application of any method that will relieve the individual case, and also directed attention to the danger of curettage in these cases, sepsis occurring afterwards.

DR. JOHN B. DEAVER, of Philadelphia, in his paper on

INDICATIONS FOR AN OPERATIVE TREATMENT OF POSTPUERPERAL SEPSIS,

said that the frequency with which postpuerperal sepsis occurs even at the present time, with our knowledge of asepsis in surgery, calls for discussion. He reported a case of tubo-ovarian abscess with infection of the uterus following childbirth, in which the uterus, right tube and ovary, and left tube were removed. There are three forms of puerperal sepsis, from an anatomic standpoint, all of which are infections and due to abrasion of the mucous membrane lining the cervical canal and uterus. They are endometritial, metritial and parametritial. The most fatal form is the metritial form. It is characterized by multiple fossa infection and abscesses. The endometritial is the most amenable to treatment, namely, curettement of retained decidua and thorough disinfection of uterine canal. The parametritial form is most frequently mistaken for so-called pelvic cellulitis. Puerperal sepsis is of two varieties: that due to putrefactive changes in the retained portions of the decidua or blood clots, and that which is the result of the introduction of micro organisms by means of denuded endometrium, through the sinuses, or as the result of injury to the external genitals following the use of instruments during labor. Dr. Deaver believes that the conditions frequently described as cellulitis and abscess originated from sepsis carried into the tube and through the tube into the pelvis, where the inflammatory exudate breaks down and forms an abscess which is circumscribed by an adventitious membrane so closely resembling peritoneum that operators pronounce it as such, and regard the case as one of abscess of broad ligament. He believes the curette is resorted to too often. It is an instrument that requires as delicate manipulative skill to use with safety as the lithotrite, and should be handled with the greatest care and gentleness. Two cases were reported in which the uterus had been perforated with the curette. In one case examination revealed the presence of a loop of intestine in the vagina. Celiotomy was performed and six inches of small bowel was found, semi-gangrenous, and devoid of mesentery. The perforation in the uterus was about the size of a five-cent piece. Supravaginal amputation of the uterus with removal of the tubes was performed, the involved portion of the ileum resected, and end-to-end suture with needle and thread performed, the abdominal cavity thoroughly irrigated and drained, but death occurred from peritonitis on the evening of the fourth day. The treatment of septic endometritis was dealt with. Dr. Deaver prefers mercuric chloride and carbolic acid to lysol as an antiseptic. Several cases of pelvic abscess were described which illustrated the valuable point that the early institution of so-called radical measures is true conservatism in surgery.

In the discussion which followed the reading of Dr. Deaver's paper, **Dr. Charles P. Noble**, of Philadelphia, said that he believes that usually injuries to the uterus can be quickly and safely repaired, and prefers doing so to hysterectomy in cases of perforation.

Dr. B. Sherwood Dunn, of Boston, Mass., emphasizes the use and abuse of the uterine curette. He has seen two total hysterectomies as a direct result of the use of the curette. Curettement is a delicate operation and should be done with scrupulous and rigid aseptic precautions.

Dr. Henry T. Byford, of Chicago, Ill., advocates the use of the finger to guard the curette, or to remove retained secundines from the uterine cavity. Thorough curettage is necessary to remove adherent shreds.

Dr. Dorsett thinks that not one general practitioner in fifty should be allowed to use a curette. It requires as much skill as the most delicate operation in surgery. He advocates thorough cleansing and drying of the uterus and the insertion of a suppository of from 20 to 40 grains of iodoform, and the use of a gauze drain protruding into the vagina in cases of sepsis.

Dr. Henry thinks none but a bungling operator would perforate the uterus with a curette. He uses pure carbolic acid to swab out the uterus and no drainage.

Dr. Haggard believes that although the curette may be sterile, yet the endometrium is not, and a sharp curette disturbs the barrier nature has provided. The finger and the Bozeman dressing forceps for cleansing the uterus, and drainage, with irrigation with a 40-per-cent. solution of alcohol at frequent intervals, are useful. He does not believe that iodoform gauze drains effectually.

Dr. Paddock believes that physicians who do not know how to use the curette should not practise obstetrics. Irrigation should be practised prior to curettement. The finger is not long enough to reach the entire uterine surface. The dull and not the sharp curette should be used.

Dr. T. A. Reamy, of Cincinnati, uses a lithotomy forceps deprived of its teeth, for exploration.

Dr. Chauncey D. Palmer, of Cincinnati, believes the finger is totally unadapted for emptying the uterus at term. He uses the dull curette after all abortions or after parturition at term.

Dr. Duff believes the same result is obtained by all methods, and discussed the etiology of puerperal sepsis. Many cases are caused by placenta succenturiata and placenta spuria. Many cases are overlooked and all placentas should be carefully examined and the uterus explored for retained fragments.

At the afternoon session a symposium on

VAGINAL VERSUS ABDOMINAL SECTION

was held. A paper entitled

VAGINAL OR ABDOMINAL SECTION IN PELVIC SURGERY,

by **Dr. M. V. Ball**, of Philadelphia, was read by title.

THE ADVANTAGES OF VAGINAL SECTION IN THE SURGICAL TREATMENT OF PELVIC DISEASE IN WOMEN.

Dr. J. Riddle Goffe, of New York, read this paper. He believes that thorough and complete work can be done by the vagina. Celiotomy is a serious thing. The objections are (1) stitches; (2) adhesive plasters, which are annoying; (3) binder; (4) abdominal scar; (5) danger of ventral hernia. Great diversity of opinion exists in regard to the closure of abdominal incision. By vaginal incision is implied not simply puncture, but a free incision, transversely, if necessary, and supplemented by incision posterior to the cervix, giving ample room for manipulation. Vaginal fixation has many objections. Goffe prefers the vaginal shortening of the round ligaments. He considers this the ideal treatment for retrodisplacements. No disadvantages during pregnancy occur and it is superior to suspensio uteri and the Alexander operation. The objections to the Alexander operation are many, because (1) of its limited applications; (2) ligaments are often absent or weak; (3) two unsightly scars are caused; (4) there is danger of hernia, which has frequently occurred subsequently. Retroversion is best treated by shortening of round ligaments through the vaginal incision. Diseased appendages may be removed, adhesions may be broken up, and malpositions corrected. Pelvic abscesses can be treated thoroughly, satisfactorily, and safely by vaginal incision. If both adnexa are destroyed total hysterectomy is indicated. The intestines may be injured, but this accident also occurs during abdominal operations, but less frequently in vaginal than in abdominal section. Ectopic gestation, ovarian dermoids, fibroid tumors of the uterus, may all be dealt with by the vagina. The pain is much less and the convalescence smoother than after celiotomy. The simplicity and facility and comfort of this method commend it to every operator.

TECHNIC OF SURGERY OF THE UTERUS AND ADNEXA PER VAGINAM.

Dr. William H. Wathen, of Louisville, Ky., who read this paper, said he believes that many cases may be treated equally well either by vaginal or abdominal section. The bisection of the uterus increases the value of vaginal section. After the uterus is bisected, each half may be brought outside the vulva. He has never wounded ureter or intestine by the vaginal incision, but has been less fortunate in operating by the abdominal method. The adhesions above often prevent the prolapse of the intestine into the vaginal incision. There is less danger of infecting the peritoneum, or of post-operative sequels than in celiotomy. Too many instruments are generally employed in doing vaginal hysterectomy, which prevents perfect surgery. One retractor is sufficient. In early tubal pregnancy the ruptured tube may be removed by the vagina, unless the peritoneal cavity is filled with blood. Wathen has operated on 35 cases of ectopic pregnancy by this method without an untoward symptom. Post-operative septicemia may be treated and its further invasion prevented by vaginal incision and drainage.

A paper by Dr. Joseph Price, of Philadelphia,

WHAT BECOMES OF THE PATIENTS AFTER VAGINAL CURETTAGE AND DRAINAGE?

was read by title, and Dr. Fernand Henrotin, of Chicago, contributed a paper with the same caption. He advocated vaginal incision. The conditions for which it is now performed were detailed. It is adapted to women with capacious vaginas and thick, adipose abdominal walls, or in case of cardiac weakness. The post-operative symptoms are so slight that many patients cannot believe any serious operation has been performed. The objection has been offered that these operations are incomplete, yet he believes that the operation by the vagina is ideal and truly conservative of function. Pus may be either intraperitoneal or extraperitoneal, and most frequently secondary to pyosalpinx. Diseased tubes may be better removed through the suprapubic incision, although pus may be evacuated through the vagina and cure follow. Ovarian abscesses may be treated by the vagina without removal of the ovary. Results depend upon the discrimination and skill of the surgeon. About 25 per cent. to 30 per cent. of cases of pelvic disease may be advantageously operated on by the vagina.

In the discussion, Dr. H. A. Kelly, of Baltimore, said he agreed with Dr. Henrotin's views on the subject of vaginal section. Opinions have been radically changed during the past few years. Segond had long before advocated these methods, which, at that time, we consider was operating in the dark. Dr. Kelly is an adherent of both methods, preferring the abdominal method in diseased conditions affecting the upper part of genital tract, that is, conservative operation on upper portion, and using the vaginal route for disease below. For pelvic abscess the vaginal route is the method *par excellence*, that is, in abscesses of ovaries and tubes, which are usually of gonorrheal origin. He gave statistics of 59 cases in patients from whom he had received letters, detailing the conditions a long time after operation. Of these, 39 were practically improved, showing very slight symptoms. Nine were still suffering some symptom. Four died, three from uremia, and from general infection. Some of these cases were operated on while in a critical condition. Many spoke of having only begun to improve six months or a year after operation, and several of the patients now well suffered greatly for the first months. Rectovaginal fistula occurred four times, the sac having ruptured into the rectum, and when puncture was done between rectum and vagina, became complete. Of these the fistula was healed in three cases and unhealed in one.

Dr. Joseph R. Eastman, of Indianapolis, is an advocate of the vaginal method in selected cases. In fibroid tumors the operation will depend on position of growth, whether it is pedunculated or not and the character of pedicle. He prefers the Sims position in working by the vaginal route, as he considers certain advantages are gained thereby. Small ovarian cysts may be removed after tapping by this route. Both routes have advantages, and selection will depend on the individual operator.

Dr. J. B. Murphy, of Chicago, believes that the patient should be cured by one operation, if possible; that after incision of a gonorrheal pyosalpinx through the vagina, and after the incision has been healed, subsequent stricture of tube will interfere with drainage of the tube, and the patient will suffer from much discomfort later. In case of postpuerperal infection abscesses that form may be cured by vaginal infection. The pathology and origin of abscess must be considered. He should advocate the abdominal route for infection in cavities lined by epithelial cells, and the vaginal route for abscesses in the connective tissue.

Dr. E. P. Davis, of Philadelphia, considers that the vaginal route is particularly useful when an abscess has formed. The uterus should be saved, if possible. He believes that the abdominal route is preferable in cases of gonorrheal infection.

Dr. Charles P. Noble, of Philadelphia, thinks that vaginal puncture is an unfortunate term. A large incision should be employed and is indicated. Very seriously ill persons may be saved that certainly would die if celiotomy was performed. In many cases pregnancy will occur subsequently. In the majority of cases he employs the abdominal method. He believes that the objection to the abdominal scar is very rare, as the style of women's dress has not changed so that it is necessary for this scar to be exhibited. Concealed hemorrhage may necessitate celiotomy to save patients after the vaginal incision. Many accidents to uterus, appendages or bladder may occur during the procedure.

Dr. C. A. L. Reed, of Cincinnati, said the value of such discussion is that it brings out the truth that these operations, formerly opposed, are but supplemental. A few years ago the edict came from England that all such conditions should be treated by the abdominal route. Then came from France, almost immediately, the word to attack all such by the vagina. We have since been able to recognize that perhaps there is a soul of truth in all things false, as well as a soul of good in all things evil. When to adopt one method and when the other is only to be determined clinically and upon the spot, and frequently after the initial steps in the operation have been taken. To presume to determine beforehand just what condition will be found and what procedure will be adopted presupposes a degree of diagnostic acumen which he does not claim to possess.

The following papers were read by title:

"Pelvic Inflammation," by Dr. O. Beverly Campbell, of St. Joseph, Mo.

"Lymphatics of the Peritoneum," by Dr. Byron Robinson, of Chicago, Ill.

"Surgical Significance of Certain Physiologic, Anatomic, and Pathologic Peculiarities of the Peritoneum," by Dr. H. D. Niles, of Salt Lake City, Utah.

Dr. Augustin H. Goelet, of New York, presented a paper on

TREATMENT OF ENDOMETRITIS BY DRAINAGE AND IRRIGATION,

in which he declared it was an error to regard every uterine discharge as evidence of endometritis and to treat such conditions by caustic and astringent applications which coagulate the discharge and defeat drainage by blocking the orifices of the glands. This and destructive curettage he designated unscientific. Hyperemia with hypersecretion, often mistaken for endometritis, reqires no local application to the endometrium, in fact is often converted into an endometritis by such treatment. The danger of inserting instruments into the uterus, either for the purpose of diagnosis, treatment, or for operations, when there is a so-called catarrhal endocervicitis, was pointed out. He declared that the staphylococci, streptococci and gonococci are often found in the cervical secretion when it is most inoffensive in appearance, and that their presence or absence can only be determined by microscopic examination of the discharge. He insists that this method of examination should always be employed in these cases before the cavity above the internal os is invaded, either for the purpose of diagnosis, treatment or operations within the uterus. In endometritis the disease is not confined to the surface, but has invaded the glandular structure beneath, and he believes the rational treatment is to free the orifices of the glands and drain them until the infective process is exhausted, at the same time employing repeated irrigation with some non-astringent, non-irritating solution to remove the expelled secretion from the surface and prevent migration of infective germs. This may be accomplished by a carefully executed curettage done in a manner not to destroy the mucosa, but merely for the purpose of removing projecting granulations upon the surface or superfluous tissue that may be blocking the orifices of the glands and preventing drainage. The dull curette with rigid shaft, he thinks, is sufficient, and the sharp curette should not be used upon the endometrium of the cavity in endometritis. It is both unnecessary and unwise to attempt to remove the entire mucous membrane, and caustic applications should not be used after curettage in these cases. They cause necrosis, and atrophy of the mucous membrane or agglutination of the sides of the cavity may result. He urges that curettage should only be regarded a preliminary step in the treatment and that more attention be given to the after-treatment, which he deems most important; this to consist of persistent drainage and irrigation until all evidence of disease, as revealed by microscopic examination of the secretion and inspection of the cavity by means of the uterine endoscope, has been effaced. He also urges endoscopic examination of the cavity, both before and after curettage; before, to decide the actual necessity therefor, and after, to determine the completeness or incompleteness of the work. In this way only may errors be avoided. He exhibited a uterine endoscope with a small electric lamp placed at the extremity of the tube for direct illumination of the interior of the uterus, after the plan of the Valentine urethroscope. A megaloscope is attached for bringing out more prominently the details of the surface.

Dr. W. Branham, of Baltimore, in a paper on

PAPILLOMA OF THE OVARIES, OMENTUM, AND UTERUS; OPERATION; RECOVERY,

reported a case in which the uterus, ovary and part of broad ligament were removed. Vaginal drainage was employed and recovery ensued. No recurrence had been noted. An interesting point was the presence of elevation of temperature as a symptom.

Dr. W. H. Humiston, of Cleveland, Ohio, read a paper on

CLINIC AND MICROSCOPIC DIFFERENTIATION OF SCLEROCYSTIC AND CIRRHOTIC DEGENERATION OF THE OVARIES AND CHRONIC OVARITIS.

He thinks the etiologic factor in these cases is unknown. The cirrhotic ovary is smaller than the normal, is hard and inelastic and deeply corrugated. The sclerocystic ovary is two or three times larger than normal and is globular rather than ovoid. The pathology, symptoms, diagnosis and treatment were discussed. Internal medication is very unsatisfactory, and Humiston knows of no way to relieve this class of patients except by castration. Much may be done for chronic ovaritis by general supervision and by gynecologic treatment. Pelvic massage and galvanism, with tampons soaked in ichthyol and glycerin carefully applied to exert a slight pressure, will in a few cases greatly increase the mobility of the adherent uterus and its adnexa and relieve to a great extent the dysmenorrhea and ovarian pain. Usually symptoms gradually decline after the menopause.

THIRD DAY.

Dr. H. D. Niles, of Salt Lake City, read a paper entitled

SURGICAL SIGNIFICANCE OF CERTAIN PHYSIOLOGIC, ANATOMIC AND PATHOLOGIC PECULIARITIES OF THE PERITONEUM.

He believes that free movement of the pelvic and abdominal viscera is absolutely essential to the healthful performance of their normal functions; that the very existence of pelvic and abdominal surgery, with all its possibilities for the saving of life and suffering, depends not upon ordinary surgical knowledge and skill, but upon the extraordinary inherent power of the peritoneum to repair injuries, oppose disease, and overcome infection. The methods by which the peritoneum exercises its protective functions are (*a*) exudative or reparative, (*b*) absorptive or eliminative, and (*c*) phagocytic. The local and general conditions that influence the protective and eliminative powers of the peritoneum warrant the following conclusions: (1) Lessened blood pressure encourages absorption and consequently favors phagocytosis; (2) a normal heart and healthy excretory organs capable of excessive functional activity are favorable factors in the elimination of the pathogenic germs; (3) the smaller the quantity the less the virulence, and the more general the distribution of the pathogenic bacteria the more likely the peritoneum is to dispose of them; (4) any *locus minoris resistentiæ* may retard or prevent absorption and encourage exudation and the formation of adhesions; (5) foreign bodies always act as irritants and produce adhesions; (6) all peritoneal adhesions retard absorption, first, by providing a convenient place for concealment of pyogenic bacteria, and secondly, by interfering with the normal mobility and functional activity of the peritoneum. Any interference with normal peristalsis is detrimental; (6) phagocytosis is vastly more effective when a large area of peritoneal surface is brought into contact with a diluted infection than when a limited area is compelled to oppose a more concentrated infection. Finally, the foregoing conclusions support the belief that pathogenic germs, regardless of their number or virulence, may always be safely disposed of, provided that the surgeon does his work promptly and completely and is able to secure conditions that are favorable for these natural agencies to exercise their full protective powers. Dr. Niles believes that peritonitis is always a surgical disease; that early operation should at all times be the one of choice; that complete surgery always promises more than incomplete surgery; that preparatory and after-treatment should include active and effective measures for the reduction of blood pressure and increase of the activity of the phagocytic, absorptive and eliminative functions, and that a small incision, with the least possible exposure in handling, complete removal of *débris*, avoidance of animal ligaments and sutures, perfect repair of the peritoneum, thorough flushing and no drainage, are all important factors in securing the co-operation of these natural agencies.

In discussion, Dr. Dorsett said he thinks flushing of the abdomen often distributes sources of infection throughout the peritoneal cavity, and is to be avoided.

Dr. Humiston thinks the chances of recovery are very much better after the completed operation. Gauze packing may be so placed that infection of general peritoneum may be prevented. He uses drainage very rarely.

Dr. B. Merrill Ricketts finds that adhesions occur even after complete and ideal operations. They are frequently present without symptoms being produced. He advocates as short an incision as possible in celiotomy.

Dr. Henry irrigates the abdominal cavity very thoroughly after operations for purulent collections in the pelvis. Several gallons of sterile saline solution must be used. To be effective large quantities of fluid must be employed. As a rule drainage is not necessary, and many cases that were formerly drained we find do perfectly well without it.

Dr. Frederick Holme Wiggin uses hydrogen peroxide and later saline solution for cleansing localized pus cavities. All raw surfaces should be covered and every effort taken to prevent adhesions. If a large quantity of the saline solution is left in the cavity, it mechanically prevents the agglutination of the intestines and lessens the danger of subsequent adhesions or intestinal obstructions.

Dr. Rufus B. Hall, of Cincinnati, in a paper entitled

MANAGEMENT OF PREGNANCY COMPLICATED WITH ABDOMINAL TUMORS,

discussed ovarian and uterine tumors during pregnancy. These cases occur frequently enough to excite the interest of the profession in this subject. In properly selected cases operation for these conditions is indicated during pregnancy. The danger of abortion following operation has been very much exaggerated. No definite rule can be formulated to determine which cases will or will not abort. Pregnancy favors the rapid growth of all uterine and most ovarian tumors. The pregnant woman is not in an ideal condition for operation. The responsibility of advising the patient is great. A case of pregnancy at four and a half months, complicated with an ovarian cyst and general peritonitis, was described. Operation was done, but patient died in a few days. Other illustrative cases were cited. When abortion occurs the danger to the patient is greatly increased. Women with fibroids rarely become pregnant, and the decision in regard to operation will depend entirely on the individual case. If possible, the patient should be tided over until the termination of pregnancy. The position of the tumor in uterine wall will determine the management of the case, as operation will almost always require sacrifice of the uterus and fetus.

In discussion, Dr. Rosenwasser advocated operations for ovarian tumors during pregnancy, but in fibroids the question is more diffcult to decide. Sepsis and hemorrhage are apt to occur after labor in these instances. Many die of septicemia.

Dr. Humiston, in small tumors without symptoms, waits for delivery. In myomas, particularly those involving the lower uterine segment, the only safe procedure is immediate operation as soon as recognized.

Dr. Ricketts related an instance of severe postpartum hemorrhage in a case of labor complicated with fibroid.

Dr. Massey thinks that if a powerful faradic battery were at hand at the time of delivery, the danger of post-partum hemorrhage would be effectually and certainly obviated. He asserts that one second would be sufficient to stop the hemorrhage.

Dr. Carstens thinks that pregnant women bear operation well. A patient who is conscious of the presence of a tumor, complicating pregnancy, is very much depressed by its presence, and this is an additional argument for operation.

Dr. Dorsett described a case in which the patient was successfully delivered in the knee-chest position. He thinks that the danger of rupture of the uterus would be very much increased by the use of the faradic current to control hemorrhage.

Dr. C. P. Noble, of Philadelphia, thinks the good results are due to the fact that these patients are not septic. He advises operation in all cases of ovarian tumors complicating pregnancy, and related a case in which one patient had had two ovarian tumors removed in two pregnancies. Dermoid or adherent cysts, particularly, should be removed, as gangrenous cysts are very serious complications. In regard to fibroid growths, his attitude is more conservative, and the conditions must be exceptional and extreme if surgical interference is employed.

Dr. Haggard related an interesting case of large adherent ovarian cyst successfully removed during pregnancy.

The following papers were read by title:

"Indications for Treatment in Tubal Rupture and Tubal Abortion Consequent upon Ectopic Gestation in the Tubes," by Dr. George Tucker Harrison, of New York.

"Treatment of Ectopic Pregnancy at or near Full Term, the Child Living," by Dr. L. H. Dunning, of Indianapolis.

"Data Concerning Deformities in Fetuses of Extra-uterine Gestation," by Dr. Andrew F. Currier, of New York.

(*To be continued.*)

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Recent Literature.

A Century of Vaccination and What It Teaches. By W. Scott Tebb, M.A., M.D. Second edition. London: Swan, Sonnenschein & Co. 1899.

The author of this book is one of the foremost exponents of the antivaccinationist party in England, a section of the population which, unfortunately, has increased in Great Britain.

The book is a sample of the illogical methods which have been put forth by the antivaccinationists from the times of Jenner down to the present day, since the great and convincing facts relating to vaccination are here persistently omitted, while the unimportant matters are highly magnified.

The following is an example from the introduction: "Right through the century there has existed a body of officials ostensibly paid to promote the practice of vaccination, but also, partly at least, paid to vindicate it theoretically, and to explain away its failures and its accompanying disasters. But for this State aid, vaccination would long ago have been consigned to the same limbo as has received a thousand other similar fads, which, fortunately for the public, have not secured official recognition and support."

This statement is sufficiently disproved by the example of the United States, where, until quite recently, vaccination has been practised almost exclusively by private physicians without State aid, and because of their unqualified confidence in the efficiency of their practice. They were only following in the footsteps of two great exemplars, the first American recipients of vaccine lymph from England, — Waterhouse in the North and President Jefferson in the South. The supposition that either of these men were acting from mercenary motives is preposterous.

The author's argument as to the possible conveyance of syphilis by vaccination is almost entirely drawn from an early period, before the introduction of bovine lymph, and hence has little weight at the present day.

His quotation in regard to the Montreal epidemic of small-pox in 1885 is incomplete, in that the fact that the mortality fell most heavily upon the unvaccinated French-Canadian population is kept out of sight.

Again the following statement in regard to vaccination in Germany (p. 235) is misleading. "It will thus be seen that, since the year 1834, there have been 7,505 cases and 291 deaths from small-pox in the German Army."

Now, the compulsory law in Germany, relating to the entire German population from which this great army is enlisted was not enacted till 1874, and from that day to the present there has been only one death from small-pox in the German Army.

Moreover the writer persistently ignores the most convincing argument in favor of vaccination, that is, the position of the entire German population in its comparative immunity from small-pox. Almost the only deaths which have occurred from this cause in Germany in the past quarter of a century are either those of foreigners who have crossed the border from partially vaccinated countries like Russia, Austria and France, after exposure at home, or of infants in the first year of life, who had been attacked before the legal age-limit for vaccination had expired.

It is refreshing to turn from such mischievous works as this volume to read the following declaration from the late Secretary of the Massachusetts State Board of Health, Dr. Geo. Derby.[1] It was written in 1871, and is as true at the present day as when first published.

"We may speculate about the potency of vaccine being exhausted in the human family, we may be surprised to find that people with good vaccine scars sometimes have small-pox, we may dispute as much as we please about the average period when re-vaccination may be considered a prudent safeguard . . . we may turn the vaccination question with ingenious skill, so that its many facets shall reflect a multitude of curious lights, and after all we find that we rest in a security against this most horrid pestilence unknown to former generations."

Laboratory Work in Bacteriology. By Frederick G. Novy, Sc.D., M.D., Junior Professor of Hygiene and Physiological Chemistry of the University of Michigan. Second edition. Ann Arbor: George Wahr. 1899.

A Manual of Bacteriology. By Herbert U. Williams, M.D., Professor of Pathology and Bacteriology, Medical Department of the University of Buffalo. Philadelphia: P. Blakiston, Son & Co. 1898.

Neither of these books deserves special notice. Their publication would seem to be due to the desire of these professors to provide a special text-book for their students. They are probably well adapted for this purpose, but they are inferior to other well-known works on bacteriology, and are not adapted for general use.

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[1] Third Annual Report of Massachusetts State Board of Health, Jan., 1872, p. 303.

THE BOSTON

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THE TENTH ANNIVERSARY OF CLARK UNIVERSITY.

The recent celebration of the tenth anniversary of the founding of Clark University at Worcester was rendered notable by the presence of a number of distinguished European scholars, among whom were three physicians to whom modern medical research owes much. These were Prof. Angelo Mosso, of the University of Turin, Prof. August Forel, of Zürich, and Prof. Santiago Ramón y Cajal, of Madrid. Each of them stands foremost in his special line of work, and those who were invited to attend their lectures must have come away with a deepened sense of the significance of research, both in its practical and theoretic aspects.

Mosso spoke on one of his favorite topics, namely, the relation of physical to mental development in the growing child. No doubt to many of his hearers his point of view seemed extreme in his insistence on the postponement of the rudiments of mental training to a relatively late period of the child's life, but no one could question the essential correctness of a theory which maintains the importance of a correct muscular training as a substratum for future mental development. It is an idea which is gradually, but surely, creeping into our educational systems, and one which is surely destined to result ultimately in increased mental efficiency.

Forel discussed certain phenomena of suggestion, and added the weight of his undisputed authority to the value of a mental treatment of a large class of ailments, a matter which all signs go to show must soon be taken up seriously and earnestly by the profession at large. We should cordially welcome all attempts made by men of broad training and scientific instincts toward a solution of what is sure to prove a therapeutic problem of great subtlety and extreme significance. As is well known, Forel has for many years been a recognized authority on "ants," as well as on man, and he also spoke at the meeting in question on certain of their habits and attributes.

About Ramón y Cajal centres a very peculiar and special interest. He represents a nation not noted for its medical scholars, and one to whom we have not in the past looked for scientific progress. He stands, therefore, almost alone among his people in his distinction of being the greatest living authority on many matters relating to the cerebral cortex. It is to him we owe the brilliant application of the Golgi method to the problems of nerve anatomy and a clear recognition of its significant implications, which have rendered possible our modern conception of the architecture of the nervous system. He spoke of his recent work on certain nerve cells.

At the conclusion of the series of lectures, which extended over several days, the honorary degree of LL.D. was conferred, among others, upon each of the physicians to whom we have alluded, a matter of added interest, inasmuch as the degree had not before been given by the University.

THE PRIVATE DISPENSARY.

The establishment of a private free dispensary in Chicago has given rise to the query in certain quarters as to whether such an innovation is consistent with American ideas of medical education and medical charity. It is claimed that private dispensaries will tend merely to increase the abuses which already exist, and about which so much has of late been said and written. The more opportunities the poor are granted to have their ills cared for free of charge, the more will they avail themselves of the privileges offered, to the detriment of those physicians who would welcome a fee, however small. It may also with reason be said that any greater hospital privileges will tend to decrease still more that self-respect which is already lacking to an alarming degree among the lower classes in our large cities. Whatever else happens, it is the duty of physicians, as good citizens, not to pauperize the community for any personal reason. Apart, also, from any moral question involved, it may be said that we already have enough dispensaries and to spare, which are quite able to care in the best possible way for the deserving poor.

In view of these arguments, which surely should carry weight, it is of interest to see if there is any other side to the question. As we know, for many years private dispensaries have been established, and are recognized, throughout Germany, and in them much admirable teaching and brilliant research are done. These *polyclinics* are for the most part conducted by men of ability and enthusiasm, who have failed for some reason to attain a hospital connection. The clinics are unassuming in outward appearance and make no special inducements to patients beyond the reputation of their conductors. Evidently such dispensaries subserve a double purpose, first, as centres at which disease may be systematically studied, and, secondly, where teaching may be done, often to excellent advantage. These are both, certainly, entirely worthy motives.

To a man who is bent on clinical research, and who thinks, also, he has a mission as a teacher, it would appear unfair that he be completely cut off from his ambitions by the fact that he can find no place at one of the established hospitals or dispensaries. To our mind there is no inherent reason why a multiplication of dispensaries should be an evil, provided only the motives for their establishment are worthy, and a rigid watch be kept against the abuse of privileges by their patrons. The moment such dispensaries were carried on recklessly or for unworthy and mercenary ends we might expect that public opinion would quickly lead to their abolition. In the meantime, however, we see no reason to discourage any measures which are likely to lead to the more accurate study of disease, and to the dissemination of knowledge regarding it. We need certainly to keep before our minds the ideals which have been set us by Germany. In that case we permit ourselves to hope there would be small risk of abuse.

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ENGLISH *VS.* AMERICAN ATHLETES.

It is of interest to note that in the recent athletic contest between the representatives of English and American universities, the Englishmen won those events which called for physical endurance, whereas the Americans were successful in the contests requiring special strength and skill, without prolonged muscular effort. In no case did the Americans win, or come very near winning, any of the long runs, whereas in short distances, the one-hundred-yard dash, for example, a supreme effort in the last few yards brought the American representative in ahead of his English competitor. The hurdle race also, requiring much skill, combined with temporary effort, was easily won by an American. The result of the longer runs might have been different, had the man upon whom the Americans depended not been somewhat out of condition, but the fact remains that the English athletes had an endurance which was entirely lacking in our men. Whether this resulted from different training or climatic conditions, or some more subtle cause, it is quite impossible to say, and certainly the data are as yet too few upon which to base conclusions. It is, however, to be hoped that this meeting, with a result so creditable to both sides, may be repeated each year alternately on this and on the other side of the Atlantic, and that an opportunity may thus be given, extending over a considerable period, of comparing methods of training and determining whether or not racial peculiarities or climatic differences underlie the rather striking outcome which we have had occasion to note this year. Some years ago a team of amateur English athletes visited this country, and were thoroughly beaten. On that occasion they encountered, in addition to their opponents, excessively hot weather, which no doubt was a factor in the result. It is generally recognized, moreover, that a visiting team is always at a disadvantage.

MEDICAL NOTES.

A Polyclinic in London. — A polyclinic has been established in London, which it is hoped will make the teaching facilities of that city more available than they have been in the past.

Yellow Fever Declining at Santiago. — It is gratifying to learn that the vigorous measures inaugurated by General Wood on his return have resulted in a rapid decline in yellow fever at Santiago, and the United States troops were reported free from it a week or more ago.

Hospitals as a Field for Christian Scientists. — We learn from the *Medical News* that in some inexplicable way a man who claimed to be a Christian Scientist, an "Eddyite" or "Divine Healer," and able to cure every disease afflicting the patients, got into Bellevue Hospital one day last week. He told the patients that the attendant physicians at the hospital were their worst enemies, and were merely experimenting on them for the benefit of the higher classes. The man had elaborately printed cards, on the back of which were crosses in red, and "P. J. Durvin, 285 Bowery," also the announcement that he and the Saviour were able to cure every manner of disease. Durvin succeeded in passing through several of the wards before he was interrupted. It is said that he then left the hospital by the "most direct route." The patients were all more or less excited over the visit.

The Microbe and the Passenger. — The Paris correspondent of the *Lancet* states that a Parisian who was lately travelling by train refused to show his ticket to a travelling inspector of the company. The passenger was accordingly summoned by the company for refusing to show his ticket, as he was bound to do by law. He argued, however, that he had not refused to show it (*présenter*), that he had let the inspector see it so that he could easily satisfy himself as to its being in order, but that he certainly had refused to let the ticket inspector take it into his hands because his hands were so dirty. He, the passenger, therefore, was unwilling to put into his pocket a ticket which would be contaminated with microbes and might very likely give him some disease. After a long legal discussion as to the exact meaning of the word "show" (*présenter*), the court fined the ardent disciple of modern hygiene the sum of one franc. — *Journal of the American Medical Association.*

The Cultivation of the Bacillus Lepræ. — At a recent meeting of the National Academy of Medicine of Bogota Dr. Carrasquilla asserted that he had successfully cultivated the bacillus lepræ on sloped solidified human serum and on beef bouillon prepared according to the method of Thoinot and Masselin. The bacillus was then cultivated from serum to serum, and from bouillon to bouillon, pure cultures being always obtained. Dr. Carrasquilla further states that he observed the bacillus in motion in two stages of its development — as long, slender bacilli, which move in an undulatory manner; and as short, coarse, almost elliptical bodies moving rapidly in a straight line. In the latter he fancies he has observed flagella, but he is not positive as to this. His results do not entirely accord with those obtained by Professor Spronck, of Utrecht, who has also claimed to have cultivated Hansen's bacillus. Professor Campana, of Rome, has also convinced himself that he has successfully cultivated the bacillus lepræ. These experiments require confirmation and extended observation before they can be accepted as absolute. — *British Medical Journal.*

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 26, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 48, scarlet fever 13, measles 34, typhoid fever 21.

TYPHOID EPIDEMIC TRACED TO MILK. — A small epidemic of typhoid fever, which has been traced to a milk route, is reported in Jamaica Plain, Mass.

TWO MORE CASES OF TETANUS. — A boy of eleven years died at Woonsocket, R. I., on July 24th from tetanus, caused by a blank-cartridge wound received on July 1st. The ten-year-old son of Rev. G. H. Horton, of Blackstone, is ill with tetanus due to the same cause.

NEW YORK.

BEQUESTS TO HOSPITALS. — Martin H. Lehmaier, who died last month, bequeathed $2,500 to Mount Sinai Hospital for the founding of a bed in his memory. By the will of Daniel Krakauer $2,000 is left to Mount Sinai Hospital and $1,000 each to the Montefiore Home for Chronic Invalids and several other Hebrew charitable institutions.

A LARGE FEE FOR VISITS. — The newspapers report that a case is pending in the Supreme Court of Tompkins County, New York, in which Dr. H. L Robinson, of McLean, is suing G. E. Chambers, of the same village, for a bill of $10,000 for professional services consisting of ten visits during a recent illness. If the rest of the doctor's practice pays him these rates he ought to be able to keep the wolf from the door.

VACATION SCHOOLS POPULAR. — The second season of vacation work in the public schools of Manhattan and Bronx Boroughs was begun on July 18th, and the number of children applying for admission was much larger than could be accommodated, as the appropriation for the total expense is limited to $30,000. There are ten schools, divided into kindergarten, primary, grammar, art and industrial schools, with three hours' daily sessions. For the girls there are practical courses in domestic economy, cooking, housecleaning, dressmaking, nursing and the hygiene of the sick-room, and for the boys, in various branches of mechanical industry. The indoor gymnasiums used last year have been supplemented this year with five outdoor gymnasiums, and other features that have been added this season are swimming lessons in the city's free baths and sketching classes in the parks. The vacation-school system has this year been introduced for the first time in Brooklyn, and there are now six schools in operation there under the direction of the Borough School Board.

A CASE OF ACROMEGALIA. — A remarkable case of acromegalia, said to be the first one of that disease recorded at the institution, was received in Bellevue Hospital on July 20th. The patient was an elderly woman six feet in height, and her head, nose and extremities were enormously enlarged, while a heavy gray moustache and beard gave her a most formidable appearance. She was in a state of exhaustion when admitted, and died on the following day.

WOMEN NURSES START FOR THE PHILLIPINES. — Nine women nurses, six of them graduates of New York training schools, and the others graduates of schools in Boston and New Haven, started for the Philippines on July 20th. They were sent in response to an appeal for more nurses recently cabled from Manila, and went under the auspices of a ladies' organization for the maintenance of trained nurses formed during the recent war. At Manila they will report to Miss Henshall, who is at the head of the eighteen trained nurses already sent out by the same society.

THE BABIES' HOSPITAL, SEASIDE BRANCH. — The new building of the seaside branch of the Babies' Hospital, an adjunct of the Post-Graduate Medical School and Hospital, was opened at Oceanic, N. J., on July 21st. A special feature of it is accommodations for pay patients, where the infants of well-to-do parents may be sent for treatment.

THE HARPER PAVILION. — The new wing of the Monmouth Memorial Hospital, at Long Branch, N. J., which has been erected at a cost of $10,000 and is to be known as the Harper Pavilion, was dedicated with appropriate ceremonies on July 18th.

MORE DEATHS FROM TETANUS. — During the week ending July 22d there were reported two deaths from tetanus, the result of Fourth of July accidents, in New York, and one each in Yonkers, Syracuse, Paterson, N. J., Elizabeth, N. J., and Passaic, N. J. In all the cases except one it is stated that antitoxin serum was employed. The deaths in Yonkers and Passaic were both in patients which last week were reported as improved under the serum treatment. Four deaths in all have occurred at Yonkers and three at Syracuse.

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ARMY NOTES.

THE ARMY RATION. — Dr. L. L. Seaman, of New York, late surgeon of the First Regiment, U. S. Volunteer Engineers, who is now on a visit to the Philippines in a semi-official capacity, has offered, through the Military Service Institution of the United States, a prize of $100, or a gold medal of that value, if preferred, for the best essay on "The Ideal Ration for an Army in the Tropics." The Executive Council of the Military Service Institution, at a meeting recently held at its headquarters on Governor's Island, adopted a resolution of thanks to Dr. Seaman and decided that all essays offered in competition should be submitted by March 1, 1900, to a committee of award consisting of Colonel Weston, Acting Commissary-General, Lieut.-Col. Charles Smart, Deputy Surgeon-General, and Lieutenant-Colonel Dougherty, Seventh U. S. Infantry.

Care of Orphans in Cuba. — Miss Clara Barton, President of the National Red Cross Society, who arrived from Havana on July 20th, reports that during the past three months the Society has organized in Cuba twelve asylums for reconcentrado orphans, in which there are now accommodated about twelve hundred children of from three to fifteen years of age.

Transportation of the Wounded in the Philippines, Health of the Troops, etc. — In a report just received from Manila covering the month of May, the movements of the medical department attached to the 2d Division, 8th Army Corps, are detailed by Major Henry F. Hoyt, chief surgeon of that division. As the movements north of the Rio Grande River were along the line of the railroad, hand-cars were found to be of much service in the transportation of hospital supplies and wounded. In anticipation of the fight of May 3d, four ambulances were taken across the river on a raft, the bridge having been destroyed. These ambulances were of great value in the action which commenced at about the time of their arrival. The wounded were brought by them to the railroad and transported on hand-cars to the broken railroad bridge, where they were transferred to litters, ferried across the river on two cascoes lashed together, and were again placed on the hand-cars. The hospital-corps men suffered considerably from heat and exhaustion, and Filipino prisoners were impressed to propel the hand-cars. At Bagbag the wounded were transferred to steam-cars and sent into Manila. On May 6th the remaining ambulances succeeded in crossing the river and a temporary hospital was established in several large houses in San Fernando. On May 12th Major Hoyt made an inspection of the troops of the command and found them much exhausted and debilitated by the hardships of the campaign in which they had engaged. Diarrheal troubles appeared to be on the increase in the command, and regulations were issued providing for the restriction of the purchase and use of fruits by the men. In response to a request for suggestions as to improvement in the existing ration, Major Hoyt advised that a daily issue of six ounces of rice per man be authorized and that its use be encouraged by company officers. Instead of canned corned beef, which he said was universally condemned during the present campaign, he advised the use of a sausage containing five parts of beef and one of pork and the issue of a canned vegetable soup in lieu of the allowance of beans. On the 24th an engagement west of San Fernando took place, the wounded being sent in on ambulances, cared for at the hospital and shipped to Manila by train. On the 25th five buildings were selected in San Fernando and a division field hospital established therein, the first in the Philippine war. It had a capacity at the outset of 200 beds, Major Guy L. Edie being assigned in charge. At the end of the month the troops were found debilitated and exhausted from the hardships which they had undergone and it was noticed that recuperation seemed to be slow. During the month, in the seven regiments composing the division, the casualties were six killed and 52 wounded, or a mortality of ten per cent. in the total number of hits. With this division there were serving 27 medical officers, 19 hospital stewards, 17 acting hospital stewards, 110 privates of the hospital corps, 9 ambulances and 78 coolie litter-bearers. With regard to the latter, Major Hoyt says, that as litter-bearers they are very satisfactory but do not prove efficient workers in connection with the hospitals. Their employment in the field is of much assistance, since it leaves the trained man of the hospital corps free for other more important duties.

Hospital Ships and Army Transports. — The hospital ship *Missouri* is now at Brooklyn, undergoing extensive repairs and alterations preparatory to her voyage to Manila, where she will hereafter be stationed. The trip will be made *via* the Suez Canal and the ship is expected to be in readiness to start about August 20th. The medical department in the Philippines will be well supplied with floating-hospital facilities on her arrival. The *Missouri* and *Relief* together have ample accommodations for more than 500 patients. Each army transport possesses a well-appointed hospital of a size proportionate to the carrying capacity of the ship, and returning transports carrying no troops have been found of excellent service, after special preparation, in the transfer of convalescent patients to the United States.

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Miscellany.

THE SEXUAL DIFFERENCES OF THE FETAL PELVIS.

While the existence of structual differences between the pelves of the male and female adult has long been recognized, the source and method of production of these differences are problems which have occupied the attention of many generations of obstetricians and anatomists. It has generally been assumed that the characteristic features of the female pelvis do not take shape until the period of puberty, and an immense amount of ingenuity has been expended in providing hypothetical explanations of the change. Matthews Duncan, for example, held that the special features of the male pelvis were due to the bones being thicker, stronger, and stouter than in the female, a further factor being their supposed earlier consolidation with each other. This, however, is more of the nature of a statement of appearances than an explanation of their causation, and this observer's theory of the action of natural, that is, muscular, forces, falls to the ground in view of the fact that such forces must act similarly if not quite to the same extent, in both sexes. The obscurity which has hitherto surrounded the production of these differences has to a large extent been cleared away by the painstaking investigations of Professor Thomson, of Oxford, who, in a demonstration at the last meeting of the Obstetrical Society, showed clearly enough, by the aid of numerous beautiful specimens of fetal pelves, that the distinguishing features which serve to identify the pelvis of the male and female respectively are quite well marked as early as the third month of intra-uterine life. It is highly probable, and by no means inconsistent with biology, that these differences exist *ab initio*, though this obviously cannot be affirmed, owing to the fact that at an earlier date the identification of sex is not possible. None, however, can doubt that a fetus is male or female from the very beginning, though evidence thereof is not as yet available, and it follows that if we could only check the observations the same differences would probably be met with coincidently with the formation of the pelvis as a definite structure. This important contribution marks an epoch in our knowledge of the development of the fetus and will greatly simplify the proper comprehension of the subject. — *Medical Press and Circular.*

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A NEW PATHOGENIC MICROBE OF SEWAGE.

The following account of a new pathogenic microbe, which has been isolated by Dr. E. Klein, and named by him the *Bacillus Pyogenes Cloacinus*, is given in the *British Medical Journal* for July 8th:

> This microbe was isolated in pure culture from the purulent peritoneal and pleural exudations of a guinea-pig that died forty-eight hours after subcutaneous injection of a small amount of the deposit of fresh sewage; also from the subcutaneous abscess of this and the companion guinea-pig injected at the same time. The above purulent exudations, as also the pus of the abscess, were crowded with the microbe, either free in the fluid or enclosed in groups within the substance of the pus cells.
>
> The microbe is a minute bacillus, the average length varying between 0.6μ and 1.25μ (few are longer), cylindrical, and in chains; its thickness is about 0.4μ. It is non-motile and stains slightly in Gram.
>
> In gelatine plates kept at 20° to 21° C. the first traces of growth show themselves after forty-eight hours in the form of gray translucent round dots; these enlarge slowly, forming circular flat discs, slightly thicker in the centre than at the margin.
>
> In gelatine streak the growth is gray, translucent; when growth is complete, say, after two to three weeks, it shows under a magnifying glass a thicker knobby centre and a thin translucent margin.
>
> In gelatine stab the track of the needle becomes marked as a thin whitish line, which under a magnifying glass is seen composed of closely-placed minute droplets; on the surface of the stab a circumscribed flat gray expansion is just noticeable with the unaided eye. The gelatine is not liquefied after weeks and months. On the agar surface the colonies are translucent gray, moist, viscid discs; in agar streak translucent gray, viscid bands; in agar stab (37 C.) the growth is like that in gelatine stab, except that at the surface of the stab there is a circular, distinct, plate-like expansion of the growth.
>
> In alkaline beef broth kept at 37° C. the growth is rapid; the broth is slightly turbid already after twenty-four hours, but after several days the broth clears and shows numerous fine granules along the sides and a powdery precipitate at the bottom of the tube. The broth, even after growth is completed, has a distinctly alkaline reaction; no indol is produced. The microbe grows well in litmus milk and in milk without altering either the litmus or the fluid condition, reaction, and aspect of the milk.
>
> In shake culture in ordinary gelatine or in grape sugar gelatine it produces no gas; it grows very feebly in the depth of the gelatine. On potato no growth is visible or demonstrable by microscopic specimens. The microbe does not grow on acid media, and in fluid media distinctly produces alkali. Neither the pus of the abscess nor the purulent exudations, nor any of the cultures, have any smell.
>
> The microbe, when injected in minute doses, is pathogenic. Small doses — even a portion of one colony — cause disease in the guinea-pig. When injected subcutaneously into the groin, in the majority of instances only a local abscess is the result; this commences as a small tumor a day or two after the injection; this enlarges, and soon becomes changed in the course of two or three days into an abscess, from the size of a bean to that of a hazel nut, filled with creamy thick pus. Under the microscope the fluid contains an abundance of the bacilli as single individuals, or more frequently as dumb-bells; some few are cylindrical and some in chains. Many of the pus cells contain the bacilli, occasionally their protoplasm being packed with the bacilli. Some pus cells are greatly swollen by the number of bacilli, and eventually disintegrate, so that the groups and clumps of the bacilli become free. In a large minority of instances, however, the result of subcutaneous injection is, besides the local abscess, general disease, ending fatally in three to four days.
>
> When the result of inoculation is a local abscess only, no bacilli can be found in the blood, but when it is a general purulent inflammation of the serous membranes, the blood of the heart and of the viscera, spleen particularly, contains an abundance of the microbe.
>
> Injection of minute doses into the peritoneal cavity of guinea-pigs leads to fatal result within twenty to twenty-four hours. On post-mortem examination purulent peritonitis, with pyogenic membranes on the liver, spleen, diaphragm and kidney, and inflammation of the small intestine, occasionally pleural and pericardial exudation, are also present.
>
> In the mouse subcutaneous injection of the culture in small doses causes general septicemic infection, the blood of the heart and of the viscera teeming with the microbe, the viscera of the abdomen and thorax being greatly congested.
>
> In the rabbit no pathogenic effect is produced.
>
> From these observations, both as to cultural characters and as to the result of animal experiments, it is clear that the microbe is distinct from Passet's bacillus pyogenes fetidus, as also from Bolton's bacillus pyogenes soli. Culturally it resembles, to a certain extent, the bacillus suisepticus (German *Schweineseuche*) of Löffler and Schütz, but the action of this latter on rodents is altogether of a different nature from that described above of our microbe. On account of its derivation from sewage and its conspicuous pyogenic action, Klein proposes for it the name "bacillus pyogenes cloacinus."

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THERAPEUTIC NOTES.

Dr. Karl Herxheimer treated twenty-eight cases of psoriasis with intravenous injections of arsenic, and obtained cures even in cases in which no local treatment was applied. The cure was usually evident by the end of the second or the beginning of the third week, by which time the papules became darker, and the crusts diminished, when finally the pigmentation would disappear altogether. The average duration of the treatment was about forty-eight days. The initial dose of the arsenious acid was $\frac{1}{60}$ grain, which was increased daily by $\frac{1}{60}$ until $\frac{1}{10}$ grain was reached, this last remaining until the final disappearance of the efflorescence. The injections were mostly made into the elbow-joints, the forearm being compressed with an Esmarch bandage, which made the veins very prominent. To prevent any recurrence, the author recommends intermittent treatment, similar to what is done in syphilis, during the periods free from symptoms.[1] We think, however, that the dose of arsenic is much too large.

For Spasmodic Croup:[2]

℞	Nitroglycerin	gttæ 1-10-1-15
	Spir. vini gallici	ʒ iv

M. Et sig. Two to five drops every two to three hours in some sweetened water.

For Vomiting of Sea-sickness:[3]

℞	Menthol	gr. ii
	Cocainæ hydroch.	gr. iii
	Syr. simpl.	ʒ i
	Spir. vini rectif	ʒ ii

M. Et sig. A teaspoonful every hour.

◆

Obituary.

RUSSELL STURGIS, JR., M.D.

Dr. Russell Sturgis was born on December 16, 1856. He was prepared for college at St. Paul's School, Concord, N. H., and received the degree of A.B. as a member of the class of 1878, Harvard College. He took the degree of M.D. (Harvard) in 1881. On March 30, 1880, he was married to Anne Outram Bangs.

In the latter part of May Dr. Sturgis was taken with typhoid fever in a severe form. He did well, however, for the first two or three weeks, when an extensive infarction of the right lung occurred. From this time he grew gradually weaker, though an occasional rally gave ground for hope. He finally succumbed on July 17th, after an illness which he bore with great fortitude. Mrs. Sturgis, a son and six daughters survive him.

Dr. Sturgis's death was a profound shock to a wide circle of patients and friends. He was loyal, devoted, warmhearted and self-sacrificing. These qualities, which won the respect, gratitude and affection of all who knew him, are now recalled with a sharp sense of personal bereavement.

The professional labors of Dr. Sturgis were at first devoted more especially to the diseases of children. Later he became interested in nervous diseases and the phenomena of hypnotism. After considerable experience in those nervous diseases marked by a "fixed idea" he published a paper of great interest and importance on "The Use of Hypnotism to the First Degree as a Means of Modifying or Completely Eliminating a Fixed Idea." This contribution contained original and valuable observations, which attracted wide notice. His success in the personal treatment of these obstinate cases led to the publication in 1899 of a second paper on the same subject. The methods used by Dr. Sturgis were painstaking; the cases themselves were from their nature trying; his results were often brilliant. It is a matter of deep regret that the work so auspiciously begun, so full of promise for future development, should have been thus early interrupted.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JULY 20, 1899.

Bailhache, Preston H, surgeon. To proceed to New York, N. Y., for special temporary duty in the Purveying Depot. July 20, 1899.

Banks, C. E., surgeon. Relieved from duty at Washington, D. C., and detailed as medical purveyor of the Service at New York, N. Y. July 17, 1899.

Geddings, H. D., passed assistant surgeon. To proceed to New York, N. Y., for special temporary duty. July 15, 1899.

Rosenau, M. J, passed assistant surgeon. Detailed as inspecting quarantine officer for the Island of Cuba. July 19, 1899.

Fricks, L. D., assistant surgeon. To proceed to the Brunswick Quarantine Station, Brunswick, Ga., for special temporary duty. July 18, 1899.

McAdam, W. R., assistant surgeon. Granted seven days' extension of leave of absence. July 18, 1899.

Richardson, T. F., assistant surgeon. Relieved from duty at the Immigration Depot, New York, N. Y., and directed to proceed to Cienfuegos, Cuba, for temporary duty. July 17, 1899.

Thornbury, F. J., assistant surgeon. To proceed to Point Pleasant, N. J, for special temporary duty. July 18, 1899.

Burford, R. E. L., sanitary inspector. Granted leave of absence for seven days. July 18, 1899.

APPOINTMENT.

Alanson Weeks, of Michigan, to be acting assistant surgeon, for duty at the port of Chicago, Ill. July 13, 1899.

RECENT DEATHS.

Cyrus N. Chamberlain, M.D., M.M.S.S., died at Jamaica Plain on July 18th, at the age of seventy years. He was an active and efficient surgeon in the U. S. Army during the Civil War and organized a general hospital at Gettysburg after the battle, and the Dale General Hospital at Worcester, Mass. He retired from the army in 1865 with the rank of lieutenant-colonel, received for meritorious service. In 1865 he went to Lawrence, Mass., where he built up a large practice. He has been a councillor of the Massachusetts Medical Society and was twice president of the Essex North District Medical Society. He was visiting physician and later consulting physician to the Lawrence Hospital. He retired from practice and went to Andover to live a few years ago. His death ended an active and useful professional career.

James S. Geary, M.D., for two years a coroner's physician in the Borough of the Bronx, died at the age of thirty, on July 17th, of pulmonary tuberculosis. He was educated at St. John's College, Fordham, and graduated from Bellevue Hospital Medical College in 1892, and he afterwards served on the house staff of St. Francis' Hospital.

J. William Niedecker, M.D., of Brooklyn, died suddenly of apoplexy, on July 17th, at the age of thirty-eight. He was born in Cleveland, O., and was a graduate of the Columbus Medical College and the Long Island College Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Medical Society of the State of North Carolina, Forty-fifth Annual Meeting, held at Charlotte, N. C., May 3, 4 and 5, 1898.

Addresses and Papers by the Members of the Instructing Staff of the New York State Veterinary College for the years 1896–98. Ithaca, N. Y. 1898.

The Serum Diagnosis of Disease. By Richard C. Cabot, M.D., Physician to Out-patients, Massachusetts General Hospital. New York: William Wood & Co. 1899.

Essays for Students. By Stephen Paget, F.R.C.S., Surgeon to the West London Hospital; Surgeon to the Ear and Throat Department of the Middlesex Hospital. New York: William Wood & Co. 1899.

Transactions of the New York State Medical Association for the year 1898. Volume XV. Edited for the Association by M. C. O'Brien, M.D., of New York County. New York City: Published by the Association.

Elementary Physiology. By Benjamin Moore, M.A., Professor of Physiology in the Medical Department of Yale University, etc. With 125 illustrations. New York, London and Bombay: Longmans, Green & Co. 1899.

Golden Rules of Gynæcology. By S. Jervois Aarons, M.D., Registrar to the Hospital for Women, Soho, etc. "Golden Rules" Series, No. II. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1898.

Our Baby: for Mothers and Nurses. By Mrs. Langton Herver, Diplomée Obstetrical Society, London; late Hospital Ward Sister; author of "Antiseptics: a Hand-book for Nurses." Sixth edition, revised. Bristol: John Wright & Co. 1899.

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[1] St. Peter. med. Woch., 48, 1898.
[2] Centrbl. f. Ther., November, 1898.
[3] Bull. Méd.

Respiratory Exercises in the Treatment of Diseases, Notably of the Heart, Lungs, Nervous and Digestive Systems. By Harry Campbell, M.D., B.S. (Lond.), Fellow of the Royal College of Physicians, London, etc. New York: William Wood & Co. 1899.

The Treatment of Disease by Physical Methods. By Thomas Stretch Dowse, M.D. (Abd.), F.R.C.P. (Edin.), formerly Physician-Superintendent, Central London Sick Asylum; President North London Medical Society, etc. New York: E. B. Treat & Co. 1899.

Surgical Nursing. By Bertha M. Voswinkel, Graduate of Episcopal Hospital, Philadelphia; late Nurse-in-charge of Children's Hospital, Columbus, O. Second edition, revised and enlarged, with 112 illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

On the Study of the Hand for Indication of Local and General Disease. By Edward Blake, M D., M.R.C.S., Life Associate, Sanitary Institute Great Britain; Foundation Fellow British Gynecological Society, etc. Second edition. London: Henry J. Glaisher. 1899.

Cyclopedia of the Diseases of Children, Medical and Surgical. The articles written especially for the work by American, British and Canadian authors. Vol. V, Supplement. Edited by William A. Edwards, M.D. Illustrated. Philadelphia: J. B. Lippincott Co. 1899.

American Association for the Advancement of Science: Preliminary Announcement of the Forty-eighth Annual Meeting to be held at Columbus, O., August 21 to 26, 1899, and of the meetings of Several Affiliated Scientific Societies that will hold their Sessions in Columbus. 1899.

International Clinics: A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, etc. Edited by Judson Deland, M.D., J. Mitchell Bruce, M D., F.R C.P., and David W. Finlay, M.D., F.R.C.P. Volume IV. Eighth series. 1899. Philadelphia: J. B. Lippincott Co 1899.

Three Practical Points in the Management of Fractures at the Elbow-joint. I. General Considerations upon Major Anesthesia. II. Threatened Death during Major Anesthesia. III A Brief Digression upon Shock. Shock. By Robert H. M. Dawbarn, M D., New York. Reprints. 1897–99.

Twentieth Century Practice, an International Encyclopedia of Modern Medical Science. By leading authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In twenty volumes. Vol. XVI. Infectious Diseases. New York: William Wood & Co. 1899.

The Influence of Character and Right Judgment in Medicine: The Harveian Oration delivered before the Royal College of Physicians, October 18, 1898. By Sir Dyce Duckworth, M.D., LL.D., Fellow and Treasurer of the College, etc. New York and Bombay: Longmans, Green & Co. 1898.

A Compend of Human Physiology, Especially Adapted for the Use of Medical Students. By Albert P. Brubaker, A.M., M.D., Adjunct Professor of Physiology and Hygiene in the Jefferson Medical College, etc. Ninth edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1899.

Thirtieth Annual Report Relating to the Registry and Returns of Births, Marriages and Deaths in Michigan for the year 1896. By the Secretary of State of Michigan. Edited by Cressy L. Wilbur, M.D., Chief of the Division of Vital Statistics. By authority, Lansing: Printed by the State. 1898.

Notes on Surgery for Nurses. By Joseph Bell, M.D., F.R.C.S. (Edin.), Consulting Surgeon to the Royal Infirmary and to the Royal Edinburgh Hospital for Sick Children. Fifth edition, thoroughly revised. Edinburgh: Oliver & Boyd. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1899.

Treatise on Human Physiology, for the use of Students and Practitioners of Medicine. By Henry C. Chapman, M.D., Professor of Institutes of Medicine and Medical Jurisprudence in Jefferson Medical College, Philadelphia, etc. Second edition, illustrated with 595 engravings. Philadelphia: Lea Brothers & Co. 1899.

The Newer Remedies: A Reference Manual for Physicians, Pharmacists and Students. By Virgil Coblentz, A.M., Phar.M., Ph.D., F.C.S., etc. Professor of Chemistry and Physics in the New York College of Pharmacy, etc. Third edition, revised and very much enlarged. Philadelphia: P. Blakiston, Son & Co. 1899.

A Treatise on Fractures and Dislocations, for Practitioners and Students. By Lewis A. Stimson, B.A., M.D., Professor of Surgery in Cornell University Medical College, New York. In one octavo volume of 823 pages, with 321 engravings and 20 full-page plates. Philadelphia and New York: Lea Brothers & Co. 1899.

An Experimental Research into Surgical Shock. An essay awarded the Cartwright Prize for 1897. By George W. Crile, A.M., M.D, Ph.D., Professor of the Principles of Surgery and Applied Anatomy in the Cleveland College of Physicians and Surgeons, etc. One hundred and sixty pages. Philadelphia: J. B. Lippincott Co.

The Philosophy of Memory and Other Essays, Consisting of articles on the Philosophy of Emphasis; The Functions of the Fluid Wedge; The Birth of a Planet; The Laws of Riverflow. By D. T. Smith, M.D., Lecturer on Medical Jurisprudence in the University of Louisville. Louisville, Ky.: Press of John P. Morton & Co. 1898.

Golden Rules of Surgical Practice. By E. Hurry Fenwick, F.R.C S., Surgeon to and Lecturer on Clinical Surgery at the London Hospital, etc. "Golden Rules" Series, No. I. Fifth edition, revised and enlarged. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. Hirschfeld Bros. 1898.

Diagnosis by the Urine, or the Practical Examination of Urine, with Special Reference to Diagnosis. By Allard Memminger, M.D., Professor of Chemistry, Urinology and Hygiene in the Medical College of the State of South Carolina, etc. Second edition, enlarged and revised, with illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

Railway Surgery: A Hand-book on the Management of Injuries. By Clinton B. Herrick, M.D., Troy, N. Y., Lecturer on Clinical Surgery, Albany Medical College; Attending Surgeon to the Troy Hospital and to the House of the Good Shepherd, etc. Profusely illustrated by numerous original engravings. New York: Wm. Wood & Co. 1899.

Clinical Lectures on Neurasthenia. By Thomas D. Savill, M.D, Physician to the West End Hospital for Diseases of the Nervous System, London; Examiner in Medicine to the University of Glasgow; formerly Medical Superintendent of the Paddington Infirmary and Assistant Physician to the West London Hospital, etc. London: Henry J. Glaisher. 1899.

On Varix: Its Causes and Treatment, with Especial Reference to Thrombosis. An address delivered at the inaugural meeting of the Nottingham Medico-Chirurgical Society, Session 1898–99. By William H. Bennett, F.R.C.S. (Eng.), Surgeon to St. George's Hospital and Joint Lecturer on Surgery at the Medical School, etc. New York and Bombay: Longmans, Green & Co. 1898.

An American Text-book of Diseases of the Eye, Ear, Nose and Throat. Edited by G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College, Philadelphia, etc., and B. Alex. Randall, M.A., M.D., Ph.D., Clinical Professor of Diseases of the Ear in the University of Pennsylvania, etc. Illustrated with 766 engravings. Philadelphia: W. B. Saunders. 1899.

Fever Nursing, designed for the Use of Professional and Other Nurses, and Especially as a Text-book for Nurses in Training. By J. C. Wilson, A.M., M.D., Author of "A Treatise on the Continued Fevers," Visiting Physician to the Hospital of the Jefferson College and the Pennsylvania Hospital, etc. Third edition, revised and enlarged. Philadelphia and London: J. B. Lippincott Co. 1899.

An Essay on the Nature and the Consequences of Anomalies of Refraction. By F. C. Donders, M.D., late Professor of Physiology and Ophthalmology in the University of Utrecht. Revised and edited by Charles A. Oliver, A.M., M D. (Univ. Pa.), one of the Attending Surgeons to the Wills Eye Hospital, etc. With portrait and other illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

Practical Materia Medica for Nurses, with an Appendix containing Poisons and their Antidotes, with Poison-emergencies; Mineral Waters; Weights and Measures; Dose-list, and a Glossary of the Terms used in Materia Medica and Therapeutics. By Emily A. M. Stoney, Graduate of the Training School for Nurses, Lawrence, Mass.; late Head-nurse, Mercy Hospital, Chicago, Ill., etc. Philadelphia: W. B. Saunders. 1899.

A Hand-book of Obstetric Nursing, for Nurses, Students and Mothers, comprising the Course of Introduction in Obstetric Nursing given to the Pupils of the Training School for Nurses connected with the Woman's Hospital of Philadelphia. By Anna M. Fullerton, M.D., Obstetrician, Gynecologist and Surgeon to the Woman's Hospital of Philadelphia, etc. Fifth revised edition, illustrated. Philadelphia: P. Blakiston, Son & Co. 1899.

Clinical Diagnosis: The Bacteriological, Chemical and Microscopical Evidence of Diseases. By Dr. Rudolf von Jaksch, Professor of Special Pathology and Therapeutics, and Director of the Medical Clinic in the German University of Prague. Specially revised and enlarged by the author from the third English edition of the translation by James Cagney, M.A., M.D. Fourth edition. With numerous illustrations, partly in colors. London: Charles Griffin & Co., Limited. Philadelphia: J. B. Lippincott Co. 1899.

Atlas of Diseases of the Skin, including an Epitome of Pathology and Treatment. By Prof. Dr. Frantz Mracek, of Vienna. Authorized translation from the German. Edited by Henry W. Stelwagon, M.D., Ph.D., Clinical Professor of Dermatology, Jefferson Medical College, Philadelphia; Physician to the Department for Skin Diseases, Howard Hospital; Dermatologist to the Philadelphia Hospital, etc. With 63 colored plates and 39 full-page half-tone illustrations. Philadelphia: W. B. Saunders. 1899.

Original Articles.

THE TREATMENT OF THE ACUTE DIARRHEAS OF INFANCY.

BY JOHN LOVETT MORSE, A.M., M.D., BOSTON,

Assistant Visiting Physician at the City Hospital and Assistant Physician at the Infants' Hospital, Boston; Assistant in Clinical Medicine at the Harvard Medical School.

The acute diarrheas of infancy may be divided, on the basis of etiology, into two main classes: those of nervous origin and those due to the action of micro-organisms.

Simple Diarrhea. — The diarrheas of nervous origin are the result or manifestation of increased peristalsis. This increased peristalsis may be caused by various conditions acting through the central nervous system or by the mechanical action of undigested food. Among the most important of the conditions acting through the central nervous system are sudden changes in temperature, prolonged exposure to heat or cold, fright and fatigue. Food may fail of digestion either because it is unsuitable for digestion, or because the digestive power is functionally weak. In either case the food acts as a foreign body. The intestinal mucous membrane shows no pathological lesions, unless possibly a slight hyperemia. The number and fluidity of the dejections are increased. Except for the presence of more or less partially or entirely undigested food they are normal in character. Perhaps as good a term as any to apply to these cases of the nervous type is "simple diarrhea." They are rare in comparison with the other forms of diarrhea. Their chief danger lies in the increased susceptibility which they produce to invasion by micro-organisms. It is this danger, rather than the severity of the disease itself, which demands appropriate, early and vigorous treatment, even in the mildest cases.

Treatment of Simple Diarrhea. — The first and most important method of treatment is the removal of the cause. This is usually easy when the cause is simply fright or fatigue. When the cause is atmospheric, however, a change of climate may be necessary. When the difficulty is due to undigested food this must be removed. This is best accomplished by castor oil or calomel. As infants bear castor oil proportionately better than adults it is usually advisable to give at least two teaspoonfuls. Calomel is best given in doses of one-tenth of a grain, in combination with a grain of bicarbonate of soda, every half-hour or hour until one grain has been given. In rare instances it may also be wise to wash out the stomach and colon. The infant should be kept quiet in bed. After the cause has been removed the diarrhea usually ceases. If it does not, the treatment should then be directed to the control of the excessive peristalsis. For this purpose opium and astringents may be used. This is, with rare exceptions, however, the only condition in which the use of these remedies is allowable. Opium is best given in the form of paregoric, the dose not exceeding a few drops. I have found tannigen, in doses of from three to five grains, the best of the astringents. As the excessive peristalsis is in many instances merely the expression of general weakness, brandy, in doses of a few drops, will often be more efficacious. It is best to withhold food for a few hours and then to begin with a rather dilute, highly alkaline, pasteurized milk.

Infective Diarrhea. — Micro-organisms are the cause of the great majority of the acute diarrheas of infancy. These micro-organisms may be the usual inhabitants of the intestine or forms not normally present there. They almost invariably enter the body with the food. They are chiefly the ordinary saprophytic bacteria, among the most common of which is the hay bacillus. Bacteriological examinations of the stools in large series of cases have failed, however, to show any definite relation between any special form of bacteria and variety of diarrhea. Bacteriological examination of the discharges at present, therefore, affords no information of value as a basis for either diagnosis or treatment.

The intestines may show all grades of inflammation from simple catarrhal and simple follicular hyperplasia to follicular ulceration and the formation of false membrane. The severity of the symptoms is often no index of the degree of the pathological changes.

The constitutional symptoms are due partly to the lack of nourishment and the abstraction of fluids, but chiefly to the absorption of toxins. These toxins may be formed within the body or taken in, already formed, with the food. Among the most striking of the symptoms of toxic absorption are reflex vomiting, hyperpyrexia, prostration with cardiac depression, and nervous excitement. The most common manifestations of nervous excitement are restlessness, incessant motion and sleeplessness.

The acute diarrheas due to micro-organisms may be roughly divided into several classes which, to a certain extent, call for different lines of treatment. Certain general methods, however, are applicable to all. Among the most important of these is the prophylactic.

Prophylaxis. — This, while important at all times, is especially so in the summer, when these diseases are most common. Infants should be kept in the best possible hygienic surroundings, be given plenty of fresh air and bathed frequently. If feasible, they should be sent to the country or seashore during the summer months. Care must be taken not to overfeed them, as less food is needed in warm weather than in cool. Moreover, owing to the depression produced by the heat the child is less able to digest its food. The deficiency should be made up with water. As these diarrheas are due to micro-organisms and as these micro-organisms are almost invariably introduced with the food, it is evident that every effort should be made to give the child a fresh and sterile food. Too much care cannot be taken in obtaining, transporting and preparing milk during the summer months. It must be remembered, moreover, that the sterilization or pasteurization of milk does not destroy toxins which may be present in it; it merely prevents the formation of more. The toxins present in milk before it is sterilized may well be sufficient to cause severe or fatal symptoms.

Hygienic Treatment — While hygienic measures are of great importance in prophylaxis they are even more so in treatment. The infants should be kept quiet, given the greatest possible amount of fresh air, be lightly clothed and frequently bathed. The napkins should always be immediately disinfected in order to prevent reinfection. If the symptoms do not abate in a few days the children should, if possible, be given the benefit of a change of climate.

Dangers of Opium and Astringents. — Since, as has already been stated, the majority and the most serious of the symptoms are due to the absorption of toxins from the intestines, it is evident that any method of treatment which prevents the natural elimination of these poisonous products in the dejections is absolutely bad. The frequent discharges are nature's attempts to cure. Hence opium in any form is positively contraindicated. It cannot do anything but harm. Astringents are unsuitable for the same reason. They are less dangerous than opium only because they are less powerful.

Classification of Infective Diarrheas. — As already stated, the infective diarrheas may be roughly divided, largely on the basis of symptomatology but partly on that of pathology, into several main groups. These are known by various names, the best of which are fermental diarrhea, cholera infantum and ileocolitis. Almost all of the summer diarrheas belong in the fermental class, ileocolitis being uncommon and cholera infantum exceptional. In making arbitrary divisions on the basis of symptomatology it must always be remembered, however, that in many cases there is absolutely no relation between the severity of the symptoms and that of the pathological lesions, and that conclusions based on the symptoms alone may be entirely erroneous.

Fermental Diarrhea.—In brief, in fermental diarrhea the number of discharges is only moderate, not usually more than ten or twelve in twenty-four hours. They vary in color from yellow and green through all shades of green. They are often watery or frothy, and may contain more or less curds and mucus, but rarely blood. The amount of the discharge is usually comparatively large. The odor is almost always offensive. In some cases it is markedly sour; in others, very foul. On this basis two main classes have been recognized, the acid fermentation and the albuminoid decomposition. It is supposed that in the first class the trouble is due to bacteria which thrive on sugars, and in the second to those which thrive on proteids. Pain and tenesmus are less prominent symptoms than in ileocolitis. The various constitutional symptoms already spoken of are present in all cases in varying combinations and degrees. All degrees of severity are seen, from the mild cases lasting a few days or weeks to those rapidly fatal in a few days or even hours. The pathological changes are comparatively slight, rarely progressing beyond the stage of simple catarrhal inflammation.

Treatment of Fermental Diarrhea. — The first indication for treatment is to remove the cause, namely, the micro-organisms and their toxic products. In mild cases a purge is often all that is necessary. Castor oil is perhaps the most satisfactory when there is no vomiting, although calomel is applicable in all cases and is altogether the best when there is vomiting. A purge is always necessary, as it is the only way in which the small intestine can be reached. In the severe cases and in all cases where vomiting is an important symptom, it is advisable to wash out the stomach. This is a simple procedure in infants, causing them but little discomfort or exhaustion. An ordinary soft-rubber catheter makes a very satisfactory stomach-tube, especially if the tip is snipped off and rounded by heat. Normal salt solution or a solution of borax or bicarbonate of soda are somewhat better than plain water. If thirst is a prominent symptom it is well to leave a few ounces of water in the stomach. In the more severe cases it is also advisable to wash out the lower bowel. This is done by passing a rather large soft-rubber catheter, with the end prepared as for washing out the stomach, high into the bowel. Several quarts of liquid from a fountain syringe, not more than three feet above the patient, should be allowed to run in and out. The same solutions may be used here as for washing out the stomach. The importance of thoroughly emptying the alimentary tract from both above and below, as well as by purging, can hardly be overestimated.

Unfortunately, it is impossible by the methods detailed above to entirely rid the alimentary tract of bacteria. Enough remain, if the conditions are favorable for their multiplication, to keep up or cause a recurrence of the trouble. The condition most favorable for their multiplication is the presence in the intestine of a suitable culture medium. This medium enters the intestine only through the mouth. Hence the next indication for treatment is to prevent the ingestion of any food which will provide such a suitable culture medium. For this reason it is best to cut off all food for at least twenty-four hours, giving only sterile water. The brilliant results claimed for barley water and rice water in the treatment of the early stages of these cases are probably due to the fact that they contain so little beside water that their use amounts practically to starvation.

Unfortunately, again, temporary starvation rarely suffices to diminish the number of bacteria to such an extent that they cannot cause trouble. The patient, however, demands and must have nourishment. The problem is to give it in the least harmful form. This is, of course, the form most unsuitable for the growth of the micro-organisms causing the trouble. The odor of the stools, as being characteristic of acid fermentation or albuminoid decomposition, would seem to offer some means of assistance. Unfortunately, this distinction is rarely possible or reliable except in the case of the very sour stools. Here an albuminoid diet, with an almost complete exclusion of sugar, is indicated and gives satisfactory clinical results. In the majority of cases, however, the process seems to be a more complex one, and there is no indication for or against any special element of the food. It must, therefore, be selected on general principles. Foods which are principally digested and absorbed high up in the alimentary tract seem, for a time, at least, most suitable. I have found albumin water, or somatose, given in ten or fifteen grain doses in water, most satisfactory.

There seems to be a very general feeling that milk in any form is unsuitable for these cases, on the ground that the pathogenic micro-organisms are usually originally introduced in milk and therefore should thrive better in it than in any other medium. The usual custom seems to be to employ some form of starchy food. I cannot see why, however, if starchy food is bad for a well baby it should be any less bad for a sick baby. I feel that the favorable results obtained from the use of these foods in these diseases are to be explained by the weakness of the foods. It is to their dilution that they owe their success. I certainly have every reason to be satisfied with the results obtained by feeding these cases with dilute milk mixtures after the initial period of starvation.

After the preliminary period of complete or partial starvation, therefore, the child should be given a mixture prepared from *fresh* milk, *low* in *all* percentages, highly alkaline and pasteurized. It is better to give small amounts frequently than large at long intervals. Experience only can teach just what percentages are to be given in individual cases. In general, the percentage of sugar may be comparatively high, while that of the proteids must be comparatively low. The fundamental principle, however, is to give a dilute food. As the patient improves the percentages may be increased, together or singly, and the intervals of feeding lengthened until the strength and intervals suitable for a normal infant of the given age are reached.

As already stated, the first indication for treatment is to remove the cause. One way to do this is by destroying the cause. In this instance, however, the destruction of the cause involves the destruction of the patient. No germicides in doses large enough to be effectual can be used with safety. Drugs which limit to a certain extent the activity of the micro-organisms can, nevertheless, be used to advantage. After a considerable and varied experience with many drugs, including many of the newer preparations, I have discarded all but bismuth. This is best given as the subgallate. The subnitrate is almost as satisfactory. Either, to be of much use, must be given in considerable doses, not less than one or two drachms in twenty-four hours. Unfortunately, it is difficult to induce a sick infant to take this amount. About as much can be given in the form of powder, mixed with water or milk, as in any other way. It is often given suspended in chalk mixture or simple mucilage. All forms of mucilage decompose very rapidly in warm weather, and after it has been kept twenty-four hours every teaspoonful brings a large reinforcement to the enemy already present in the intestine. The subnitrate of bismuth may be safely given in suspension, however, in the following way:

℞ Ammonio-citrate of bismuth 5
Ac. nitrici . . . . gtt. xxx
Aq. . . . . ad 100

The subnitrate formed in this way will remain in suspension for several days. The objection to this preparation is the strong taste of the citric acid and the small number of grains to the teaspoon. It is possible to give this, however, when the dry powder will not be taken.

Sulphocarbolate of zinc, in doses of one-sixth to one-quarter of a grain, seem to diminish the formation of gas and to improve the odor of the stools.

Stimulation is necessary on the same indications and along the same lines as in other diseases.

Certain special symptoms, due to toxic absorption, may require special treatment in addition to that for the removal of the cause. Excessive vomiting is best treated by stomach washing, and hyperpyrexia by cold bathing or packs. Extreme restlessness usually yields to bromides but morphine may be necessary. If it is used, it is best given subcutaneously. Prostration and collapse require stimulation along the usual lines. Brandy and strychnia are most useful and must often be given under the skin.

Ileocolitis. — In ileocolitis are found the more severe pathological lesions. They are usually most marked in the colon and in the lower part of the small intestine. The discharges are numerous, usually comparatively small in amount, contain much mucus, blood and sometimes pus and membrane. The amount of fecal matter is usually small and often fairly well digested. The odor varies, being putrid when there is deep ulceration and sloughing, and almost *nil* when the discharge is composed principally of mucus. Pain and tenesmus are marked symptoms. The abdomen is often tender. Vomiting is usually not a prominent symptom.

Treatment of Ileocolitis. — The treatment of ileocolitis must be along the same lines as that of fermental diarrhea. Purgation, starvation and diet are as important in the one condition as in the other. Proteids are better borne in this condition and should make up a greater proportion of the food. Fat is not as well borne, however, and should not be given except in very low percentages. Bismuth is even more useful than in fermental diarrhea, serving the double purpose of diminishing fermentation and of mechanically coating over the inflamed surfaces.

Owing to the location of the principal lesions in the large intestine it is possible to reach the seat of disease from below. Irrigation provides a means not only for removing the micro-organisms and their toxic products, but also for cleansing the diseased surfaces and making local applications to them. Several quarts should always be used in irrigating the bowel, and the liquid should be allowed to run until it returns clear. Normal salt solution or a two to four-per cent. solution of boracic acid are most useful. Solutions of the stronger antiseptics are no more efficacious and may be dangerous. Irrigations may be used from one to three times daily. Injections of one to two drachms of the subnitrate or subgallate of bismuth in suspension in one or two ounces of freshly prepared mucilage or starch solution should be given immediately after each irrigation. In this way the bismuth is deposited directly on the inflamed surfaces. In the more chronic cases irrigations of nitrate of silver, in the proportion of 1 to 1,000, once in two or three days seem to hasten recovery. A strong salt solution should always be at hand when this is used, in case it proves too irritating.

Suppositories of a tenth or a sixth of a grain of cocaine will often relieve tenesmus. Other special symptoms should be treated as in fermental diarrhea.

Cholera Infantum. — This term should be applied only to those cases of diarrhea characterized by the most intense choleriform symptoms. It is a very rare condition. The pathological lesions are very slight, never progressing further than hyperemia and desquamative catarrh. The bacteria found usually belong to the proteus group.

Vomiting and diarrhea are constant, and both soon become almost entirely serous. As the result, all the tissues are rapidly deprived of their fluids. Thirst is marked. Wasting and prostration are extreme. The internal temperature is almost always high, although the surface temperature may be low. There is intense internal congestion. The disease is self-limited. The course is not more than two or three days, usually less. The termination is almost invariably in death, usually after marked nervous symptoms.

Treatment of Cholera Infantum. — In such a rapid and fatal disease it is evident that treatment to be of avail must be immediate and vigorous. It is probable that there is a vasomotor paralysis of the gastro-intestinal vessels. Hence food and drugs introduced into the alimentary canal cannot possibly be absorbed. They can do no good and undoubtedly may do harm.

The main indications for treatment are: (1) to empty the stomach and bowels of their toxic contents; (2) to supply fluid to the tissues which are being so seriously drained; (3) to restore the surface circulation;

(4) to reduce the temperature; (5) to keep the patient alive until the disease has run its course.

Purgatives act too slowly to be of much use in this disease, and our chief reliance must be placed in stomach washing and intestinal irrigation. They must be used early and vigorously. It is useless to expect to supply fluids by the mouth. They are almost invariably vomited. Cold, sterile water in small amounts may be tried, however. The injection of normal salt solution into the cellular tissue is the only method of introducing fluid which can be depended upon. Not less than a pint should be given in twenty-four hours. This not only supplies fluid to the tissues but assists in eliminating the toxic substances in the blood and in restoring the surface circulation.

Irrigations of cold water tend to restore the surface circulation and also to reduce the temperature. The best methods for restoring the surface circulation are rubbing, mustard baths and the warm pack. These procedures, however, are not those best fitted for the reduction of temperature. For this purpose cold, in the form of sponging, packs or baths, must be used. In the treatment of individual cases it is often necessary to determine whether it is the internal congestion or the high temperature which is doing the most harm, and then to treat the more serious condition. The relief of one, however, often aids the other also.

As food cannot be given, the patient must evidently be kept alive by stimulation. As drugs given by the mouth are not absorbed this stimulation must be given subcutaneously. The usual stimulants are to be employed. Atropine, however, seems to be the most useful. It is to be used in doses of one five-hundredth to one eight-hundredth of a grain. Morphine is indicated when the diarrhea and vomiting are extreme or when the nervous manifestations are very marked. Doses of one one-hundredth of a grain are usually sufficient. It should be given subcutaneously. Care must be taken not to give too much or to continue it too long.

In case improvement begins, stimulants and water may be given by the mouth, and soon after small amounts of a pasteurized fresh milk of very low percentages.

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HYGIENICS OF THE SKIN.[1]

BY L. D. JUDD, M.D., PHILADELPHIA.

Great strides in the sciences generally have taken place within the last quarter of a century. Medicine and surgery may justly claim to lead the van, inasmuch as through the marvellous energy and skill exerted in these channels human life has been prolonged and human suffering alleviated to a marvellous degree. These fields are so vast that more than has been done, and so well done, could hardly be expected. There are great things yet to be accomplished, and it seems to me that the greatest must be developed in the line of preventive medicine within the domains of Hygeia. Drug worship seems to run rampant, and in the mad rush for the elixir of life, the medical profession, to a great degree, has ignored the simpler laws of nature. They should be devotees of Hygeia as well as students of her father, Esculapius. To teach people how to live and to avoid disease and suffering is a far nobler, though much more difficult, task than any we have in medicine — to teach how, what and when to eat and to drink; when to relax, repose and to sleep; how and when to exercise; how and when to wash and to dress, to secure the proper function of the skin. To teach these and the grand truth that if the proper advice as to these things is given and observed disease and suffering will seldom occur — is, I admit, a gigantic task. If the physician could always deal with people of brains — by that I mean people who will think reasonably and philosophically, and be willing to accept advice from those who have made a study of these things — then the task would be a pleasurable one. My attention has long been directed to the subject matter in this paper, which I will make as brief as possible, and it is given as the offspring of experience and practical knowledge.

The proper care of the skin is only secondary to that of the proper treatment of the stomach, and the ignorance and apathy in which people are resting on matters pertaining to the care of these organs, which have so much to do with health and happiness, is truly appalling.

It is the duty of our profession to instruct in these things. By hygienics of the skin I refer to the washing and the covering necessary, which embraces the treatment of the skin in health. It is not necessary to enter into an exposition on the structure and functions of the skin. Enough to say that it is nature's own covering, arranged to retain and to give off heat and moisture; to breathe in life-giving gases, and to give off noxious vapors and effete substances: that it is a breathing mechanism, and equivalent to a secondary lung. It is so planned as to be a complete protection to the economy in cold as well as in hot weather, but Eve's fall and society's demands in consequence have ordained that it shall be clothed.

That it is the most abused of all the human economy excepting that of the stomach can be readily understood and easily demonstrated. Many there are who think the frequent washing of it harmful; others that deem it essential to purge it by excessive artificial sweatings —such as in the frequent use of the Russian and the Turkish baths, the indiscriminate use of soaps, oils and fats, harsh rubbings by harsh substances, and, above all, improper material worn as underclothing — not alone improper as to material and quantity, but also as to thickness and weight. Who is there among us that has not run the gamut of all these things in his life, personally and professionally? In the first place, the proper cleansing of the skin is most essential to keep its functions in perfect working order. The first thing in the morning after rising, and, if possible, indulging in from ten to thirty minutes of deep chest breathing and light physical exercises, I advocate the warm bath of short duration, rubbing the surface of the body with the bare hands and without the use of any soap, followed immediately with the sprinkler, with cold water in force from the spigot until the skin is in a glow. Once — say every seven days — a full bath in hot or warm water, using pure Castile soap and following with the sprinkler with cold water, as on other days. When the full bath or plunge cannot be had, daily sponging with hot and then cold water is the next best. In drying the skin soft linen or crash toweling should be employed. Many claim they cannot endure the shock of the sprinkler with cold water, but after a trial, starting gradually at first if necessary, they will soon feel that a bath is incomplete without its use, and that the skin seemingly craves it. It is a tonic to the heart by its action on the capillary system, as evinced in the rapid reddening of the skin. In this manner of washing perfect cleanliness is obtained, and the skin is kept in proper working order, and does not lose its elasticity. A wonderful sense of vigor is imparted, and when properly clothed the man goes to his daily duties clad in the right spirit — provided always that he abstains from overloading his stomach.

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[1] Read before the American Climatological Association, May, 1899.

Now, what is the proper covering for the skin? There is now going on in the periodical press quite a conflict over "the underwear problem" — what and how much to wear, when to change; these are the questions sanitary science is asking. It is to be expected that the answers are as diverse as is the individuality of those answering. More are given through theory than from any practical knowledge born of proper reasoning through experience.

Ths ideal covering for the skin (that which is generally known as underwear) is linen — not finely woven linen, but loosely woven, as that of a mesh. We would not think of attempting to dry a wet face or body with a woollen fabric; it is too slow in absorbing moisture and equally slow in drying. We employ linen, and any close observer knows that the more loosely woven it is the quicker it dries the skin, and is much more perfect in this respect than any other fabric known; and we also know that when suspended in the air it dries more quickly. Under normal conditions our body loses through the skin from two to three pints of moisture, in the form of evaporation, in twenty-four hours. That material which rapidly takes up moisture, dries the skin and itself rapidly, is the proper covering for comfort and protection. Our skin should be kept dry as well as the air and clothing surrounding it.

The protective feature of clothing depends upon its air-holding capacity or porosity. The defect of wool in the power of quickly absorbing and eliminating moisture is a serious one, and if properly understood would do away with its use for underclothing. A woollen undergarment, when first put on the dry body, will impart to the same a feeling of warmth and comfort, which will continue as long as the evaporation of the skin is not in excess of the ability of wool to absorb and eliminate the moisture. However, if in consequence of impaired radiation of heat, as in summer time, or a greater production of heat, as by physical exercise, evaporation should be increased, wool will be no longer able to absorb the moisture as fast as excreted from the skin, nor will it be able to part with all it may absorb, hence the skin and the air surrounding it, as well as the garment itself, will be moist, and a further evaporation will be greatly interfered with.

Moisture and velocity of air augment the conduction of heat. If the wet body should under the above conditions be exposed to a draft, a rapid abstraction of heat would at once take place which would chill the body and which usually would result in a cold. It is a matter of daily observation that all those who wear wool next to the skin are very prone to contract colds.

A porous linen, having the advantage over all other fabrics of absorbing moisture and elimininating it quickly, will provide for a dry climate around our body, hence will enable us to stand extremes of heat and extremes of cold with comparative comfort. Having further the property of cleanliness and being non-irritating to the skin, it would seem peculiar that its advantage for the purpose of underclothing should not have been recognized until recently.

The fibres of wool as seen under the microscope are barbed and irregular, while those of linen are smooth and round. The advantages of linen over wool in eczemas and all skin diseases prove its protective and non-irritating qualities. J. C. Milton, senior surgeon to Dr. Johns Hospital, London, for the Diseases of the Skin, says in his paper on the "Hygienic Excellence of Linen": "For years I have been fighting the battle of linen against every kind of prejudice and opposition. Long before then I had begun to be very skeptical as to the power of woollen material to protect the wearer against the agencies which bring on catarrh, pleurisy, congestion of the lungs, bronchitis, and rheumatism, principally from observing that precisely the persons who most persisted in oppressing their frames with this kind of clothing suffered most from these ailments. I had to learn that faith in woollen is a piece of fetish worship; that while flannel is not in any way more protective than linen, if, indeed, equal to the latter, the use of it constantly brings on illness and miseries from which those who wear linen enjoy complete immunity." I would not have it understood that I am opposed to wool for clothing. It is the proper material for outer garments and top wear, as it is more impervious to the moisture of the atmosphere, and as an outside garment protects from the radical changes of this trying climate.

The day of the fad for woollen underwear, which has been rampant for over a generation, is rapidly passing, and with it will go much suffering from la grippe, pneumonia, pleurisy, and congestion of the internal organs generally. Many of us can remember the homespun linen we wore in our youth, for in the early days it was the prevailing underwear, and the colds and la grippe, which seem to be products of modern civilization, were almost unknown.

In the literature of all times in the past may be found evidences of linen as the skin covering. The art of weaving fine as well as porous linen was well known in Egypt, India and Greece. Moses, the greatest of all ancient law-givers and physicians, evidently recognized the hygienic properties of linen as underwear, for in Ezekiel xliv: 17, 18, we read: "They shall be clothed with linen garments; and no wool shall come upon them . . . they shall not gird themselves with anything that causeth sweat."

For fully three years I have thoroughly demonstrated through my own personal experience, in my family and throughout my practice, the priceless value of what I have in this paper advocated. I trust it may be the means of directing the attention of this Society to the importance of the subject, as one well within the scope of our organization.

HERNIA FOLLOWING OPERATIONS FOR APPENDICITIS.[1]

BY FRANCIS B. HARRINGTON, M.D., BOSTON,
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At the Massachusetts General Hospital, from January, 1888, to August, 1897, 503 cases of appendicitis of all varieties recovered after operation by the various surgeons. The figures here presented are from a personal examination of 236 of these cases. The examinations were made with the special purpose of observing the condition of the abdominal wall following this operation. The time which had elapsed since operation varied from nine months to nine years. With the consent of the visiting surgeons of the hospital and with the assistance of Dr. E. A. Codman, an interrogatory letter was sent each one of the 503 patients who recovered. Replies were received from 375. Of this number, 236 came to the hospital for examination.

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[1] Read at the Meeting of the American Medical Association, Chicago, June 2, 1899.

These cases date from the earliest period of operative interference in appendicitis. The method of operation varied from time to time and with the different surgeons. No attempt has been made to compare the results of the various operators, as the method of treating the abdominal walls did not vary radically.

Many of those who reported themselves as perfectly well had marked general bulging of the abdominal wall on the side operated upon. Some had protrusions of the wound, and some had hernias of which they were not aware, as they caused no trouble.

The scars resulting from the operation varied greatly in character, as all scars do. In length they varied from one and one-half to seven inches. In width they varied from the linear to the very broad, in some instances being four inches wide, showing the result of stretching. Occasionally a scar showed a keloid condition.

The scars varied in color, being pale, white, brown, red and purple. The wearing of a belt seemed to make little difference in the condition of the abdominal wall, nor do I believe that belts are of much value except for a short time after operation. The scar and the abdominal wall showed the best condition in those wounds which were tightly closed. Those wounds which were partly closed showed better results than those which were left open. All of the wounds which were not tightly closed were drained usually by wicks of gauze or by tubular drainage, the amount of drainage material varying with different cases. The incisions in the unclosed cases varied, but for the greater part were oblique either in the linea semilunaris or outside of it. In the unclosed wounds during the period mentioned, from 1888 to 1897, some of the muscular or tendinous tissues were usually transversely cut. This cutting directly across muscular fibres frequently occurred in the cases which were closed at the time of operation.

Of the 236 cases examined, 85 were tightly closed at time of operation; 88 were partly closed at time of operation; 63 were open wounds, no sutures being used.

Intermuscular Spaces.—The examination of the tissues under the scar showed in many of the cases that the edges of the incised external rectus muscle or its tendon could be felt and the fingers inserted between these edges. Sometimes the edges of the internal oblique and rectus muscles could be felt. Examined with reference to the intermuscular or intertendinous spaces which could be detected, it was found that 28 per cent. of the tightly closed wounds showed such spaces; 83 per cent. of the partly closed wounds showed such spaces, and 87 per cent. of those left open showed such spaces. These intermuscular spaces result from cutting or separation of the muscles which were not brought into apposition by sutures. If they are kept apart during the healing process by gauze or other drainage the amount of separation becomes greater and more a source of danger. These conditions are increased if the muscles are transversely cut. The degree of intermuscular separation has been indicated in the following table by the term slight, medium and large, these terms referring both to the length and to the width of the spaces.

INTERMUSCULAR SPACES.

		Slight.	Medium.	Large.	Total.
Closed incisions . .	85	17	2	3	22 = 26%
Partly closed incisions	88	28	20	25	73 = 83%
Open incisions . .	63	14	17	24	55 = 87%
Total cases examined .	236				

It is interesting to note that there were 23 cases, in which the wound was left wholly or partly open, where a solid wall resulted. These cases were mostly in young, muscular subjects.

General Abdominal Bulge. When we inspect the general appearance of the abdomen we often find that the wall on the side operated upon, if compared with the opposite side, protrudes upon standing or straining. The protrusion may occupy in a general way the whole of the right side or of a considerable area in the region of the scar. This protrusion I have called the "general abdominal bulge." It has been claimed that this bulging is the result of paralysis of the muscles from section of the nerves. It has seemed to me more probable that it resulted from the cutting of the muscles and tendons and the separation and stretching of these parts.

In dissecting a scar in such an abdomen, I have found the fibres of the external oblique and the internal oblique and transversalis muscles lacking in juxtaposition by a space of one-half to two inches. It can be readily seen that this separation would increase the area of the abdominal wall upon the right side. When these muscles are reunited layer by layer as they originally existed this general bulging disappears to a large extent.

GENERAL ABDOMINAL BULGE.

Closed incision	85	6 cases = 7%
Partly closed incisions	88	40 cases = 45%
Open incisions	63	29 cases = 46%

HERNIA.

We now come to the consideration of the cases of hernia existing in the cases examined.

Punctiform Hernia.—In some of the cases little openings in the scar tissue existed, usually not larger than the point of a pencil, through which could be felt the impulse of a small portion of the abdominal contents. These have been designated "punctiform hernias." There were ten of these, all occurring in the cases which were left partly or entirely open. It did not seem probable that these cases would develop into true hernias. None of them caused pain and the patients were for the most part unaware of their existence. These openings might all be closed without difficulty and should be closed if they showed a tendency to enlarge. It is probable that some of these would close in time by the proper development of the abdominal wall, as small hernias often do in infants.

Bulging in the Scar.—Among the 236 patients examined were some cases of protrusion into the scar which might develop into true hernias, but which could not be properly classed as hernias. No constriction existed and the bulging only appeared on straining. The condition indicated a general weakness in the abdominal wall at the region of the scar.

These cases were almost always accompanied by general abdominal bulging. There were 52 cases of this "bulging in the wound." In 27 cases the bulging in the wound was very slight. Two of these slight bulgings occurred in the tightly closed and were the only examples of "bulging in the scar" in this class of cases.

The other 25 cases of bulging were of considerable size, varying in length and in width from one inch to four inches. In all of these latter cases I think the wound should be reopened and tightly closed. For the most part they gave the patient no trouble, and apparently were not increasing in area.

True Hernia. — There were 27 cases of true hernia in the 236 patients examined.

Total number examined	236
" of males	190
" of females	46
True hernias in all	27 = 11½%
" in males	21 = 11%
" in females	6 = 13½%

Wounds closed at time of operation,	85 with	3 hernias	= 3½%
Wounds partly closed at time of operation	88 with	11 "	= 12½%
Wounds left open at time of operation	63 with	13 "	= 20%

Incisions.		Punctiform hernia.	Bulging in wound.	True hernia.	
Closed	85	0	2	3	= 6%
Partly closed	88	5	29	11	= 51%
Open	63	5	21	13	= 62%

It is to be remembered that in the closed wounds the muscles and the fascia were frequently transversely cut, and the wound closed only by a single layer of stitches which would not insure accurate approximation of the cut muscles. The scars in the cases of hernia averaged four inches in length. In these cases hernia occurred somewhat more frequently in women than in men. This I think will be found to be a general fact, due probably to inferior muscular development in women. In all cases of hernia except two the patients had worn supporters.

Wounds partly closed were followed by fewer hernias than open wounds. Weakening of the abdominal wall existed in a large per cent. of the cases which were drained. This enumeration indicates that all cases should be kept under observation. It indicates that drainage should be reduced to as small an amount as is consistent with safety and dispensed with if possible.

A large proportion of these cases of weakened abdominal wall can be cured or improved by operation. I have operated upon four cases of hernia with excellent results. The operation should consist in a removal of the scar tissue. Adhesions of the abdominal contents to the scar should be separated. The wound should be large enough to allow a thorough identification of the various layers of the muscles, tendons and fascia.

The peritoneum with the transversalis fascia should first be closed; then the internal oblique and transversalis. If these muscles have been cut across they should be reunited so as to restore the original condition as nearly as possible. The external oblique should then be restored and the wound closed.

The after-treatment of a hernia operation should be similar to that employed in any closed appendix operation.

For the "interval operation" it is universally admitted that the muscular tissues should not be cut across the fibres. The McBurney incision has been very generally employed for this purpose. Since November, 1896, Dr. C. B. Porter has made a longitudinal incision through the outer border of the rectus in the "interval operation," with excellent results. This incision is now employed by a number of surgeons.

In the acute cases McBurney recommends the cutting of the internal oblique and transversalis muscles across the fibres. This is the method usually adopted. I have found it possible, by enlarging the McBurney incision for "interval cases," to obtain sufficient opening to treat a large proportion of the acute inflammatory cases. The operation is as follows:

Make an incision in the skin four to five inches long in a line with the fibres of the external rectus muscles, at such a distance from the anterior superior spine of the ilium as is desirable. Separate the muscle and its tendon without cutting for a like distance, then insert retractors one and one-half inches broad at either end. The middle of the incision should correspond to the usual position of the base of the appendix. At this point the internal oblique and transversalis muscles run nearly parallel and horizontal. These muscles should be separated, without cutting, down to the transversalis fascia, and from the ilium to the linea semilunaris. If this does not give sufficient room the sheath of the rectus may be separated in front and behind the muscle in a line continuous with the separation of the internal oblique and transversalis muscles.

The sheath of the rectus muscle is formed by the aponeuroses of the oblique and transversalis muscles. The direction of the fibres of the sheath is horizontal, being at right angles to the line of muscular fibres of the rectus. At the semilunaris line it will be necessary to use the knife or scissors, since at this point the union of the various aponeuroses is very compact. The rectus muscle can then be drawn toward the linea alba and considerable room obtained.

Care should be taken not to cut the deep epigastric artery which at this point lies inside the rectal sheath in the posterior part of the muscle. If necessary it may be tied. Two retractors each about two inches broad should be inserted one at either end of the deep incision; the retractors which have been used for the external oblique can now be dispensed with.

To approach the appendix in cases of acute inflammation, with or without suppuration, I make it a point to enter the general abdominal cavity beyond the region of the appendicular mass. The inflammatory mass is not attacked until its extent and outline have been determined and it has been isolated by a wall of gauze. This method gives good results. Having cut through the transversalis fascia and the peritoneum in a line with the deep incision we have an opening into the abdominal cavity two inches wide and from two to four or more inches long. This is sufficient for nearly all operations upon the appendix. No portion of the tissues essential to the integrity of the abdominal wall has been cut through, except for a slight incision at the semilunar line.

The opening of the rectal sheath is frequently found to be unnecessary. When the retractors are removed the muscular layers come together and even without sutures present a firm obstruction to the protrusion of the abdominal contents. If the rectal sheath has been opened it should be closed with sutures. A suture should be used to unite the cut edges of the linea semilunaris. Other sutures should be used as far as drainage will permit. If drainage can be avoided then the separated layers of muscle should be closed carefully.

All drainage should be removed as soon as safety will permit. When the wound has healed and the stitches have been removed, the patient should be taught to make gradual and careful use of the abdominal muscles in order to restore them to their normal tone. For a month after healing a simple supporting swathe may be used, but the prolonged use of abdominal belts or trusses seems to me undesirable.

If the patient wears a firm abdominal belt and is advised to make little use of the abdominal muscles, there is danger that the muscles may become atrophied and atonic from non-use, as the muscles of the arm or leg do when in splints. Gymnastic exercises for the development of the abdominal muscles should be carefully and persistently followed out.

These exercises seem to me of great importance. Some of the best results in cases which were drained occurred in men who were obliged to resume laborious work soon after leaving the hospital. Having practised for two to three months at home those exercises which tend to develop the abdominal muscles the patient may with safety begin the more active outdoor exercises, such as bicycling, rowing, canoeing and golfing, or if his work is laborious he may resume it. The following exercises are suggested for immediate home use, the amount and duration of effort being gradually increased:

(1) Bend the trunk forward, backward, laterally, and, lastly, circularly. At first hands on the hips; to increase work, hands at neck.

(2) Lying on back, hands at neck, lift the legs stretched (very slowly) as far as the vertical; lower them slowly.

(3) Sit on bench about one foot high, feet supported under bed or bureau, bend trunk backward 45°; hands at hips.

These exercises are desirable even in cases in which some portion of the abdominal muscles or tendons have been cut transversely. If a tendency to protrusion appears an operation to reunite the severed tissues will be desirable.

For the past sixteen months I have followed this method of operation and of after-treatment in acute cases. It rarely has been necessary to cut muscular or tendinous fibres. Immediately after the wound has healed, gradual use of the abdominal muscles has been encouraged. Abdominal belts have not been used. The results thus far have been very satisfactory, even in those cases in which the wounds have been left open for drainage.

The "enlarged" McBurney incision does not interfere with drainage. After drainage has been removed and the wound has healed, if the uncut muscles are exercised, while the granulation tissue is soft and pliable, they tend to resume their original position and strength. Thus the space made by the drainage is closed and the separated muscles come into apposition. A patient of this class was allowed eight months after operation to train and enter a boat race, with the best of results to the abdominal walls.

RÉSUMÉ.

Hernia and bulging occur frequently after operation for appendicitis, and result from the separation of muscles and other tissues in the scar. They are very common when drainage has been used.

The muscular and tendinous fibres should not be transversely cut in any appendix operation unless it is unavoidable.

As little drainage material as safety will permit should be used. When drainage is necessary the wound should be closed as far as possible with sutures and the drainage removed as early as safety will permit. If the wound can be closed immediately the tissues should be restored to their normal position by suturing each layer.

Stout belts and trusses are of little value and may even do harm.

The abdominal muscles from the earliest period possible after operation should be developed by appropriate exercises.

If hernia or marked bulging appears, operation for cure is safe and satisfactory.

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Medical Progress.

RECENT PROGRESS IN NEUROLOGY.

BY PHILIP COOMBS KNAPP, A.M., M.D., BOSTON.

THE HISTOLOGY OF THE NERVOUS SYSTEM.[1]

Recent investigations into the fine anatomy of the nervous system have led to certain opinions which may change our views as to the neuron theory, especially as to the point that the connection between the neurons is by contiguity and not by continuity. Apáthy, some two years ago, found in the nervous system of certain invertebrates that in the axis cylinders there were distinct fibrillæ, which had been described by Golgi some ten or twelve years before, imbedded in an interfibrillary substance. These "primitive fibrillæ" he regarded as the conducting element in the nervous system. They grew in two directions: centripetally to the ganglion cell, and peripherally to the sensory, muscular or glandular cell. The fibrillæ, however, end in none of these cells, but the conducting fibrillæ pass through the cells which enfold them. They go beyond the cells and their real termination is unknown. Apáthy distinguishes sensory and motor fibres according to the arrangement of the fibrillæ in the axis cylinder. Many of the fibrillæ coming from the periphery break up into a network of elementary fibrillæ before they reach the ganglion cell, uniting with one another, but they neither end nor begin in the ganglion cell and have no connection with its nucleus. The ganglion cell he regards as the centre of the nervous process, producing a constant current and reacting to the changes caused in this current by external influences.

Bethe[2] has confirmed Apáthy's discoveries by independent investigations on the ganglion cells of the crab and also in vertebrates and man. He holds that since the nerve fibre is not the conductor, but merely contains the conducting fibrillæ, the neuron ceases to be an anatomical and physiological unit; connecting paths between different points of the nervous system run in one and the same neuron, and the old theory of connection by continuity must replace the modern idea of connection by contiguity. In the lower animals the elementary network is probably contained in the ganglion cell, but in higher animals it is wholly outside the cell. He concludes that the neuron is not an anatomical or physiological unit; that there is no comprehensive difference between the protoplasmic process and the axis-cylinder process, and that the relations between the nerve cells and the fibrillæ are probably purely nutritive.

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[1] Mittheil. aus der zoolog. Station zu Neapel, xii, 495, 1897. Ref. in Monats. f. Psych., March, 1899.

[2] Arch. f. mikroscop. Anat., li, 382. Morpholog. Arb. v. Schwalbe, viii, 95.

Apáthy has studied only invertebrates. Bethe has studied merely the fibrillæ in the ganglion cells in vertebrates. Nissl[3] advances the theory, chiefly speculative, that there is a fibrillary network between the cells, and that the gray matter of the nervous system in vertebrates is composed chiefly of this network. Like Bethe, he considers the neuron no longer a unit, but he ascribes to the ganglion cell, which is so closely bound up with the fibrillæ, an important part in nervous functions.

These views have been vigorously attacked by Lenhossék,[4] who admits that fibrillæ exist in the axis-cylinder process, but he claims that Bethe himself has not observed an actual anastomosis between the fibrillæ from two different neurons. Bethe,[5] however, affirms that both he and Apáthy have actually seen such anastomosis and that they have never found the free ends of the fibrillæ. Lenhossék further concludes that the neuron doctrine is not ended, but that it is based on positive anatomical data. No one has yet proved that the data on which it is based are deceptive or artefacts. The sporadic anatomical statements which Apáthy has advanced against the neuron doctrine have all been contradicted, and Apáthy's claim that the elementary fibrillæ form a connecting network in the neuropil is not yet confirmed. Physiology can bring nothing against the neuron doctrine and pathology confirms it. As long as isolated statements about the elementary network are not confirmed by others and found true in vertebrates, the neuron doctrine must be recognized. No one is justified, according to our present knowledge, in claiming that the neuron doctrine has received its death-blow. If a passage of the fibrillæ from one neuron to another should be confirmed, the neuron doctrine can still be held with certain limitations, and we must still hold firmly to the conception that the neuron is genetically derived from the neuroblast and is a trophic-cell territory complete in itself.

MOTILITY OF THE NEURON.

The theory that the neuron has an independent ameboid movement, advanced by Lépine, Rabl-Rückhard and Duval, continues to excite interest, although opposed by such observers as Lenhossék and Ramòn y Cajal. Duval[6] again recalls the modern theory that the connection of the neurons is by contiguity and not by continuity, and argues that their prolongations are susceptible of motion owing to the contractility of the protoplasm. From this a histological theory of sleep, by retraction of these prolongations, has been deduced by Pupin, and by this retraction is also explained the arrest of nervous function leading to acts of inhibition (hysterical anesthesia or paralysis). Pergens has confirmed ameboid movements in the olfactory and retinal cells, and Demoor has noted retraction of the prolongations of the pyramidal cells in fatigue. Duval thinks the theory confirmed by the researches of Manouélian on the olfactory bulb of fatigued mice. He advances the hypothesis of *nervi nervorum*, centrifugal fibres regulating the ameboid activity of the nervous elements and acting upon the junction of two sensory neurons according to the state of attention commanded by the brain. These centrifugal fibres have been discovered by Manouélian near the glomeruli of the bulb, and he believes that such an arrangement exists elsewhere in the nervous system.

Odier,[7] after an elaborate series of experiments, has come to the following conclusions:

The nervous cell of the spinal cord is susceptible of motion, and by powerful fixation agents it may be surprised in phases of activity or rest regulated by experiment, and it shows modifications in form, volume and internal structure. The movements are manifested in the protoplasmic prolongations. Completely relaxed in a state of rest, they perform a movement of cellulipetal retraction in a state of normal activity. Artificial excitation accentuates this retraction in direct ratio to its duration and intensity. If this excitation does not produce an electric current, the retraction of the dendrites acts as if due to a current, as the prolongations parallel to the supposed current are alone affected. The cellular body, more resistant than the prolongations, yields gradually to an excitation of a certain duration. It causes equally a retraction in the direction of the nucleus. The nucleus retains its normal form longer than the prolongations and the cell body. In the advanced stages of excitation it is the seat of a manifest turgescence, which persists even after the cell body has begun to retract, but it too retracts on prolonged excitation. The chromatin is actually consumed; it is represented in a state of rest by masses regularly distributed, but they become asymmetrical after moderate excitation. If the excitations be violent and short the chromatin attains its maximum of colorability, but if the action be prolonged the colorability rapidly diminishes. The state of fatigue and exhaustion which follows extreme excitation is accompanied by retraction of the prolongations, progressive reduction of the chromatin, retraction of the cell body, later by retraction of the nucleus, and still later by retraction of the nucleolus. The chromatic points contained in the nucleus are the most sensitive to excitation. Their number decreases rapidly in direct ratio to the activity of the cell.

ARTERITIS IN NEUROPATHOLOGY.

Coulon,[8] at the Congress of French Alienists and Neurologists, has presented an excellent review of the influence of arteritis in causing pathological changes in the nervous system. He decides that, in the great majority of cases, if arteritis be added to lesions of the nerve cells, we are not authorized in considering arteritis as the cause of the nervous disease; but, although the rôle of arteritis is limited in the pathogeny of disease, it is very important as the direct cause of certain accidents: aneurismal dilatation, arterial rupture and thrombotic obliteration. A tissue does not need, in order to perform its functions normally, all the blood brought to it by the vessels, so that a considerable diminution of the vessel's calibre is compatible with normal functions. When the organ enters into greater activity, demanding increased blood supply, it may still not need all the blood that normally can be brought to it, but if the calibre of the vessels be diminished the organ may be normal in repose, but in exaggerated activity it will show phenomena of intermittent claudication. If the calibre of the vessel be wholly obliterated, there will of course be complete ischemia and necrobiosis in the region supplied by the obliterated vessel. If an aneurism be produced by the arteritis the phenomena observed will be due to the presence of the enlargement or aneurismal tumor or to the rupture of the aneurism, the chief cause of cerebral hemorrhage. Finally an embolus may produce thrombotic obliteration with its consequences. The rôle of arteritis in the pathogeny of nervous disease must be ascribed almost wholly to these accidents and their consequences. The influence of arteritis in the production of sclerosis is only secondary. Sclerosis is due to processes of infection or intoxication acting upon the nerve cell or the connective-vascular system, not by affecting the vessels primarily, but by affecting the other tissues together with the vessels, both arteritis and sclerosis being manifestations of the same infection or intoxication. The degree of hereditary or acquired cellular degeneration may account for the predominance of the lesions in the arterial system or the nervous elements. Intoxications generally have little action upon the arteries as the initial point of attack, but they probably have a greater influence upon existing arterial lesions. Their action, however, is uniform upon all parts of the arterial system, so that we must beware of ascribing to intoxication other arterial lesions of a circumscribed nature. In most cases the arterial lesions of the nervous system are lesions of endarteritis having the character of a local process. Their involvement of the neighboring nervous elements is to be explained only by propagation of inflammation if the arterial lesions be primary; but in most cases the arterial and nervous lesions are concomitant, rising from the same pathogenic influence, most commonly infection. This fact explains why a pathogenic cause, affecting all the elements of an organ, may determine by very variable localizations of the infection, local lesions in which we find vascular alterations by the side of alterations in the nerve cells, while the neighboring regions may be nearly or wholly exempt. The violent attacks which cause rapid necrosis of the elements determine in nervous tissue all the characters of acute inflammation. In most infectious diseases which attack the nervous system the arteritis is concomitant with the nervous lesion but does not create it. In slower inflammations the two lesions may march side by side, with greater predominance in the arterial or the nervous system, but still being independent. In diseases of a more or less systemic character the trouble is not due to arteritis. The degenerative lesions of white columns of fibres are due to lesions of their cell centres; but in the affected regions the arteries sharing in the inflammatory process naturally affect in the distribution of their lesions a topographical disposition like that of the affected region. In chronic inflammation of nervous centres ending in sclerosis, which is never of uniform extent in the organ but affects certain territories in particular, often to the exclusion of others, the sclerosis is the consequence of inflammatory processes, often repeated, determining at the same time reactions on the part of the vessels and on the part of the nervous elements in these territories; but the sclerosis is not due to the arterial lesions. In the pathology of the nervous system the rôle of arteritis is almost wholly included in that of the secondary lesions to which it may give rise: aneurismal dilatations and the local phenomena which they determine; diminutions of calibre due to thickening of the arterial walls, which may cause intermittent claudication and ischemia; embolic or thrombotic obliterations which cause foci of softening; and finally ruptures of arteries with their attendant accidents. Aside from these accidents arterial lesions, even though far advanced, may be attended with no symptoms.

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[3] Münch. med. Wochenschr., Nos. 31–33, 1898.
[4] Neurolog. Centralblatt, Nos. 6, 7, 1899.
[5] Loc. cit., No. 12, 1899.
[6] Revue scientifique, March, 1898.
[7] Revue méd. de la Suisse romande, February, March, 1898.
[8] Revue Neurologique, August 30, 1898.

PLANTAR REFLEX.

Collier[9] has studied the plantar reflex in one hundred normal adults, one hundred normal children and three hundred cases of nervous disease and his investigation confirms the opinions of Babinski, Von Gehuchten and Brissaud. In normal adults, after gentle stimulation of the sole of the foot with the finger nail or a soft quill, the following order of contraction of the muscles was observed: (1) contraction of the tensor fasciæ femoris, sartorius and adductors, and flexion of the hip; (2) flexion of the four outer toes (sometimes 1 and 2 are simultaneous, and rarely the order is reversed); (3) dorsiflexion of the ankle; (4) flexion and adduction of all the toes; inversion of the foot by the tibialis posticus; flexion of the knee; (5) contraction of calf muscles; (6) contraction of quadriceps. This normal form of the reflex characterized by flexion of the toes and marked early action of the tensor fasciæ femoris he calls the "flexor response." In infants, however, the earliest response, in the normal reflex, is in the great toe, which is drawn back; this is followed by extension and spreading out of all the toes, with eversion of the foot, dorsiflexion of the ankle, and subsequently, flexion of the hip and knee. This form, "infantile response," is also seen in the monkey. In lesions of the pyramidal tract the response is similar to the "infantile," but it is more deliberate; extension of the great toe precedes all other movements, followed by extension of the other toes and dorsiflexion and inversion of the ankle; the tensor fasciæ femoris does not contract early; the tibialis posticus and anticus and the peroneus longus contract strongly, increasing the plantar arch and fixing the ankle, which moves much less than with the normal reflex. This he calls the "extensor response." With slight lesions of the pyramidal tract combinations of flexor and extensor responses may occur. The plantar reflex is probably never absent in healthy subjects. In infants the "infantile response" persists until the establishment of complete volitional control of the legs between the second and third year of life. In sleep the reflex is diminished, but the form is preserved, except that in some children up to the age of twelve the "infantile response" returns during deep sleep. In almost all cases of lesion of the pyramidal tract the "extensor response" above described is noted. This change in the reflex is one of the first signs to appear and is the last to disappear when the lesion is temporary. It may be the only unequivocal objective sign of a lesion of the pyramidal system. It is never found under other conditions, except in the increased reflex excitability of the cord due to tetanus or large doses of strychnine, one-sixth to one-third of a grain, and is a sign of great clinical value. In cases of total transverse lesion of the cord the "extensor response" is the only reflex phenomenon present in the lower limbs. In functional cases the reflex is hard to elicit and there is often no response in the foot, but the hip muscles usually respond; the form is the "flexor response." In tabes the reflex was absent in one-fifth of the cases; the form is the "flexor response," but it is often confined to the hip muscles. In peripheral neuritis the reflex when present is the "flexor response," which may be confined to the hip muscles. In cerebral and cerebellar tumors the "flexor response" occurs, if the pyramidal tract be not involved. In neurasthenia, chorea, paralysis agitans, poliomyelitis, myopathy and sciatica the "flexor response" is found. Pes cavus is often found in lesions of the pyramidal tract. It is intimately associated with the "extensor response" and is produced by a state of reflex hypertonicity preponderating in these muscles which respond most vigorously in the plantar reflex. In all such cases of pes cavus evidence of increased tone in certain muscles can be demonstrated. The theory that the pes cavus of spastic conditions is due to weakness of the interossei is not justified.

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[9] Brain, xxii, 71, No. 85, Spring, 1899.

SPONDYLITIS DEFORMANS.

Under the name of *spondylose rhizomélique*, Marie [10] has described an affection characterized by the coincidence of a complete anchylosis of the spine with a more or less pronounced anchylosis of the proximal (root) articulations of the limbs, the small distal articulations remaining intact. The hip-joint is most affected, the arms preserving fair movement. The spine is anchylosed so that the upper part is bent forwards, and the face looks forwards and downwards. The thighs are flexed on the trunk, so that the patient is obliged to flex the knees to preserve his equilibrium. The thorax is flattened and the ribs are motionless. There is considerable pain, chiefly in the sacral but later in the cervical region, but there are no indications of acute inflammation. Marie and Levi [11] later report an autopsy on one of these cases. There was no marked ossification of the intervertebral discs, but the yellow ligaments were ossified almost completely throughout their whole length; the articular processes were united by bony anchylosis; the spinous processes were enlarged and showed a tendency to union, and the ribs were united to the vertebral bodies and the transverse processes. Radiographs of other cases show similar conditions. The prognosis is extremely grave, the disease making continual progress in spite of the most careful treatment.

The condition described by Marie had already been noted by Strümpell in the first edition of his text-book in 1884, and other cases had been reported by him [12] and Bechterew.[13] Strümpell's cases had comparatively little pain, the spine was straight and the smaller joints were not involved, unlike arthritis deformans. Bechterew had also noted slight paresis, diminished sensibility and various paresthesiæ. Bechterew, in subsequent communications, [14] points out that his cases by the presence of kyphosis, pain, sensory disturbances and certain root symptoms hinting at involvement of the cord, and by the absence of anchylosis of the hip, differ from those reported by Strumpell, Marie and others, and that in his cases heredity, trauma and syphilis seem more important etiological factors than rheumatism. He reports various cases showing symptoms of the two types of affections, which he calls "rigidity of the spine with kyphosis," and "anchylosis of the spine and extremities," the latter corresponding to the type described by Strumpell and Marie. In an autopsy of a case of the first type he found anchylosis of the spine and marked degeneration in the nerve roots and spinal ganglion, with a chronic spinal meningitis. The anchylosis did not involve the articulations of the spine, but the intervertebral discs had atrophied and the anterior portion of the bodies had become anchylosed. Bechterew regards these vertebral changes as secondary to the changes in the nerve roots and meninges and analogous to the vertebral changes seen in syringomyelia.

TORTICOLLIS.

Redard,[15] in a recent monograph, has studied the various forms of torticollis. Congenital torticollis is comparatively common and follows bad positions of the fetus, perhaps kept up by amniotic adhesions, the head being kept in such a position that the two ends of the sternomastoid are approximated for a long time. The frequency of congenital torticollis on the right side coinciding with the positions most commonly observed, its association with difficult labor, breech presentations, etc., and the coexistence of craniofacial hemiatrophy and other deformities, favor this view. Beside the forms of acquired torticollis due to cicatrices, muscular or articular troubles, etc., there is a true nervous torticollis. Lesions of the nervous centres (tumor, hemorrhage, softening), may give rise to it, or it may develop, on the side opposite the lesion, after compression of the brachial plexus or other peripheral lesions. Spasmodic torticollis must be considered as a spasmodic affection of several muscles rather than of one muscle or the muscles supplied by one nerve; it is independent of any anatomical lesion, and the etiology is still obscure, but, in most cases there are indications of neurotic heredity, degeneration, migraine, neurasthenia, etc. The spasm may be produced by various causes and is sometimes associated with general diseases. It is probably of cerebral origin; but although Brissaud holds that it is wholly psychical, a localized inhibition of the will, and that a mere touch may check it, Redard considers that it is not yet proven that spasmodic torticollis is purely psychical, since other spasms of an organic origin may at times be checked by equally slight influences. Torticollis with quick clonic spasms is usually a manifestation of some variety of tic or of paramyoclonus; true spasmodic torticollis may sometimes be a symptom of hysteria. Paralytic torticollis may exist, but it is extremely rare. Redard considers that gymnastic exercise plays an important part in all methods of treatment, but he gives a fairly complete account of the various forms of surgical intervention, Kocher having reported seven recoveries out of 12 cases where he cut all the muscles affected, and Isidor having collected 35 cases of resection of the spinal accessory, with six cures and 14 improvements.

Feindel [16] endorses the gymnastic treatment of spasmodic torticollis, subscribing to Brissaud's theory of its psychical origin. His treatment consists of simple exercises, gradually becoming more complicated, and consisting of exercises of immobility and exercises of movement. In the exercises of immobility the patient at first sits with the chin supported on a rest and keeps the head motionless as long as possible, resting at the first sign of fatigue; later the patient sits without the support, leaning back in the chair, later still he stands and walks, always keeping the head motionless until he begins to feel fatigue. The exercises of movement consist of turning the head to the right or left, bending it toward each shoulder, etc., in different positions of the body. The movements are made slowly, gently and without any brusqueness, ceasing at the first onset of fatigue. Gradually, more complex movements are introduced. The sessions are at first of short duration, two to four minutes, but later they may be increased to ten minutes. They should be repeated five or six times a day, and at least once a day under the direction of the physician. With marked improvement the patient may prolong the session and be left for a time to himself. Mild galvanism for two to five minutes, or light massage, may advantageously follow one of the daily sessions of gymnastics, or they may alternate on successive days. In cases where the patients have been docile and persevering this method has led to complete cure.

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[10] Revue de Médecine, April, 1898.

[11] Revue Neurologique, May 30, 1899.

[12] Deutsche Zeitschr. f. Nervenheilk., xi, 338, 1897.

[13] Neurolog. Centralblatt, July 1, 1893. Deutsche Zeitschr. f. Nervenheilk., xi, 327, 1897.

[14] Deutsche Zeitschr. f. Nervenheilk., xv, 37, 45, 1899.

[15] Le torticolis et son traitement, Paris, 1898.

[16] Nouvelle Iconographie de la Salpêtrière, November 1897.

TUMORS OF THE CORPUS CALLOSUM.

Devic and Pariot[17] have studied the symptoms in 18 cases of tumor of the corpus callosum and have concluded that in some cases a correct diagnosis of the seat of the tumor can be made. In every case but one the growth was a glioma, and as a rule adjacent regions are involved. The symptoms therefore vary in accordance with the variation in the neighboring parts involved. In some cases, owing either to the small size of the tumor or to the fact that neighboring parts are involved so as to give more striking localizing symptoms, a diagnosis is impossible. Devic and Pariot, however, maintain that there are two cardinal symptoms which should lead us to diagnosticate a tumor in the corpus callosum. The first is the early appearance of mental disturbances and disorders of intelligence; the second is the onset of paresis, contracture or convulsions, predominating on one side but involving the other to a lesser degree. These symptoms the authors, after a study of the cases of absence of the corpus callosum, attribute less to the lesion of the corpus callosum itself than to the involvement of the fronto-occipital association fibres or the coronal fibres from the frontal convolutions.

MENTAL DISTURBANCES IN CEREBRAL TUMORS.

Gianvilli,[18] from a study of ten cases of cerebral tumor and a careful review of the literature, concludes that when hallucinations exist in cases of tumor, they indicate an irritation of the corresponding cortical sensory centre, although we cannot affirm positively that the new growth is in the immediate neighborhood of the centre. The more the mental symptoms (torpor, intellectual arrest, failure of memory) manifest themselves in the beginning of the trouble, the more probable it is that the tumor is in the frontal lobe, and especially in the prefrontal region. In tumors in other parts of the brain the mental troubles are of later development, although they do not differ in kind from those observed in tumors of the frontal lobe. The loss of mnemonic verbal images, auditory or visual, produces a special form of dementia (graver in loss of auditory images) and indicates a definite localization in the left temporal or left parieto-occipital region. These mental troubles indicate a more or less intense and more or less diffuse alteration of the cortical morphological elements. Tumors of the corpus callosum are always (?) accompanied by mental disturbances. The modifications of sentiment which may appear in the course of a cerebral tumor have no localizing value. When the new growth presents the picture of paralytic dementia the growth is most probably in the frontal lobe. When ideas of grandeur exist the growth is most probably in the frontal lobe. A tendency to childishness or marked alterations of character indicate that the tumor is in the frontal lobe, and, by preference, in the right frontal. When, in a case of cerebral tumor, there are disturbances of the adaptation of means to the end in motor acts of a higher order, the growth is probably in the cerebral hemispheres in the neighborhood of the psychomotor zone, and by preference in the frontal region.

SENSORY DISTURBANCES IN HYSTERIA AND EPILEPSY.

Richter[19] has made a careful study of the disturbances of cutaneous sensibility and of the special senses in 71 cases of hysteria, 49 of epilepsy, and eight of hysteria and epilepsy combined (hystero-epilepsy) and has come to the following conclusions: Concentric limitation of the visual field in hysteria and epilepsy is, as a rule, a result of subjective nervous symptoms and psychical disturbances. Attacks by increasing these symptoms cause a greater limitation of the visual field. By psychical influence on the patient while using the perimeter we may as a rule diminish the limitation and thus obtain a normal visual field. An objective contraction of the field, independent of these morbid signs, was not found in any one of the 128 cases; the visual field for colors was usually not altered in position even in hysteria. A transitory change in the order of color perception is occasionally seen in the same patient. No form of disturbance of sensibility, not even hemianesthesia, has *a priori* a differential diagnostic significance in hysteria and epilepsy. A regular onset of anesthesia after hysterical attacks was not confirmed, but sensory disturbances are apt to come on as the condition grows worse and disappear as it grows better. Sensory disturbances come on without any rule after epileptic attacks; they are rare and without significance.

AGRAPHIA.

Since the days of Trousseau a considerable number of writers have maintained that there was no separate writing centre, but that writing was performed only through the medium of Broca's speech area, and that agraphia occurred either as the result of the destruction of this area or of the complete destruction of the visual area in the angular gyrus. This theory has been vigorously maintained in recent years by Dejerine and his pupils and in this country by Collins.

Gordinier[20] has recently reported a case which completely overthrows this theory and establishes beyond dispute the existence of a writing centre. The patient was a woman of thirty-seven, who began to suffer from dizziness and later from severe headache and vomiting. About three months later she noticed some failure of vision and numbness in the right arm. Optic neuritis was present, and paresis of the right external rectus muscle. The right hand was slightly weaker than the left, but the fine and coarse movements of the hands were normal, and there was no sensory disturbance. The patient was able to recognize and to name accurately, with her eyes closed, any familiar object placed in her right hand. She understood perfectly what was said to her; she recognized familiar hymns; she could repeat orders from dictation, and speak voluntarily, without the slightest hesitation, and always correctly. She could read correctly, with the aid of glasses, ordinary print or handwriting, and she recognized numerals at once. She had, however, a total inability to write; although she understood written language perfectly, and although she could read to herself or aloud, she could not write voluntarily or form correctly a single letter, and she could not write from dictation or copy. She held the pen in a perfect manner and performed all the movements as if to write, but her writing consisted of nothing more than a series of united curves. Before her illness she could write perfectly. Later on there was some slowness in cerebration, but no other symptoms developed. An operation was attempted, but after a trephine opening was made her condition became so alarming that the operation had to be suspended, and on coming out of the ether her right arm was found to be paralyzed. Two days later she became unconscious and died.

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[17] Revue de Médecine, December, 1897.

[18] Polyclinico, July 15, 1897.

[19] Archiv für Psychiatric, xxxi, 574, January, 1899.

[20] American Journal of the Medical Sciences, May, 1899.

At the autopsy a glioma, about two centimetres in length, was found at the foot of the second frontal convolution, being distinctly separated from the arm area by the precentral sulcus. Broca's convolution was found perfectly normal, as was its associated centrum ovale; the supramarginal and angular gyri, with their associated white matter, and the convolutions and white matter of the occipital and temporal lobes, were also normal. The brain elsewhere showed no pathological changes.

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Reports of Societies.

NEW HAMPSHIRE MEDICAL SOCIETY.

The one hundred and eighth anniversary meeting was held in the Grand Army Hall, Concord, May 25 and 26, 1899. The Association was called to order at 11 A.M., the President, **Dr. George H. Saltmarsh**, of Lakeport, in the chair. There were one hundred and fifty present, which is a large attendance for a small State like New Hampshire. Prayer was offered by the Chaplain, **Rev. John Vannevar**, of Concord.

The reading of the records of the last meeting was dispensed with, the same having been published and distributed. The report of the Committee of Arrangements by its Chairman, **Dr. D. Edward Sullivan**, of Concord, was followed by the report of the Chairman of the Executive Committee, **Dr. F. A. Stillings**, of Concord.

The Maine, Massachusetts and Vermont Medical Associations were represented by delegates, who were the guests of the Society and were invited to take part in the proceedings.

The usual committees were appointed by the President, when the meeting was declared open for the reading and discussion of papers.

Dr. Chancey Adams, of Concord, presented the first paper, which was a dissertation on

INSANITY IN ITS RELATION TO CRIME.

Dr. Adams, having had considerable experience in an institution for the care of the insane at Elmira, N. Y., made his paper very interesting in bringing to the attention of the Society many conclusions and deductions that had been made plain to him in his association with this class of people. He pointed out that it was not always easy to differentiate between the sane and the insane; that hereditary influence, especially in certain directions, had much to do with the development of certain forms of insanity. He showed that environment and centralization had much influence in child life to beget crime and other traits of character that might be avoided with better surroundings. Instances were given in which special degeneration seemed to be intensified when the mind tended to delusions of a religious, political or erotic character. The influence of a prison with the environments and associations of life in a cell formed a picture worthy of study by the philanthropist.

The discussion was opened by **Dr. Frederick L. Hills**, assistant in the New Hampshire Asylum for the Insane, who very graphically described our advancement in the knowledge of insanity and its causes, and gave it as his opinion that the conclusions of experts in this form of disease were now much better understood and recognized by the courts than ever before. He gave some characteristics of people who had been declared insane by the courts, yet he was not prepared to say that all such people should be cared for in an asylum instead of prisons. To the general practitioner, this paper and discussion was very interesting as showing that the judgment of experts in insanity is in a certain degree in accord with that of the public, in that certain forms of this disease require prison life rather than a temporary residence in an asylum.

Dr. George I. Cutler, of West Swanzey, gave a report on

SOME FORMS OF PARALYSIS OBSERVED IN COUNTRY PRACTICE.

This paper was a *résumé* of certain forms of nervous diseases as observed by the general practitioner, and some of the cases reported were but initiatory symptoms of those recognized in a more pronounced degree by the author of the first paper.

In the discussion of this paper, **Dr. Prouty**, of Keene, gave one condition that causes paralysis, which has not been explained in the text-books. He referred to a contusion of the circumflex and musculo-spiral nerves, caused by accidents. Since the advent of the bicycle these cases have become more numerous, as accidents are constantly occurring.

Dr. H. L. Stickney, of Newport, reported a case of

SEVERE INJURY TO THE HAND,

in which he achieved much success in a conservative treatment instead of destruction of tissue; in other words, asepsis, antisepsis and cleanliness combined with skin grafting and hypnotism to allay nervous irritability succeeded in giving the man a useful arm and hand, that under ordinary circumstances would have been sacrificed by amputation. The possibility of grafting the entire finger with equal success was suggested by Dr. Stickney.

Dr. Emdon Fritz, of Manchester, in a report on

TYMPANO-MASTOIDITIS,

described the causes and symptoms of this form of disease. In detailing the usual symptoms to be found in such cases, he said that temperature was an uncertain symptom and could not always be relied upon. He gave the common forms and varieties of this formidable disease, described the operations necessary for relief of the trouble, and described also many of the disagreeable sequences which result when the disease is left to itself or improperly treated.

Dr. O. B. Douglas, of Suncook, opened the discussion on this paper, and said that it was well that we should know that the natural course of these symptoms was an inclination to suppuration of the middle ear; and that it was necessary to understand the anatomy of these parts before commencing an operation. He described the possibility of wounding the facial nerve and its sequence — facial paralysis. He advised the use of sterilized gauze after the complete sterilization of the parts; and incidentally mentioned that in the use of the pure carbolic acid it was only necessary to use alcohol immediately afterwards to prevent the destruction of the tissue by the acid.

Dr. N. E. Guillet, of Manchester, read a paper on

VAGINAL HYSTERECTOMY, AND WHEN INDICATED.

He described the manner in which this operation was done in the French hospitals, and advised that in many instances vaginal hysterectomy instead of laparotomy should be performed.

Dr. F. A. Stillings, of Concord, in opening the discussion on this paper, said that hysterectomy is never indicated except after the microscope has shown that the patient is suffering from cancer; then after the diagnosis is fully determined, the question to be decided is what operation can we do with the most certainty of removing the entire disease. In his opinion abdominal hysterectomy was preferable to vaginal hysterectomy in cases of that kind.

Dr. J. M. Gile, of Hanover, presented a paper on

TUBERCULAR DISEASE OF THE URINARY APPARATUS.

He said the disease was not necessarily of short duration, but similar in its results to that of tubercular deposits in other parts of the body. He urged that careful diagnosis be made with the aid of the microscopist and bacteriologist. Like tubercular disease of the lungs it may prove to be rapidly fatal or run an indolent course.

Dr. H. L. Kingsford, of Hanover, described the methods of

INOCULATION OF ANIMALS AND THE RESULTS OBTAINED.

Dr. A. W. Shea, of Nashua, reported

CASES OF MULTIPLE PREGNANCY.

He gave statistics which showed that there were nine cases of multiple pregnancy out of seven hundred reported.

Dr. Edmund E. Hill, of Suncook, reported

A CASE OF PUERPURAL ECLAMPSIA WITH COMPLICATIONS.

The case was interesting in the fact that the patient had a temperature of 99° to 103° during the whole illness, being confined near the first of May and dying June 12th.

Dr. Walker, in discussing the paper, corroborated the statements of Dr. Hill, and gave it as his opinion that the eclampsia was the result of disease of the kidneys.

Dr. A. C. Heffenger, of Portsmouth, read a paper on

HEMOSTASIS IN INTRAPELVIC SURGERY,

reporting his personal experience in operations involving intrapelvic tissues, and basing his conclusions upon his observations in fifty-four cases. The key-note to success in intrapelvic surgery is absolute control of hemorrhage, and in his practice the use of properly sterilized catgut is preferred to that of silk or tendon suture. Each step of the operation was illustrated by crayon drawing.

Dr. E. F. McQuesten, of Nashua, in discussing this paper, said that death by hemorrhage can be averted, other causes cannot, therefore it is important that any one attempting the operation should thoroughly understand the anatomy of the pelvis, and should always be certain that he has control of the possibility of hemorrhage.

Dr. John D. Quakenbos, of New London, read a paper on

POST-HYPNOTIC SUGGESTION IN THE TREATMENT OF SEXUAL PERVERSIONS AND MORAL ANESTHESIA IN THE YOUNG.

He gave his personal experience in the use of hypnotism in such cases. An abstract of this would fail to do justice to the paper.

This was discussed by Dr. W. T. Smith, of Hanover, and Dr. J. H. Neal, of Rochester.

Dr. William Varick, of Concord, read a paper on

EYESIGHT OF SCHOOL-CHILDREN.

It was discussed by several medical gentlemen present and by Mr. L. J. Rundlett, superintendent of the schools of this city.

Dr. Russell Wilkins, of Concord, read a paper on

THE MEDICAL PROFESSION AND THE STATE LIBRARY.

He described the advantages to be obtained by having a large and well-appointed medical library under the care and direction of the State Librarian in this city.

The discussion of the paper was opened by Dr. Parker, of Concord, and participated in by the Librarian of the State Library and various others who were interested in this work.

During the evening of the first day, the profession in Concord united in entertaining the Society. Through the efforts of the Committee of Arrangements, J. Milnor Coit, Ph. D., of S. Paul's School, was secured to give a very interesting lecture on the properties of

LIQUID AIR,

which was illustrated by stereopticon views. A large audience enjoyed his lecture very much, at the conclusion of which the members of the Society and their friends were entertained by the profession in Concord for an hour or more at the New Eagle Hotel.

Other papers were read by title, referred to the Committee on Publication and will appear in the *Transactions*. The report of the Council was read and approved. The report recommended thirty new applications for membership, of which over twenty were present and signed the constitution, and the others were given until the *Transactions* are ready for press to complete their membership.

The following officers were elected: President, Charles R. Walker, M.D., Concord; Vice-President, William T. Smith, M.D., Hanover; Treasurer, M. H. Felt, M.D., Hillsborough Bridge; Secretary, Granville P. Conn, M.D., Concord. Executive Committee: Dr. F. A. Stillings, Concord; Dr. George D. Towne, Manchester; Dr. W. T. Smith, Hanover; Dr. F. E. Kittredge, Nashua; Dr. Ira J. Prouty, Keene; Dr. A. C. Heffenger, Portsmouth; Dr. G. W. McGregor, Littleton. Anniversary Chairman, Dr. M. S. Woodman, West Lebanon; Necrologist, Dr. John J. Berry, Portsmouth. Committee of Arrangements: Dr. D. Edward Sullivan, Concord; Dr. F. W. Grafton, Concord; Dr. Sibley G. Morrill, Concord; Dr. A. K. Day, Concord; Dr. George H. Parker, Concord.

A council of twenty members and a board of censors, consisting of ten members, were also elected.

At 12 o'clock the President delivered his Address, which was an able and interesting paper, in the course of which he touched upon various evils of social origin, and in graphic language showed that there was a work for philanthropists and reformers outside of temperance agitation.

At the close of the President's Address, the Society adjourned to the New Eagle Hotel, where the anniversary dinner was presided over by the Chairman, Dr. A. W. Shea, of Nashua. The Governor of the State was represented by Surgeon-General F. A. Stillings, who responded to the sentiment, "Military Surgeons of New Hampshire." The profession of law was represented by **Hon. J. J. Doyl**, of Nashua. "The Clerical Profession" had a most eloquent response from the Chaplain, Rev. John Vannevar, of Concord, and "Women in Medicine" was happily responded to by Dr. **Ella Blaylock-Atherton**, of Nashua.

At the close of these exercises the Society adjourned to meet in Concord, May 31 and June 1, 1900.

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AMERICAN MEDICAL ASSOCIATION.

Section of Obstetrics and Diseases of Women. Meeting at Columbus, O., June 6, 7, 8 and 9, 1899.

(Concluded from No. 4, p. 93.)

Dr. M. Rosenwasser, of Cleveland, Ohio, read a paper on

EARLY OVARIOTOMY; ITS PRACTICAL NECESSITY.

The motive of the author was to bring more prominently before the profession the many accidents and complications that happen with small as well as with recent growths of this kind. Neither the size nor the age of the tumor is a criterion of the possible immediate or remote dangers from its presence. In order to emphasize the special points to which attention is called, he gave a brief synopsis of a few typical cases selected to exemplify the various complications that may arise in the early stage of ovarian cystoma, or that may result from delay. His conclusions were as follows: (1) uncomplicated ovariotomy, in proper hands, is a simple operation with scarcely any risks; (2) malignancy, trauma, torsion of pedicle, infection, suppuration, adhesion to viscera, and pregnancy materially increase the difficulties and risk of the operation; (3) to avoid complications liable to occur at any time, the removal of ovarian growths should follow the diagnosis without unnecessary delay. Let the terse axiom, formulated by Dr. Howard Kelly, henceforth be the recognized rule of procedure: "From a practical standpoint all ovarian tumors must be considered as malignant until removed and proved otherwise."

In discussion, **Dr. C. P. Noble**, of Philadelphia, thinks that all tumors should be removed. He had operated on four cases of tumors with twisted pedicles during the past winter. The danger of suppuration occurring makes immediate operation important and often imperative. The consensus of opinion in the discussion was entirely in favor of early operation in all instances of advanced neoplasms.

Dr. Eliza H. Root, in a paper entitled

STUDY AND TEACHING OF OBSTETRICS IN OUR MEDICAL SCHOOLS,

discussed the dangers of childbirth, and advocated more thorough teaching of obstetrics. The teacher must be enthusiastic, earnest and studious. Every case must be studied, and all points of interest elucidated for the benefit of the student. The diameters of the pelvis, the use of the pelvimeter, and abdominal palpation, as a means of diagnosis, should be thoroughly taught. Embryology, as a preparatory study, and later the mechanism of labor and the care of the puerperal woman should be taken up. Manikin drill is indispensable. Abnormal positions, and the management of these, should be gone over slowly. Finally, obstetric surgery and safe knowledge of the forceps should be instilled. All traction with forceps should be used in direction of the pelvic axis. Practical work should be done and recorded before graduation.

In discussion, the importance of thorough obstetric teaching was reiterated.

Dr. W. W. Grant, of Denver, Colo, in discussing

THE PROPHYLAXIS OF UTERINE CANCER,

said he considers that the field of preventive surgical disease is as interesting a study and imperative a duty as preventive medicine is to the general practitioner and sanitarian. This is particularly true in the study of malignant conditions. He quoted the methods of Dührssen and Kelly in treating these suspected cases. Grant says the only safe course is to repair every appreciable lesion of the cervix, without waiting and looking for evidence of either benign or malignant disease. Trachelorrhaphy is not a dangerous operation. With all of the cicatricial and diseased tissue removed, the lips well adjusted and united, the most common condition and cause of cancer of the cervix is eliminated. The desirability of medical supervision during the climacteric, and even before, must be admitted by all in order to meet certain diseased conditions promptly.

Dr. A. Lapthorn Smith, of Montreal, Canada, read a paper on

THE PREVENTION AND TREATMENT OF CANCER OF THE UTERUS.

He believes that uterine cancer is not a hereditary disease, but that it is a contagious disease, probably due to a microbe which does not flourish in healthy tissue, but which luxuriates on tissues of low vitality, such as cicatrices, or in women whose whole vitality is below par. He knows of three cases of cancer occurring in nurses attending patients who died of cancer, and there was no trace of cancer in the family history of any of them. When the contagiousness of cancer is more fully recognized it may yet be possible to stamp it out by isolation of the patients. All lacerations of the cervix should be repaired. If cancer is detected early, while still limited to the angle of the tear or to the mucous membrane of the uterus, total extirpation will usually be followed by cure. If further advanced and the organ is firmly fixed and the disease has extended to the broad ligaments the author prefers to make a thorough curetting and to apply pure carbolic acid to the mucous membranes and then to perform Schroeder's amputation of cervix, which will prolong life.

DR. E. E. MONTGOMERY, of Philadelphia, in a paper,

DOES REMOVAL OF THE OVARIES EXERT A BENEFICIAL INFLUENCE ON THE SUBSEQUENT PROGRESS OF MALIGNANT DISEASE?

discussed the value of oöphorectomy in the treatment of malignant disease of the mammary gland, and the theory that the presence of the ovaries exerts an inhibitory influence on the development of such disease. If the patient is liable to the genesis of cancer when inhibition is partially removed, will she not be much more subject to its ravages when inhibition is entirely destroyed? This theory logically would contraindicate rather than render advisable the removal of the ovaries for malignant disease. The ovaries may exert an influence upon the circulation in the vicinity of the reproductive organs through the vasomotor system, and a careful consideration of the subject forces him to the conclusion that the apparent relief is afforded through the vasomotor system. Further experience is required to demonstrate not curability but sufficient palliation and delay in the processes of disease to compensate the patient for the discomfort of the additional operation. Such an operation will only be of service if done during reproductive activity.

In discussion, DR. FREDERICK HOLME WIGGIN said he believes that trauma plays an important part in the etiology of cancer, and that soon it will be proved to be an infectious disease. A common error is the belief that cancer will not develop until after menopause. Patients should know that the period of danger is between the ages of forty and fifty years. All menstrual irregularities should be considered as an indication for local examination. He condemns microscopic examination long before the time of operation, as the rapidity of the growth is increased.

DR. GOLDSPOHN thinks that Emmett's operation of trachelorrhaphy is not sufficient, as only the superficial tissue is removed, and that amputation of the cervix by Schroeder's method is the best.

DR. RIES thinks that it is a mistake to consider that laceration of the cervix is the causing factor in carcinoma. He agrees with Montgomery that removal of the ovaries is useless in cancer of the breast. It is folly to think of doing oöphorectomy on everything, from corns to headache.

DR. BONIFIELD thinks laceration of the cervix predisposes to cancer by prolonged congestion and irritation.

DR. MITCHELL thinks cancer rarely occurs in women who have not borne children or been the victims of abortion. He noted the rapid increase in the frequency of cancer.

DR. GILLIAM does not think the family physician is competent to determine the presence of cancer, and that each should be submitted to the expert for diagnosis. He thinks it is not laceration but the traumatism that is the etiologic factor.

DR. H. A. KELLY thinks we know nothing about the etiology of cancer. He does not think that microorganisms are responsible for the disease. What we want is a *modus vivendi* — something to do pending the settlement of the question of causation. Careful study of injuries of the cervix produced by childbirth should be made. Every case of atypical hemorrhage should be investigated. Microscopic examination of scrapings or a fragment of tissue can be done in fifteen minutes, or while the patient is under anesthesia. He has abandoned the radical operation with extirpation of the glands as being impracticable, too difficult and dangerous, and without good results. Uterine bougies should be inserted to aid in doing more thorough work. He considers the analogy between cancer of breast and the uterus is an erroneous one.

DR. MONTGOMERY believes that at present we do not know the cause of cancer. He thinks cancer of the body occurs in 10 per cent. rather than only two per cent., as usually stated in text-books of cases of cancer of uterus. By examining patients more frequently, as a rule, the general practitioner would soon gain the knowledge necessary to make early diagnosis. Intrauterine examination also should be practised in doubtful instances, the uterus dilated, the finger introduced, and cavity explored. Infection of the wound is often due to a secondary infection, and every precaution should be taken to avoid such infection.

DR. HENRY P. NEWMAN, of Chicago, read a paper on

EXTIRPATION OF THE UTERUS, ITS APPENDAGES, TUMORS, ETC., WITHOUT LIGATURES OR RETENTION CLAMPS; DEMONSTRATION OF A NEW INSTRUMENT FOR HEMOSTASIS, WITH A REPORT OF CLINICAL CASES.

The prime object of the angiotribe which he described is to produce absolute hemostasis and do away with ligatures or foreign bodies in the operative field. The medical profession has been struggling with this problem for a long time. It is apparent to all that the ligature is not ideal or even desirable, constituting, as it does, a foreign body, always in the nature of a complication in surgical wounds. The ecraseur was one of the early manifestations of an epoch to do away with the time-honored ligature. Its revival, in a modified form, is not without some merit. The clamp and cautery have held their place in surgery for a considerable period, and in spite of some advantages always claimed for the ligature in hemorrhoidal operations, it is probable that the cautery operation is still done an equal number of times by the ligature method. The retention clamp, likewise, has been a life-saving substitute for the ligature, and has been a means of revolutionizing pelvic surgery, notwithstanding it is now giving way to better devices. The many methods of perfecting the absorbable sutures both in material used and manner of preparing only go to show that the profession is fully alive to the importance of doing away with the conventional ligature and suture. The Keith-Skene electric heat and Doyen crusher are among the latter methods that bid fair to solve a long-sought problem. It must not be understood that the leaving of foreign bodies in the wound is the only objection to the ligature, while it must be conceded that it is an all-important argument against its use. Other vital objections still remain: (1) Uncertainty as to slipping; (2) uncertainty as to asepsis; (3) shrinkage in the stump, thereby loosening the constricted vessels; (4) bunching together tissue, and thereby dragging upon and displacing neighboring structures. He recognizes that in the individual ligation of vessels some of the above objections would not apply; but this very desirable method of using the ligature is not always possible, or at times advisable. Again, the over-towering advantages of its substitutes (here particular reference is made to the Keith-Skene and Doyen methods) apparently leave little room for argument: (1) Immediate and absolute hemostasis; (2) perfect antisepsis; (3) an undisturbed stump, for example, no bunching of pedicle or dragging from neighboring structures; (4) the operative field free from foreign body; and (5) with the improved instruments recently constructed by Dr. Newman, promptness of execution and adaptability to nearly all tissues and surgical work.

Dr. Newman then gave the general outlines of the instrument and exhibited many cuts. His modification differs from the Thumin instrument in having longer blades, enabling the operator to include the entire broad ligament or large pedicle at a single application. The blades are narrower, so that less space is required in their adaptation to the part, and they can grasp shorter pedicles, or even sessile growths, with greater facility. At the end of one of the blades is a slightly projecting bite preventing the grasped tissue from extending beyond the blades, as it is apt to do in closing the Thumin instrument. A new or modified Thumin lever has been added to the instrument as a separate attachment. A combination mortise lock allows of an interchange at will of the lever, in applying the compression force, to that of the cross-bar and screw. While the cross-bar and screw will be found most desirable for general use, the lever has great power of compression and can be applied with a single motion or movement of the hand. This new or modified lever not only has the interchangeable lock in common with that of the cross-bar and screw referred to, but is simple in construction and adaptation, and allows of much wider separation of the blades during their application. The Thumin lever requires a partial closure of the blades and necessarily previous engagement of the pedicle or tissue to be clamped before adjusting the lock. This obstacle is overcome by the Newman instrument. Dr. Newman reports 16 cases successfully treated with the aid of his new instrument.

Dr. W. C. Bowers, of Decatur, Ala., in a paper on

NECESSARY ABORTION,

detailed the varied indications for the performance of necessary abortion. The reasons for premature emptying of the uterus are many, but fortunately very few of them act with any degree of frequency, and the indications are rarely absolute. Nephritis, advanced tuberculosis, aneurism, valvular lesions of the heart, chorea gravidarum and peripheral neuritis of pregnancy were among the indications mentioned. Probably the most common reason for interrupting pregnancy is hyperemesis gravidarum, which should not be allowed to proceed to extreme exhaustion. Pain beneath the sternum, and coffee-ground vomiting are other causes. To be pathologic the nausea must persist after the patient has arisen or be experienced when the patient is in the recumbent position. Several cases were reported illustrative of the subject discussed.

Dr. C. L. Bonifield, of Cincinnati, read a paper entitled

TREATMENT OF PATIENTS AFTER ABDOMINAL SECTION.

He considers spartein sulphate of decided value as an immediate stimulant to the heart, while digitalin may be used for a more lasting effect. The physiologic action of alcohol is so nearly identical with that of ether and chloroform that its utility is to be doubted when the system is saturated with one of these agents. Calomel is the most generally satisfactory purgative. He thinks the rectal tube is of little value for the relief of gaseous distention. Morphine constipates the bowels, checks elimination and almost always produces more or less nausea. In its place he uses codeine phosphate and chloral hydrate by the rectum for the relief of pain. To relieve the intolerable pain he employs the rectal injection of normal salt solution, a half-pint being given every two to six hours. A half-ounce of very hot water by the mouth may be allowed every hour after the first four. Bonifield considers that any surgeon who does a capital operation owes it to his patient, his profession and himself to see that everything possible is done to secure recovery. For this reason, only when it is absolutely unavoidable should an abdominal section be done in the country and the after-treatment left to a practitioner inexperienced in this work.

Dr. D. T. Nelson, of Chicago, described

THE NATURE, CAUSATION AND TREATMENT OF SHOCK.

Dr. Frederick Holme Wiggin, of New York, read a paper on

ACCIDENTAL WOUNDS OF THE FEMALE BLADDER.

While accidental wounds of the bladder occurring in the course of operations are to be deplored, and guarded against by every possible means, when they do occur the knowledge of their existence is of the utmost importance, for, as soon as discovered, they may be treated much in the same manner as simple incisions in any other part of the body. The fear of septic peritonitis has prevented a general application of this fact, but the labor of American gynecologists in proving the safety of closure of abdominal openings without drainage, even when infection is known to exist, has done much to establish on a firm basis immediate suture of wounds of the bladder. There is no more reason why a recent intra-abdominal wound of the bladder should not be sutured and the abdomen closed without drainage than in the case of a wound occurring in the bowel.

FOURTH DAY.

DR. W. TOD GILLIAM, of Columbus, read a paper on

WHAT SHALL WE DO WITH THE UTERINE FIBROID?

He detailed the history of the attitude of the profession towards these growths and painted a graphic word-picture of instances in which tragic consequences on one hand, and beneficial results on the other, had followed surgical intervention for these neoplasms. He believes that the unoffending fibroid should be let alone, unless it is a menace to life, health and happiness, when it should be removed. He argues for greater circumspection and more conservatism on the part of the surgeon. Let the smaller and less mischievous growths alone; they may or may not give trouble in the future; ten to one they will not, but if they should, it will be time enough to consider them when the exigency arises. It is the patient's prerogative to decide. It is a right vested in the human race to incur risk for the betterment of its condition, and women should have the same priceless privilege after a thorough understanding of the condition and the danger of an operation.

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Recent Literature.

Urinary Analysis and Diagnosis. By LOUIS HEITZMANN, M.D., New York. New York: William Wood & Company. 1899.

In this book four-fifths of the space is devoted to the study of urinary sediments in their relation to diagnosis of disease.

The author has a great deal to say in regard to the character of the various cell elements found in urine and of the importance of these cell findings for diagnosis. We do not agree with the pathologists who state that the character of the cells in a urinary sediment is of no value as an aid to the localization of an inflammatory process in a given case. On the other hand, we do not believe that this localization by specific cell findings is possible in the extent which Dr. Heitzmann claims for it.

To diagnose cystitis in a male by the finding of squamous cells with pus, or prostatitis, by neck of the bladder and prostatic cells, is proper, but to diagnose nephritis (catarrhal nephritis) by the finding of small round epithelial cells and leucocytes, independent of the presence of casts, is not. The small, round epithelial cell, to which type the renal cell belongs, may come from several parts of the urinary tract. These cells cannot therefore be called renal cells or the condition in which they are found diagnosed as an inflammation of the kidney unless they are associated in the sediment with casts or definite evidences of renal disease.

A BACTERIOLOGICAL LABORATORY FOR DUBLIN. — A government bacteriological laboratory for Ireland is to be started in Dublin.

PHILADELPHIA HOSPITAL. — Dr. Henry W. Cattell has been elected pathologist to succeed Dr. John Guiteras, who recently resigned.

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THE STUDY OF TROPICAL DISEASE.

IT is becoming more and more apparent that our new interests in tropical countries are forcing upon us not only questions of great political moment, but also numerous problems and responsibilities in the field of medicine. These responsibilities England has long realized in relation to her colonial possessions, with the result that admirable work is continually being done by skilled investigators toward the solution of the problems which tropical diseases offer. Within a year there has been published in London a journal devoted to the study of diseases peculiar to the tropics, and a school has been established whose function it is to fit men for the special medical duties which residence in tropical countries implies. Whatever the merits of the sword may be as a means of civilization, there certainly can be no question that the establishment of hospitals and research laboratories is a distinct mark of progress, which should by all means be encouraged. To see what has already been accomplished we have but to look at the work of the English in India toward combating the prevalent epidemics peculiar to that country. Apart from any definite results as regards etiology, the mere fact that men are in the field who are quite willing to risk their lives in their attempt to get at the fundamental causes of these devastating diseases has an immense moral effect upon the community in which they are working, and upon the world at large. The moment a problem is grappled with, it loses much of its terror. In the case of epidemic disease there can be no question that much of the distress results not so much from the inherent fatality of the disease as from the widespread fear which it engenders among people ignorant of its nature. It requires no great effort of memory to recall the panic, even among well-informed people, which the word "cholera" excited in our own highly civilized communities not many years ago. The fire is never so much to be feared as the wholly unreasoning panic which it is so likely to excite. It was our fortune to be in Berlin during the prevalence of cholera in the neighboring city of Hamburg a few years ago.

It was interesting to note that with all the subdued sense of fear which prevailed, there was an underlying feeling of security that man was, after all, master of the situation, as the event amply proved. It is this sense of relative security and freedom from the demoralization of panic that is always the precursor of progress in the study of epidemic diseases. This has long since been accomplished in regard to all indigenous diseases, from typhoid fever to cholera and small-pox. So far as our own country is concerned, yellow fever even has none of the terrors which were its inevitable accompaniment a few years ago. All this is due to the growth of knowledge. Modern scientific medicine has given us a clue which at least dissolves the mystery surrounding these affections, and opens a wide path of profitable research.

It is clearly evident, however, that with all that has been done in the past, much more remains for the future. Up to this time the United States has held a somewhat unique position in its relation to alien diseases of the character under discussion. We have not had an opportunity heretofore to study them adequately at their source. That opportunity has now come, and there is reason to suppose that it will not be neglected. Even during the continuance of the war with Spain valuable studies were made in relation to the pernicious fevers of malarial type which our soldiers contracted in Cuba. Enough was learned to whet the enthusiasm of the scientifically disposed to a more adequate and complete study of this and allied disorders. As one of the first results of this enthusiasm, we have recently seen an expedition sent from the Johns Hopkins Medical School to the Philippines for the purpose of making a study of diseases prevalent there. That others will follow there can be no question, and we may certainly look for results which sooner or later will have a distinct effect upon the health, and hence civilization, of the islands.

What has already been accomplished in Cuba, through the untiring energy of General Leonard Wood, we are all familiar with. The report comes as we write that yellow fever has practically been wiped out of Santiago, which should be a source of congratulation not only to the chief agent of this triumph, but also to the country he so ably represents. Brilliant as this success is, we need to go deeper, and probe out, if possible, the sources of the disease and all the conditions under which it originates and flourishes.

Such results can only be obtained by systematic work, extending over considerable periods of time and conducted by highly trained specialists. Were adequate arrangements made we have no question that men thoroughly qualified could be found in abundance, who would be quite willing to undergo the hardships and possible dangers which life in a tropical or semitropical country would involve. Here is evidently an opportunity for a true university extension movement, and it is a work which, to our mind, the universities with medical departments might, with great profit, assume. It would be quite possible to establish stations in Cuba, for example, to which might be sent accredited representatives of a university, for the purpose of working out some of the many medical problems which the tropics afford. Such a plan, which would appear not difficult of execution and not of necessity costly, would do much to hasten the time when diseases now dreaded because not understood would be in great measure preventable. To arrive at an adequate prophylaxis evidently means much painstaking study on the spot. With that possibility opened by the establishment of laboratory research stations, we are confident that yellow fever and other conditions, so inimical to health and life in those countries, would be, in due time, relegated to the growing category of preventable diseases.

AS TO CREMATION.

Popular feeling is evidently changing with regard to cremation. Statistics of the last few years show a constantly increasing number of establishments, for the most part connected with cemeteries, where the process of incineration may be carried out. This has been due to an improved public opinion and to the partial lapse of the superstitious point of view to which civilized peoples in this matter have so long been slaves. The strong impulse given to burial by the church has gradually given way to a more liberal conception, which sees in the disposal, by burning, of the human remains nothing inimical to religious ideals.

In addition, however, to this deeply rooted sentiment regarding the immediate destruction of the body after death, there can be no doubt that there is a strong personal feeling that finds comfort in burial, and imagines, at least, it will experience added pain in the rapid destruction of the body. This is no doubt a mere sentiment, engendered and fostered by centuries of custom. That it will finally give way entirely to more rational feelings appears likely. If we permit ourselves a moment to think of the conditions after death of the buried body, we are forced to recognize the unesthetic side of the whole matter, quite apart from considerations of hygiene and public health.

An interesting, if unpleasant, paper was published recently in *Public Health* and quoted in the *Journal of Tropical Medicine*, which brings home to us forcibly the situation. In speaking of soil used for burial purposes, the writer says:

"The suitability or otherwise of a soil for the site of a cemetery depends on the same conditions, — namely, the presence or absence of nitrifying bacteria, its permeability to air, and its humidity and drainage — that determine its fitness or unfitness for the treatment of sewage. In the one class of soils bodies undergo dessication, and the soft parts "return to dust" in the course of a few years; in the other they putrefy, and instead of decomposition and disintegration they remain for years — in fact for indefinite periods — festering masses of corruption. An official inquiry in Germany some years ago showed that in the "loess" four years sufficed for the disappearance of everything but the bones and hair, whereas in stiff wet clays the bodies still presented stinking, putrid masses; and in excavating the churchyard of St. Andrew's, Holborn, pre-eminently a "dead" earth, there was little difference to be seen between the interments of twenty and of two hundred years previously. Yet with few exceptions the situation of the cemeteries around London makes it clear that, whatever considerations determined the choice of the localities, the nature of the soil was not taken into account."

What is true of London is, no doubt, though possibly to a less degree, true of cemeteries everywhere, established many years ago. These facts should be borne in mind, and should certainly have influence in leading to a wider adoption of cremation as a method of disposing of the dead. To the sentimentalist nothing could exceed the repulsiveness of the idea of a putrefying body remaining for years undecomposed into its primitive elements, while to the sanitarian such a possibility brings up visions most unpleasant to contemplate.

The expense of cremation at present stands somewhat in the way of its more universal adoption, but we have no doubt that with a larger demand more adequate means at smaller cost would quickly be provided. We trust the day may be not far distant.

A CLOSER RELATION BETWEEN MEDICAL PROGRESS AND THE GENERAL PRACTITIONER.

Improved methods of medical practice come very slowly into general use. When we hear addresses on recent progress in medicine, we are apt to think that every one will have the benefit of this knowledge, which has become common property by being published to the world. In reality, however, it takes a long time before the community as a whole is benefited by advances in medicine. For example, we hear much about the value and importance of the microscope in modern medicine. Clinical microscopy is held to be one of the great advances made in modern medicine, and yet outside of our large cities how few of our citizens have any benefit from progress made in this direction. The x-ray is another illustration of the failure of our community to reap the advantages of progress in medicine. Although recognized as one of the great discoveries of medicine, very few of our citizens outside of our large cities have the benefit of the x-ray when through accident or disease they might be helped by its use.

Can anything be done to more quickly bring into general use new methods of medical practice? We believe that more might be done through our medical societies and more also by our boards of health. It is of the latter only that we wish now to speak.

Our boards of health have already done a great deal in this direction. The free examination of diphtheria cultures, of sputum for tubercle bacilli, of the blood for the plasmodia malariæ is being used by practitioners in remote country districts. Those practitioners are not merely being helped in the diagnosis of these diseases but they are learning the value of the laboratory and the microscope. Their quick appreciation of these examinations shows that they are ready to employ modern methods if it is possible for them to do so, and that if the facilities for the use of other examinations were to be offered to them, these also would be employed.

All over the State of Massachusetts local boards of health are establishing their own laboratories for the making of the free examinations which we have mentioned. In at least one town, Brookline, the examinations made in the Board of Health's laboratory are not confined to those which aid in the diagnosis of contagious diseases. Chemical and microscopical examinations which aid in the diagnosis of other diseases are also made, and are already availed of. As these examinations concern the health of the individuals and not of the public, they are not and should not be free, but the cost should be borne by the individual for whom the examination is made. At the Brookline laboratory urinary analyses, blood examinations, examinations of contents of the stomach, etc., are made for a fixed fee.

In the same way in those communities where there is no x-ray apparatus to which the practitioners can have access, it is suggested that the local board of health might have an outfit for the use of the physicians, the expense here also being borne by those patients who have the benefit of it. One of the cities of Europe, to our knowledge, has an establishment with an x-ray outfit, to which any of the physicians can bring their patients.

Paternalism or socialism in medicine should be guarded against, but where a community would otherwise be without methods of medical practice which have been proved to be of great value, more might be done than is now done to secure for the community the benefit of these methods. We should not merely try to extend by research our knowledge of medicine but should also strive to secure for our citizens the benefit of such knowledge already obtained. The value of any medical discovery is proportional to the use that is made of it, and the experiment now in progress at Brookline will be watched with interest.

MEDICAL NOTES.

Professor Sanarelli to Visit America. — It is reported that Professor Sanarelli is about to visit the United States to study the effects of his serum in the treatment of yellow fever.

A Centenarian. — Mrs. Phœbe Doty Hedges, residing between the borough of New Providence and Summit, New Jersey, is reported to have celebrated her one hundred and first birthday.

A Sign of Progress. — It is reported that Dr. Dupont, of Paris, is collecting by the phonograph the different cries of the insane, paralytic, epileptic, idiotic, and of those in various deliriums.

Appointment of Professor Brissaud. — It is announced that Professor Brissaud has been appointed to the chair of history of medicine and surgery at the Paris Faculty of Medicine.

A Numerous Progeny. — It is stated that a French-Canadian woman, twenty-eight years of age, recently gave birth to her third pair of twins in three years. Both father and mother were also one of twins.

A New Neurological Society. — We learn from *Science* that a neurological society was formed in Paris on June 8th, with Professor Joffroy as President. The society will issue the *Revue Neurologique*, which will appear on the 15th of each month.

Yellow Fever at Hampton, Va. — The outbreak of yellow fever in the Soldiers' Home at Hampton, Va., which at the date of writing had resulted in forty cases and eight deaths, is reported to have been brought under control. The probability of its having originated in the neighboring village of Phebus has been established. Norfolk is at present free from invasion.

Yellow Fever at Santiago de Cuba. — A letter we have just received from Gen. Leonard Wood, M.D., from Santiago de Cuba, says: I have just returned from the United States and find that we are having a little yellow fever here. The mortality amongst officers has been exceedingly high; all who have contracted the disease up to date have died. The total mortality has been about 25 per cent. I believe that we have the epidemic under good control and that we have seen the worst of it.

Asylum for Insane Indians. — As stated in the *Medical News*, the asylum for insane Indians at Canton, S. D., for which Congress made an appropriation of $42,000, with an additional $3,000 for the purchase of ground, will soon be erected. Out of 250,000 Indians in the United States there are only 58 who are insane, one doubtful, six idiotic and two partly idiotic. It would seem, then, that the simple physiological life of the barbarian has some advantage over the brain-paralyzing existence characteristic of civilization.

A Memorial of Sir Thomas Browne. — A movement is on foot, according to the *Medical Record*, for the erection in Norwich, Eng., where he resided for a period of forty-six years, and in which city he died in 1682, of a memorial statue of Sir Thomas Browne, the author of "Religio Medici." While excavating a grave in the chancel of St. Peter's some years ago, a coffin was broken open, which proved to be that of Sir Thomas Browne, the skeleton being in good preservation, and the hair of the beard very profuse.

Christian Science Legalized. — We learn from the *Journal of the American Medical Association*, that under the new medical act, "Christian Scientist healers," are, for the first time, given a legal status in Illinois. The act contains the following clause explicitly prohibiting interference with them: "This act shall not apply to any person who ministers to or treats the sick or suffering by mental or spiritual means without drugs or material remedy." Under this act the "Christian Scientist" has full right to practise without supervision or control by any authorities.

An American Surgeon Honored. — As an illustration of the interest which European surgeons are taking in the work of their American colleagues, we learn from the *Philadelphia Medical Journal* that Professor Kocher, of the University of Berne, extended the courtesy of his clinic to Dr. W. S. Halsted, of Johns Hopkins, July 7th. Dr. Halsted performed his operation for hernia, demonstrating his method to the originator of one of the most famous operations for this class of surgical cases. The case proved to be one with a deficiency of the conjoint tendon and particularly favorable for Dr. Bloodgood's transplantation of the rectus muscle, which was done. Dr. Kocher was especially impressed with the resection of the veins of the cord and the precaution against hemorrhage, in order to prevent pressure on the vas and consequent atrophy of the testicle.

"Non-Combatants" in the Philippines. — *Freedom*, an American paper published in Manila, under date of May 1, 1899, has the following item: "Members of the hospital corps have all been supplied with Krag-Jorgensen carbines. Incidentally it is noticed that they have removed the red cross from their uniforms. It is not compatible with United States soldiering for men wearing the red cross to be armed, as with that insignia they are supposed to be non-combatants. The Filipinos, though, have refused to notice hospital-corps men as such in this war and several times have wantonly fired upon them. Hence the carbines." In another column of the same issue, in referring to the attack on Malolos, the paper says: "Dastardly and cowardly as usual, Filipino sharpshooters secreted themselves where they could shoot the Oregon wounded under the tree where Captain Brosius, assistant surgeon, was working. This bestial practice was carried on nearly all day also at the dressing station where Major Ellisand Assistan tsurgeon De Mays were engaged. Private Clark, of Company A, was brought in with a broken arm and while Hospital-attendant Bollan was lifting him from the stretcher Clark was shot through the spine and died a few moments later. Another shot cut Bollan's canteen strap. Privates Peel and West of the hospital corps were each shot through the head. Filipinos dearly love to shoot or mutilate the wounded and hospital attendants. It is according to their ideas of valor."

First Reserve Hospital in Manila. — Recent unofficial reports from Manila, dated early in May, state that this hospital is located in the walled city, or "Old Manila." The buildings, made of stone, are large, roomy, well lighted and ventilated. The grounds have many shade trees, tropical flowers and plants, large walks and driveways. A few tent-wards prevented overcrowding and gave plenty of room to each patient. There were at the time of writing 22 wards with a total of 960 patients, a majority being wounded. Since the outbreak of the insurrection, 932 cases of gunshot injuries had been treated at this hospital. A large number of these were but slightly wounded, and these, after receiving attention and being permitted to rest for a few days, were soon returned to duty — usually at their own request. The number of wounded remaining on May 1st was 430. There had been since February 5th a total death-list of 193 from wounds received in action. The patients are given careful attention and scrupulous cleanliness is maintained. The drinking-water is all distilled, the hospital owning its condenser and ice plant. Since the insurrection 260 wounded insurgents have been treated at this hospital, receiving every attention. The hospital-corps men have worked hard and deserve great credit for the excellent results obtained. The hospital is under the command of Major W. D. Crosby, U. S. Army. The patients are cared for by a large staff of medical officers, 11 hospital stewards, 20 female nurses and 160 privates of the hospital corps.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, August 2, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 59, scarlet fever 34, measles 7, typhoid fever 22.

Quarterly Meeting of Massachusetts Association of Boards of Health. — The quarterly meeting of this Association was held July 27th at Gallop's Island, Boston Harbor. Dr. E. G. Cutler read a paper on "The Incubation and Infective Periods of Infectious Diseases."

NEW YORK.

A Fatal Case of Rabies. — A case of rabies of unusual interest terminated fatally at the New York Hospital on July 28th. The patient, Capt. George Bockhaven, master of the freight steamer *Corona*, and fifty-five years of age, was a man of unusual intelligence and self-possession. He was bitten in several places by a strange dog on June 12th, and the first symptoms of rabies appeared July 26th. At the Pasteur Institute a thorough test of the Buisson hot vapor treatment was made, and when it was found that this had no effect whatever upon the disease he was removed to the New York Hospital, where, as a last resort, a certain amount of blood was abstracted and a strong saline intravenous injection made, at the suggestion of Dr. Gibier. Up to almost the last moment the patient was perfectly cool and deliberate, and described his feelings quietly and intelligently.

An Outbreak of Rabies in Erie County. — A widespread outbreak of rabies among dogs, horses and cows is reported in Erie County by Commissioner Weiting, of the State Agricultural Department, and four persons who have been bitten by rabid animals there are now undergoing preventive treatment at the New York Pasteur Institute. The origin of the trouble has been traced to a large St. Bernard dog which ran for nearly forty miles, biting everything that came in its way, before it was killed.

Tuberculous Cattle. — An official inspection recently made of the cattle of Ex-Gov. Levi P. Morton, near Rhinecliff, on the Hudson, one of the most valuable herds of Guernseys in the county, showed that a large percentage of the animals, nearly sixty in all, were affected with tuberculosis.

Typhoid Fever in Flushing. — At Flushing, in the Borough of Queens, which is said to have hitherto been remarkably free from this disease, there is an outbreak of typhoid fever. Over twenty cases, seven of which are now at the Flushing Hospital, with one death, have thus far been reported. Since last April the village pumping station has not furnished sufficient water to supply the demand, and the typhoid is attributed to the impure water of one or more ponds which have been utilized to supplement the supply.

Statistics of Typhoid Fever. — The State Board of Health has been making a study of the increased prevalence of typhoid fever during the past year, and has found that in the small towns and rural districts, in which the disease is usually more prevalent than in cities, the deaths from typhoid were in 1898 at the rate of 174 in 10,000, against 149 in 10,000 in 1897. The cities of the State, however, do not all have a lower death-rate from the disease than the rest of the State, and the Board, in the tabulation of their mortality statistics, groups them for convenience into three classes: those having a death-rate below that of the rural districts, those having about the same rate, and those having a decidedly higher rate. In the first class are placed New York, Yonkers, Utica and Auburn; in the second, Buffalo, Rochester, Syracuse and Troy; and in the third, Albany, Elmira and Binghamton. In 1898 Rochester and Yonkers alone had a decrease, but in New York and Auburn the increase was slight. The most remarkable increase was in Troy, which for that year must be placed in the third, instead of the second class.

Two Centenarians. — Catharine Vidal, unmarried, a native of New York City, died in Mount Vernon, N. Y., on July 26th, at the age of one hundred. On July 23d Alice McMahan, a spinster, said to be one hundred and five years old, who emigrated from Ireland sixty years ago, sailed for her native land on board the Cunarder *Umbria*.

Miscellany.

POISONOUS PANTRIES.

IT is very desirable that the conditions under which food may become poisonous should receive more practical consideration than they do. Dr. W. W. Stainthorpe, of England, has called attention to some glaring defects in the location of food storerooms, which are worthy of attention. In house construction the position of the pantry is too often treated as of minor importance. In some houses the space under the stairs or some equally unsuitable and inadequately lighted and ventilated place is thought good enough for the purpose. In a great number the pantry is a small offshoot from the house, the ceiling, floor and walls often being damp, owing to faulty construction; in some of these matters are rendered worse by the water taps being placed therein without any provision being made for carrying away the droppings from the tap or overflow from vessels into which the water is run. Frequently the closet — ordinary or pail — is only a few feet from the pantry window. One of the most frequent entries in his inspection note-book is "defective yard pavement," permitting of soakage of filth into the soil underneath, with all its evil consequences. — *Medical Record.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 15, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup
New York . .	3,438,899	—	—	—	—	—	—	—
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	482	201	23 94	10.52	15.12	1.89	4.20
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	198	90	19.89	7.65	11.22	1.53	3.57
Baltimore . .	506,389	245	134	45.10	5.33	41.41	.41	1.23
Cincinnati . .	405,000	95	—	10.60	15.90	8.64	2.12	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	132	65	35.72	3.80	26.60	3.04	—
Washington .	277,000	136	60	28.86	11.36	22.94	—	1.48
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	48	20	31.20	4.16	31.20	—	—
Nashville . .	87,754	33	12	18.18	15.15	12.12	3.03	—
Charleston . .	65,165	34	16	17.64	5.88	8.82	5.88	—
Worcester . .	108,240	27	8	18.50	7.40	14.80	—	—
Fall River . .	95,919	62	51	43.47	8.05	40.25	1.61	—
Cambridge . .	89,724	22	8	29.05	20.75	29.05	—	—
Lowell . . .	88,641	36	25	44.32	5.54	33.24	—	—
Lynn	66,703	15	2	26.65	—	6 66	6.66	—
New Bedford .	66,340	21	14	33.33	9.52	19.04	4.76	—
Somerville . .	61,101	21	6	—	—	—	—	—
Lawrence . .	57,263	27	16	37.00	14.80	33.33	3.70	—
Springfield . .	56,501	26	8	38.46	15.36	26.88	—	—
Holyoke . . .	43,424	17	9	52.92	23.52	41.16	11.76	—
Brockton . .	37,278	10	3	20.00	20.00	20.00	—	—
Salem	36,883	17	8	29.40	11.76	29.40	—	—
Malden . . .	34,613	10	—	—	40.00	—	—	—
Chelsea . . .	33,468	16	7	25.00	6.25	6.25	6.25	—
Haverhill . .	32,022	8	4	12 50	—	12.50	—	—
Gloucester . .	30,589	2	—	—	—	—	—	—
Newton . . .	29,716	3	3	66.66	—	66.66	—	—
Fitchburg . .	29,438	6	1	16.66	—	—	—	—
Taunton . . .	28,167	14	5	21.42	7.14	14.28	—	—
Everett . . .	25,338	6	3	—	—	—	—	—
Quincy . . .	23,549	1	1	—	—	—	—	—
Pittsfield . .	22,643	3	—	—	33.33	—	—	—
Waltham . .	21,812	9	3	33.33	22.22	33.33	—	—
North Adams .	20,971	12	5	25.00	8.33	25.00	—	—
Chicopee . .	17,842	9	6	33.33	11.11	22.22	11.11	—
Medford . . .	16,511	3	—	33 33	—	—	—	33.33
Newburyport .	14,915	8	4	37.50	—	12.50	12.50	—
Melrose . . .	14,032	3	—	—	—	—	—	—

Deaths reported 1,835; under five years of age 822; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 532, consumption 168, acute lung diseases 72, diarrheal diseases 405, diphtheria and croup 35, typhoid fever 31, whooping-cough 21, cerebro-spinal meningitis 19, scarlet fever 12, measles 4, erysipelas 2.

From whooping-cough Philadelphia 9, Pittsburg 4, Boston and Lowell 2 each, Nashville, Charleston, Lawrence and Chelsea 1 each. From cerebro-spinal meningitis Baltimore 3, Philadelphia, Boston, Washington and Somerville 2 each, Worcester, Lynn, Springfield, Chelsea, Fitchburg, Taunton, Newburyport and Amesbury 1 each. From scarlet fever Washington 3, Philadelphia, Pittsburg and Lowell 2 each, Baltimore, Cincinnati and Lynn 1 each. From measles Boston and Pittsburg 2 each. From erysipelas Baltimore and Washington 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending July 1st, the death-rate was 15.7. Deaths reported 3,427; acute diseases of the respiratory organs (London) 159, measles 110, diarrhea 80, whooping-cough 79, diphtheria 71, scarlet fever 35, fever 28, small-pox (Hull) 5.

The death-rates ranged from 10.4 in Blackburn to 22.5 in Gateshead; Birmingham 15.4, Bradford 14.8, Cardiff 13.5, Hull 17.4, Leeds 14.4, Liverpool 21.5, London 14.9, Manchester 21.3, Newcastle-on-Tyne 14.6, Nottingham 12.9, Portsmouth 15.0, Salford 17.9, Sheffield 20.6, Swansea 13.1, West Ham 11.8.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending July 8th, the death-rate was 16.0. Deaths reported 3,496; acute diseases of the respiratory organs (London) 194, measles 133, diarrhea 98, whooping-cough 86, diphtheria 81, scarlet fever 35, fever 24, small-pox (London) 6.

The death-rates ranged from 10.6 in Croydon to 24.8 in Manchester; Birmingham 12.9, Bradford 12.1, Cardiff 15.2, Gateshead 15.7, Huddersfield 17.6, Leeds 15 1, Liverpool 24.2, London 15.0, Newcastle-on-Tyne 16.6, Nottingham 17.0, Portsmouth 11.8, Sheffield 21.5, Swansea 12.1.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 22, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping-cough.	Diphtheria and croup.
New York . .	3,438,899	1559	863	26.28	9.24	19.68	1.14	2.88
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	249	124	28 40	8.00	24.40	.80	1.20
Baltimore . .	506,389	245	138	42.64	7.76	37.72	.82	1.64
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	110	59	29.70	1.80	18.90	3.60	2.70
Washington .	277,000	115	45	18.06	13.76	18.06	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	69	33	34.80	11.60	30 45	1 45	—
Nashville . .	87,754	38	12	21.04	2.63	21.04	—	—
Charleston . .	65,165	—	—	—		—	—	—
Worcester . .	108,240	39	19	38.40	5.12	35.84	—	—
Fall River . .	95,919	68	51	44.10	5.88	41.16	1.47	—
Cambridge . .	89,724	46	27	45.57	10.85	43.40	2.17	—
Lowell . . .	88,641	47	30	46.86	4.26	44.73	4.26	—
Lynn	66,703	22	12	29.05	4.15	21.90	—	4.15
New Bedford .	66.340	19	9	15.78	21.04	10.52	—	5.26
Somerville . .	66,101	14	6	28.56	14.28	21.42	—	—
Lawrence . .	57,263	29	21	58.65	13.84	51.75	6.90	—
Springfield . .	56,501	14	7	21.42	7.14	14.28	—	—
Holyoke . . .	43,424	15	7	59.94	20.00	53.28	—	—
Brockton . .	37,278	7	2	14.28	14.28	14.28	—	—
Salem	36,883	21	11	33.33	–	28.56	—	—
Malden . . .	34,613	17	—	47 04	5.88	41.16	5.88	—
Chelsea . . .	33,468	19	6	5.26	5.26	—	5.26	—
Haverhill . .	32,022	12	6	25.00	—	25.00	—	—
Gloucester . .	30,589	6	—	16.66	33.33	—	—	—
Newton . . .	29,716	15	11	33.33	6.66	26.66	6.66	—
Fitchburg . .	29,438	7	—	14.28	14.28	—	—	—
Taunton . . .	28,167	20	8	25.00	15.00	25.00	—	—
Everett . . .	25,338	3	2	33.33	33.33	33 33	—	—
Quincy . . .	23,549	5	1	40.00	–	20.00	—	—
Pittsfield . .	22,643	5	4	80.00	—	80.00	—	—
Waltham . .	22,296	3	2	66.66	—	66.66	—	—
North Adams .	20,971	12	6	50.00	—	41.66	—	—
Chicopee . .	17,842	9	6	33.33	—	33.33	—	—
Medford . . .	16,511	4	1	25.00	—	25 00	—	—
Newburyport .	14,915	7	4	14.28	14.28	—	—	—
Melrose . . .	14,032	2	—	—	—	—	—	—

Deaths reported 2,918: under five years of age 1,538; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 1,068, consumption 261, acute lung diseases 152, diarrheal diseases 894, diphtheria and croup 60, whooping-cough 37, typhoid fever 24, cerebro-spinal meningitis 18, measles 17, scarlet fever 12.

From typhoid fever New York 8, Pittsburg 4, Boston 3 Baltimore and Washington 2 each, Providence, Springfield, Holyoke, Salem and Everett 1 each. From cerebro-spinal meningitis New York 8, Baltimore and Washington 2 each, Boston, Worcester, Gloucester, North Adams, Newburyport and Hyde Park 1 each. From measles New York 13, Pittsburg, Providence, Fall River and Somerville 1 each. From scarlet fever New York 10, Boston and Fitchburg 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending July 15th, the death-rate was 16.9. Deaths reported 3,690; acute diseases of the respiratory organs (London) 177, diarrhea 204, measles 124, diphtheria 91, whooping-cough 76, scarlet fever 32, fever 24, small-pox (London and Hull 1 each) 2.

The death-rates ranged from 11.0 in Croydon to 24.6 in Salford; Birmingham 18.6, Bradford 15.9, Cardiff 11 8, Gateshead 17.6, Hull 12.9, Leeds 17.1, Liverpool 23.3, London 15.9, Manchester 21 5, Newcastle-on-Tyne 19.2, Nottingham 19 4, Portsmouth 12.0, Sheffield 24.1, Sunderland 16.1, Swansea 20.1, West Ham 12.0.

METEOROLOGICAL RECORD

For the week ending July 15th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A.M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8 00 P. M.	
S....9	29.69	73	81	65	83	65	74	S.	S.W.	10	10	O.	C.	.58
M..10	29.94	70	83	58	74	42	58	N.W.	W.	12	5	O.	C.	
T..11	30.10	76	87	65	55	65	60	W.	S.W.	6	14	C.	C.	
W..12	29.99	75	85	65	64	68	66	S.W.	S.W.	12	10	C.	O.	
T..13	29.86	72	81	63	52	40	46	W.	N.	11	3	C.	C.	
F..14	29.89	74	85	63	57	45	51	N.W.	N.W.	10	10	C.	F.	
S...15	29.94	74	82	66	53	60	56	S.	S.	10	6	C.	C.	
☞	29.92		83	64			73							.58

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S. smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 29, 1899.

L. W. **Atlee**, surgeon, detached from the "Bennington" and ordered home via "Solace."

G. **Rothganger**, passed assistant surgeon, detached from the "Marietta" and ordered home and to await orders.

M. K. **Johnson**, passed assistant surgeon, detached from the Naval Hospital, New York, and ordered to the "Marietta."

W. M. **Wheeler**, assistant surgeon, when discharged from further treatment at hospital, Yokohama, Japan, ordered home in the "United States" and to await orders.

T. M. **Lippitt**, assistant surgeon, detached from the "Solace" and ordered to the "Baltimore."

R. W. **Plummer**, assistant surgeon, ordered to the Naval Hospital, New York.

J. W. **Ross**, surgeon, retired, granted leave for one year abroad.

H. A. **Dunn**, assistant surgeon, detached from the "Panther" and ordered to the Washington Navy Yard.

L. L. **Von Wedekind**, passed assistant surgeon, detached from the hospital, Cavite, P. I., and ordered to Mare Island, Cal.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JULY 27, 1899.

Mead, F. W., surgeon. To proceed to New York, N. Y., and assume temporary charge of the Purveying Depot. July 21, 1899.

Geddings, H. D., passed assistant surgeon. Relieved temporarily from duty on the commission for the scientific investigation of yellow fever, and assigned to temporary duty in the Hygienic Laboratory. July 22, 1899. To proceed to Boston, Mass., for special temporary duty. July 25, 1899.

Perry, J. C., passed assistant surgeon. Detailed for duty in the office of the U. S. Consul at Hong Kong, China. July 22, 1899.

Gardner, C. H., passed assistant surgeon. To assume temporary charge of the Port Townsend Quarantine. July 24, 1899.

Sprague, E. K., passed assistant surgeon. Granted leave of absence for twenty-seven days from August 7, 1899. July 27, 1899.

Wickes, H. W., passed assistant surgeon. Granted leave of absence for thirty days from August 6, 1899. July 27, 1889.

Tabb, S. R., assistant surgeon. Upon being relieved from duty at Baltimore, Md., to proceed to Savannah, Ga., and assume command of the service. July 22, 1899.

Foster, M. H., assistant surgeon. Upon being relieved from duty at Savannah, Ga., to proceed to the Port Townsend Quarantine Station, and report to the commanding officer for duty. July 22, 1899.

Lumsden, L. L., assistant surgeon. To proceed to Port Townsend, Wash., and assume temporary charge of the service. July 24, 1899.

Billings, W. C., assistant surgeon. Relieved from duty at the Immigration Depot and directed to report to the commanding officer at New York, N. Y., for duty and assignment to quarters. July 26, 1899.

Fox, Carroll, assistant surgeon. To report to commanding officer, Baltimore, Md., for duty and assignment to quarters. July 26, 1899.

McClintic, T. B., assistant surgeon. To report to commanding officer Cape Charles Quarantine, for duty and assignment to quarters. July 26, 1899.

Currie, D. H., assistant surgeon. To report to commanding officer at Louisville, Ky., for duty and assignment to quarters. July 26, 1899.

Goldberger, Joseph, assistant surgeon. To report to Surgeon L. L. Williams, Immigration Depot, New York, N. Y., for duty. July 26, 1899.

Korn, Wm. A., assistant surgeon. To report to commanding officer, Chicago, Ill., for duty and assignment to quarters. July 26, 1899.

Holt, J. M., assistant surgeon. To report to commanding officer, St. Louis, Mo., for duty and assingment to quarters. July 26, 1889.

Trotter, F. E., assistant surgeon. To report to Surgeon L. L. Williams, Immigration Depot, New York, N. Y., for duty. July 26, 1899.

Vogel, C. W., assistant surgeon. To report to commanding officer, Boston, Mass., for temporary duty and assignment to quarters. July 26, 1899.

Tuttle, Jay, acting assistant surgeon. Granted leave of absence for seven days. July 22, 1899.

PROMOTIONS.

Henry Gahn, hospital steward. To be hospital steward and chemist. July 17, 1899.

W. L. **Stearns**, hospital steward. To be hospital steward and assistant chemist. July 17, 1899.

APPOINTMENTS.

Carroll Fox, of Pennsylvania, commissioned as assistant surgeon. July 25, 1899.

Thomas B. McClintic, of New York, commissioned as assistant surgeon. July 25, 1899.

Donald H. Currie, of Missouri, commissioned as assistant surgeon. July 25, 1899.

Joseph Goldberger, of Pennsylvania, commissioned as assistant surgeon. July 25, 1899.

William A. Korn, of New Jersey, commissioned as assistant surgeon. July 25, 1899.

John M. Holt, of New York, commissioned as assistant surgeon. July 25, 1899.

Frederick E. Trotter, of New York, commissioned as assistant surgeon. July 25, 1899.

Charles W. Vogel, of Maryland, commissioned as assistant surgeon. July 25, 1899.

APPOINTMENT.

Dr. **Henry F. Hewes** has been appointed physician to outpatients at the Massachusetts General Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Empyema of Antrum. By Henry G. Ohls, M.D., Chicago. Reprint. 1899.

A Simple Gauze-packer. By Wm. C. Bane, M.D., Denver, Col. Reprint. 1899.

Yesterday and To-day. By Francis J. Shepherd, M.D., Montreal. Reprint. 1899.

Massage and the Original Swedish Movements: Their Application to Various Diseases of the Body. By Kusse W. Ostrom, from the Royal University of Upsala, Sweden. Fourth edition, revised and enlarged, with 105 illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

Original Articles.

THE PROTEIDS OF THE URINE.[1]

BY WILLIAM B. HILLS, M.D., CAMBRIDGE, MASS.,
Associate Professor of Chemistry, Harvard Medical School.

The following cases are reported particularly for the purpose of calling attention to the form of proteid contained in the urine:

Case I. Clinical history unknown. The urine was first submitted to me February 13, 1897, to be analyzed for arsenic. I have since made eight examinations of the urine. The daily quantity, so far as I have had the opportunity of observing it, has been 1,750–2,300 cubic centimetres. Urea, 22.5–26.9 grammes. Both the heat and nitric-acid tests have showed the constant presence of a coagulable proteid. The quantity of proteid has not varied appreciably; by estimate usually about one-eighth per cent. On one occasion a quantitative determination showed 1.4 grammes per litre.

When the urine, faintly alkaline with ammonium hydroxide, was saturated with magnesium sulphate, or half-saturated with ammonium sulphate, a precipitate was obtained. These precipitates were thrown upon a filter paper, washed with a saturated solution of magnesium sulphate, and a half-saturated solution of ammonium sulphate respectively, and dissolved in distilled water (the adherent salt rendering the precipitate soluble). The solutions thus obtained contained a proteid coagulable by both heat and nitric acid, that is, globulin. The filtrates from the precipitates produced by magnesium and ammonium sulphates contained no detectable trace of albumin.

These results have been constantly obtained in the examination of the urine in this case, which is apparently a chronic nephritis, either the interstitial type or amyloid infiltration, and of special interest as being a case of pure globulinuria. Such cases have seldom been reported.

Case II. Scarlet fever in a boy of eighteen years. The urine examined on the tenth day was normal as to specific gravity and normal solids, contained a minute trace of albumin and, in the sediment, a few red blood corpuscles, leucocytes, and epithelial cells, apparently from the neck of the bladder, or the prostatic region. Two weeks later the urine was high as to color, specific gravity 1.026, free from albumin. The urine remained free from albumin four weeks later. Specific gravity 1.025. In testing for sugar at this time, using Fehling's solution, an intense rose-red color, resembling that characteristic of Piotrowski's (biuret) reaction for proteoses and peptones, was observed. The small remaining portion of the urine was saturated with ammonium sulphate and filtered, and the filtrate tested by the biuret test with a positive result. I therefore concluded that it was a case of peptonuria, but as the patient was perfectly well, no opportunity for further investigation was afforded me.

This case came under my observation many years ago, and the treatment with ammonium sulphate was not as rigid as we now know it should be for the thorough separation of albumoses. I do not, therefore, feel certain at the present time, that it was not a case of albumosuria (deutero-albumose). I report the case as the only one in my experience in which I have had any reason for suspecting the presence of true peptone, and also as an introduction to some remarks upon the subject of true peptonuria.

It is the prevailing belief that albumin is the chief simple proteid occurring in the urine, and the one which possesses the greatest importance, clinically. It is, however, a well-recognized fact that the urine may at times contain other simple proteids in solution, namely, globulins, particularly serum-globulin, proteoses, and possibly peptones. There is, at the same time, a noticeable lack of exact information relative to the frequency of the occurrence of these proteids. I have accordingly undertaken to utilize the large number of specimens to which I have access, for the purpose of obtaining, if possible, more exact information upon this point. The progress of an investigation of this nature is necessarily slow, owing to the difficulty in obtaining a sufficient number of suitable cases, as well as to the care and time required in testing for this class of bodies. This paper is presented as a preliminary communication and is confined to the consideration of globulinuria and peptonuria.

GLOBULINURIA.

Paraglobulin or serum-globulin is a representative of a class of proteids which resemble the albumins in undergoing conversion to coagulated proteid under the influence of heat or concentrated nitric acid. Accordingly in the examination of the urine for proteid by either the heat or nitric-acid test, no distinction is made between the two. Either or both, if present, are reported as albumin; a procedure which has found its justification hitherto in the assumption that both possess the same clinical significance. The globulins resemble the albumins in responding to the general color reactions of the proteids, and their solutions behave towards the general precipitants of the proteids, for the most part, as solutions of the albumins do.

The following are the important differences:

(1) Globulin is partially precipitated when a stream of carbon dioxide is passed through its solutions, which must be diluted more or less if the quantity of globulin is large.

(2) Globulin is insoluble in water, but soluble in dilute salt solutions. Consequently when solutions rich in globulin are poured drop by drop into a large volume of distilled water, the globulin is precipitated, because the percentage of salt is so far reduced by dilution, that it no longer suffices to hold the globulin in solution. The presence of globulin in the urine may frequently be detected in this manner. For the same reason, globulin is gradually precipitated from its solutions when the latter are submitted to dialysis.

(3) Globulin is completely precipitated when its solutions are saturated with magnesium sulphate or half saturated with ammonium sulphate. This property forms the basis of the only satisfactory method for the complete separation of globulin from its solutions. Half-saturation with ammonium sulphate is the more satisfactory method, since the precipitate thus obtained can be filtered and washed much more rapidly than is the case when magnesium sulphate is employed as the precipitant.

The process is carried out as follows: 25–50 cubic centimetres of the urine are made neutral or slightly alkaline with ammonium hydroxide, and the precipitated phosphates removed by filtration. An equal volume of a saturated solution of ammonium sulphate is then added, the mixture shaken, and allowed to stand for some time, and finally filtered. The precipitate is washed with a half-saturated solution of ammonium sulphate for the removal of the last traces of albumin, and the filtrate and precipitate tested for albumin and globulin respectively, as previously described. The formation of a precipitate upon the addition of either magnesium or ammonium sulphate is not in itself evidence of the presence of globulin.

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[1] Read before the Boston Society for Medical Improvement, January 16, 1899.

In testing the urine for globulin, the necessity of the preliminary neutralization with an alkaline hydroxide should never be lost sight of. Ott[2] has shown that in strongly acid albuminous urines saturation with magnesium sulphate effects the precipitation of a portion, and in some cases the whole of the albumin together with the globulin; and that the albumin remains wholly unprecipitated only when at least half the total phosphoric acid of the urine exists as a neutral phosphate. Pohl[3] also finds that the same holds true when ammonium sulphate is used as the precipitant.

Using the process above described, I have, thus far, analyzed the urine in 73 cases of acute and chronic Bright's disease, secondary renal hyperemia and local inflammatory affections of the urinary membranes; all cases in which the urine contained one-eighth per cent., or more, by weight of coagulable proteid. Globulin was found present in every case.

The case which introduces this paper was the only one in which globulin was the sole proteid. The quantity of globulin found has been very variable, usually ranging between 2 and 10 per cent. of the total proteid present. In 11 cases a trace only is noted. The largest quantity, 50–55 per cent. of the total proteid, was found in three cases of acute nephritis, in which the urine contained considerable blood, the result of an acute exacerbation. In an advanced case of chronic diffuse nephritis the globulin formed 46.5 per cent. of the total proteid present.

I have not observed any uniformity in the absolute or relative quantity of globulin in the urine of the same pathological condition. For example, in the three cases of acute nephritis just referred to, the globulin fell to a trace, 8.5 per cent. and 22 per cent. respectively, upon the disappearance of the blood. These results, so far as they relate to the frequency of the occurrence of globulin, agree with those previously obtained by Senator and by Paton.

Senator,[4] although using a process which is lacking in delicacy (precipitation by carbon dioxide), detected globulin in all the albuminous urines examined by him, and concluded that globulin invariably accompanies albumin. He found the largest quantity of globulin in the urine in six cases of amyloid disease. Globulin was abundant in the urine of acute nephritis, while the quantity was slight in cases of chronic diffuse nephritis.

Paton[5] also examined the urine in cases of acute and chronic Bright's disease, amyloid disease and functional albuminuria, and concluded that globulin always accompanies albumin. He found that the globulin varied greatly in quantity: between 2 and 60 per cent. of the total proteid. In one case of heart disease the urine contained albumin alone. He further found that the ratio of the globulin to the albumin varies so much through the day that no conclusions can be drawn unless the total urine for the twenty-four hours is examined. He observed that food has a great influence on the relative proportion of the two proteids, a rich proteid diet appearing to cause an increase in the quantity of albumin excreted, especially noticeable on a milk diet.

Petri,[6] on the other hand, examined the urine in 41 cases of albuminuria, and found globulin in 13 only.

Estelle's[7] results are unique. He frequently met with cases in which globulin was the sole proteid present in the urine; and he further found that globulin invariably exceeded albumin in quantity in urines which contained both proteids. In two cases of chronic Bright's disease globulin amounted to 61 and 68 per cent., respectively, of the total proteids of the urine. His results were published before the importance of the neutralization of the acidity of the urine as a preliminary to the precipitation of the globulin was known, and are, for this reason, probably untrustworthy.

Führy-Snethlage[8] found the largest quantity of globulin in the urine, namely, 45 per cent. of the total proteid, in a case of interstitial nephritis with fatty degeneration. In two cases of amyloid disease the globulin amounted to 37 and 25 per cent., respectively, of the total proteid. He observed no uniformity in the quantity of globulin present in the urine of the same pathological condition.

Patella[9] also failed to observe any constant ratio between albumin and globulin in the urine in the different forms of albuminuria.

The statement is made in a text-book recently published (1896), that "so far not one case of pure globulinuria has been reported." Such cases have, however, been observed and reported, but the number is small. Maguire[10] has reported three cases of functional or physiological albuminuria, and one case of puerperal albuminuria in which globulin was the sole proteid present in the urine. Werner[11] also has reported a case of acute nephritis in which globulin was the only proteid present in the urine. Boyd observed a case of Bright's disease in which the urine contained globulin and albumose, but no albumin.

The following conclusions appear to be well founded:

(1) Albuminous urines contain also globulin in the great majority of cases.

(2) Globulin occurs in a small proportion of cases as the sole coagulable proteid of the urine.

(3) The same statement is probably true of albumin.

The significance of globulin as a constituent of the urine, and its value, if any, in diagnosis or prognosis, are unknown. There is, however, some basis for the belief that an increase of the proteid quotient (that is, the number obtained by dividing the quantity of albumin excreted in the twenty-four hours' urine by the quantity of globulin) is a favorable indication, a decrease, an unfavorable one. Hoffman[12] found that the proteid quotient is a fairly constant number, provided no marked change takes place in the condition of the patient; but that it always increases as the condition of the patient improves. In five cases reported by him there was a rise from 2.78 to 6.51, from 5.98 to 10.31, from 7.13 to 13, from 3.7 to 6, and from 1.11 to 4.17. He maintains that the proteid quotient is not dependent upon the histological change in the kidneys, but that it is influenced particularly by the intensity of the pathological process.

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[2] Prager med. Wochenschr., 1884, No. 16, p. 6.
[3] Archiv f. Experim. Pathol. u. Pharmak., xx, p. 426.
[4] Virchow's Archiv, 1874, p. 476.
[5] British Medical Journal, ii, 1890, p. 196
[6] Jahresbericht über die Fortschritte der Thier-Chemie, vi, p. 148.
[7] Ibid., x, p. 268.
[8] Deutsch. Arch. klin. Med., xvii, p. 418.
[9] Jahresbericht über die Fortschritte der Their-Chemie, xviii, p. 301.
[10] Lancet, 1886, p. 1,082.
[11] Deutsch. med. Wochenschr., xlvi, p. 666.
[12] Virchow's Archiv, lxxxix, p. 271.

Csatáry[13] also finds that an increase in the proteid quotient continuing over some days is a favorable symptom, while a diminution is unfavorable. He maintains, however, that the quotient is dependent particularly upon the rapidity of the circulation in the glomeruli, and not upon the form or intensity of the pathological process, or upon the state of nutrition of the patient.

Both albumin and globulin are constituents of the blood, and there is nothing surprising in the fact that both find their way into the urine. At the same time, their occurrence in such variable proportions, and especially the occasional occurrence of one alone, suggests the existence of some condition or conditions which influence the relative amounts of the two proteids excreted. The subject seems to me to be one worthy of further investigation.

PEPTONURIA.

True peptones, in the sense in which the term is used by Kühne, are the final proteid products of the hydrolysis of proteids. Proteids undergo this conversion physiologically, in the process of digestion. The same change is also effected through the agency of dilute acids at a suitable temperature, superheated steam and putrefactive bacteria.

Peptones are very soluble in water, and non-coagulable by heat or nitric acid. They are characterized by their diffusibility, a property which is also shared to some extent by the proteoses. In common with the proteoses, they give the rose-red biuret reaction with an alkaline hydroxide and solution of sulphate of copper. They differ from all other simple proteids in their non-precipitation by acetic acid and potassic ferrocyanide, and are especially characterized by the fact that they are not precipitated from their solutions, whether neutral, acid or alkaline, by saturation with ammonium sulphate. According to Chittenden, the latter reaction constitutes the main, and perhaps the only absolute, method of separating peptones from proteoses.[14] The literature of so-called peptonuria is very extensive, but it may, for the most part, be dismissed from consideration in this connection. A study of the numerous cases which have been reported in the journals shows conclusively that in many of these the characteristic proteid constituent of the urine has not been true peptone, but some form of proteose. In many cases faulty methods of analysis have been employed, and one is therefore left in doubt as to the true nature of the proteid, whether proteose or peptone.

This condition appears to find its explanation in a disposition to adhere to the old nomenclature, and to employ the term peptone either as synonymous with the so-called propeptone of earlier years, which is simply a mixture of proteoses of variable composition, or even to employ it in a more general sense, as it was formerly employed, to include all the products of digestion after the stage of acid proteid; in other words, to include both proteoses and peptones.

It is, I believe, a fact that there is at the present time no record of an authentic case of true peptonuria. Senator[15] many years ago, before the distinction between proteoses and peptones was known, concluded that peptone exists in small quantity in every albuminous urine. More recently, however, he states that the proteids hitherto detected in the urine and reported as peptones are not true peptones, but albumoses.[16] According to Robitschek,[17] Kühne's peptone has never yet been detected with certainty in any animal organ or secretion. And Novy[18] states that there is probably no positive evidence that true peptone has been met with in fresh urine.

The occurrence and significance of peptonuria are, in fact, matters for future investigation. Moreover, the subject of albumosuria requires revision, for many cases have been reported upon the basis of very faulty methods of analysis. It is very important that, in future investigations of both albumosuria and peptonuria, the method of analysis employed shall be one which shall distinguish absolutely between these two proteids. The following method meets this requirement: The urine, freed from albumin and globulin, if present, by slightly acidifying with acetic acid, boiling and filtering while hot, is saturated with ammonium sulphate for the precipitation of the proteoses. This part of the process must be carried out with great thoroughness in order to effect the separation of the last traces of deutero proteose, if any is present. This is a form of proteose which stands near the peptones in its properties. According to Kühne,[19] it is not completely precipitated by saturation with ammonium sulphate unless the solution is boiled for a long time, and even then it may be necessary for complete precipitation to make the reaction of the liquid alternately neutral, acid and alkaline, and heat for some time after each change in the reaction. The precipitate, which may contain proteoses, urobilin and urates, is reserved for examination for proteoses. In the filtrate peptone may be detected by the biuret test, provided the urine is a practically colorless one. Otherwise the test cannot be applied directly, with reliable results, owing to the disturbing influence of the urinary coloring matters. In some recent experiments, using a specimen of Witte's peptone which was composed almost entirely of albumoses, I found that the biuret test, applied directly to urines of average color, did not respond with less than two to two and a half grammes of the peptone to the litre.

Chittenden[20] recommends the following process as perhaps the most satisfactory for the separation of the peptone from the ammonium-sulphate-saturated solution. The fluid is concentrated somewhat and set aside in a cool place for crystallization of a portion of the ammonium salt. The fluid is then mixed with about one-fifth its volume of alcohol, and allowed to stand for some time, when it separates into two layers, an upper one rich in alcohol, and a lower one rich in salts. The latter is again treated with alcohol, by which another separation of the same order is accomplished. The lighter alcoholic layers containing the peptone are united and exposed to a low temperature until considerable of the contained salt crystallizes out. The fluid is then concentrated, and after addition of a little water is boiled with barium carbonate until the fluid is entirely free from ammonium sulphate. Any excess of baryta in the filtrate is removed by cautious addition of sulphuric acid, after which the concentrated fluid, reduced almost to a syrupy mass, is poured into absolute alcohol for the precipitation of the peptone.

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[13] Jahresbericht über die Fortschritte der Thier-Chemie, xix, p. 444.

[14] On Digestive Proteolysis, Cartwright Lectures for 1894, p. 63.

[15] Archiv f. path. Anat. u. Physiol., lx, p. 476.

[16] Centralblatt f. d. med. Wissensch., 1895, p. 467.

[17] Zeitschr f. klin. Med., xxiv, p. 556.

[18] Laboratory Work in Physiological Chemistry, p. 186.

[19] Chittenden's Digestive Proteolysis, p. 63, from Zeitschr. f. Biol., xxix, p. 2.

[20] On Digestive Proteolysis, p. 64.

The precipitate obtained with ammonium sulphate, and which may contain proteoses, urobilin and urates, is washed first with a saturated solution of ammonium sulphate, then with alcohol containing a little chloroform for the removal of urobilin, and finally dissolved in water and the solution thus obtained tested by the biuret test.

Halliburton and Colls[21] have suggested the possibility of the formation of proteoses and peptones from the albumins and globulins in the process of separating the latter by heat after acidification with acetic acid. This has never occurred in my work, and I do not believe that any appreciable quantity of proteose or peptone is likely to be formed in this process. By means of the method just described I have thus far examined the urine in 23 cases. In no case was true peptone found. Albumose was detected in two cases. One was a case of pneumonia, in which the urine was analyzed two or three days before the death of the patient, and found to contain much albumose, with a trace of albumin. The other was an advanced case of diffuse nephritis. The urine contained albumin and globulin, with a trace of albumose.

So far as I can learn, true peptonuria has not yet received much attention at the hands of investigators. Schulter[22] examined the urine in eight cases of pregnancy, and in eight other cases (nephritis, pulmonary tuberculosis, scarlet fever, intermittent fever, pneumonia, carcinoma), and failed to detect true peptone. Senns[23] examined the urine in a variety of affections, in which there was suppuration, or destruction of tissues, and found at times albumose, but never true peptone.

Sior[24] could never detect true peptone in the urine of children, and also maintains that fresh pus never contains true peptone. If, however, pus is exposed to the air for some days true peptone is formed from the other proteids present.

On the basis of these few researches, we are unable to form any opinion as to the frequency of peptonuria as a symptom. I have presented these brief remarks for the purpose of calling attention to the present state of our knowledge of this subject, and I desire particularly to emphasize the importance of observing greater exactness in nomenclature in the future. Cases of albumosuria should be reported as such, and not as cases of peptonuria or propeptonuria, as has been the case in the past. The term peptone should be used to include those proteid products of proteolysis only which are not precipitated by saturation of the liquid containing them with ammonium sulphate.

LEPROSY IN CUBA. — According to the *Journal of the American Medical Association*, in several of the principal cities of Cuba there have been asylums for lepers who resorted to them voluntarily, but without strict isolation; during certain hours of the day the inmates were free to go in and out as they pleased. The sanitary authorities of Havana have now forbidden the lepers to leave the asylum.

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[21] Journal of Pathology and Bacteriology, 1895, iii, p. 295.
[22] Jahresbericht über die Fortschritte der Thier-Chemie, xvi, p. 228.
[23] Centralblatt f. d. med. Wissensch., 1892, p. 825.
[24] Jahr. f. Kinderheilk., xxxvii, p. 352.

OSTEO-ARTHRITIS OF THE SPINE: SPONDYLITIS DEFORMANS.[1]

BY JOEL E. GOLDTHWAIT, M.D., BOSTON.

THE term osteo-arthritis is used to designate the disease of the articulations which is characterized pathologically by a marked proliferation of the edges of the articular cartilage, associated with an atrophy or degeneration of the cartilage at the points of pressure, the two conditions producing an amount of impairment of function of the joint varying from the slightest inconvenience to complete anchylosis.

Various terms have been used to designate this condition, some of them suggestive of the general process, while others refer only to the local manifestation. Of the former, chronic rheumatism, arthritis deformans, rheumatoid arthritis, rheumatic gout, dry or proliferating arthritis, malum senile, arthrite sèche are the most commonly met with. Of the latter, the most common are malum coxæ senilis, referring to the disease as seen in the hip and spondylitis deformans, or spondylose rhizomelique, representing the same process involving the spine.

It is with reference to this latter manifestation of the disease that this paper is concerned, and while some mention of the general process is necessary, it will be only such as would be of value in considering the local disease.

The disease has been described by various writers in journal articles, but as yet there has been but slight mention of the subject in the works on orthopedic surgery, and most of the literature is devoted to the report of individual cases, with but little consideration of the disease itself. It is for this reason, and also because it seems to me from my observation that the disease is more common than has been supposed, that the subject is offered for discussion here.

Bradford in 1883[2] reported three cases of "rheumatism of the spine," all in men between thirty and thirty-six years of age. In two practically the whole spine was stiff, with anchylosis of the ribs. In the other the rigidity of the spine was confined to the dorsal region. In the first two cases there was a gonorrheal history. In all of these cases the spine alone was affected.

Marie,[3] under the term spondylose rhizomelique, reports five cases of his own, in one of which there was a distinct gonorrheal history. One patient was sixty years of age, the others from thirty to forty, and in all some of the other joints, usually the hips or shoulders, were affected.

Strümpell[4] reports three cases, and in his book describes the type of painless progressive ossification of the spine and hips.

Mutterer[5] reports a case of a man fifty-eight years of age, with complete anchylosis of the spine, together with anchylosis of both hips and some slight trouble with the knees.

S. Popoff[6] reports a case of a man twenty-eight years of age in which the process developed very rapidly and was associated temporarily with weakness of the legs. This weakness disappeared as the disease became less active.

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[1] Read before the American Orthopedic Association, May 31, 1899.
[2] Annals of Anatomy and Surgery, Brooklyn, 1883, vol. vii, p. 6.
[3] Rev. de Méd., 1898, xviii, 285.
[4] Deutsche Ztschr. f. Nervenhk., 1897, p. 338.
[5] Loc. cit., 1898, Bd. xiv, 1 and 2 Heft.
[6] Neurologisches Centralblatt, Jahrg., No. 7.

Beer[7] reports three cases, thirty-nine, forty-seven and forty years of age. In one a history of gonorrhea is given; in one the hips and shoulder-joints were affected; in another the shoulder and hand, and in one there is no mention of the other joints.

Marie and Astie[8] report a case of a man sixty years of age with trouble with the back of ten years' duration. The spine is completely anchylosed.

Bechterew[9] reports five cases: two women about fifty years of age, in both of which about half the spine was rigid, with no other joints affected. Of the three men, one, a patient thirty-nine years of age, had the spine completely anchylosed, with the symptoms of nerve pressure, such as areas of anesthesia and others of hyperesthesia. Other joints were not affected. Of the other two, one had paralysis agitans and the other was insane. In both cases the spine was rigid and there were symptoms suggestive of pressure upon the nerve roots. The other joints were apparently not affected.

Individual cases are also reported by Fagge,[10] Spillman and Etienne,[11] Gasne,[12] Raymond,[13] Sänger,[14] Stocker,[15] Henle,[16] Baumler,[17] Davies Colley,[18] Sturge,[19] and Pasteur.[20]

Of my own cases, ten in all, most of them have been seen in the Orthopedic Clinic (for adults) at the Carney Hospital, and the cases which have been selected are those which are particularly characteristic and in which the other joints have been but little if any involved.[21]

The first case was previously reported by me in the *Boston Medical and Surgical Journal* of December 26, 1895, and is here reported because of its relation to the other cases.

Case I. Mrs. McC., fifty-eight years of age, by occupation a nurse, had always been well and actively engaged in her work until the present sickness. Her family history is good, and she never had the least trouble from rheumatism. In July, 1893, she was caught in a thunder shower, and her clothing wet through. The next morning she complained of pain in the neck, with some tenderness in the upper part of the chest. There was no cough or expectoration. The pain in the neck increased in severity very rapidly, until the slightest motion caused the most intense suffering, and because of this she was admitted to the Good Samaritan Hospital. The patient entered the hospital in the service of Dr. Coolidge, and it was through his kindness that I was enabled to see her.

At the time of the first examination she was evidently suffering a good deal. The head was held a little to one side, the chin to the left, the shoulders drawn up, and all motions were most carefully guarded by muscular contraction. Any attempt at motion caused great pain. None of the other joints were in the least involved, and aside from this local condition the patient seemed well.

For the first week or two the patient was kept quiet in bed, and the various rheumatic remedies freely given with very little if any effect. After this a Thomas collar was applied for more complete fixation, and following this light weight extension was used. These gave some relief, but neither could be used continuously because of the nervousness of the patient; so that the two appliances were used alternately, each being worn for a few hours. In three or four weeks after the beginning of the attack a swelling appeared in the right side of the neck. This was about the size of a small lemon, and was apparently connected with the spine. At the same time the numbness of the left arm was noticed, with some impairment of motion, and this condition continued and increased until the arm was almost entirely helpless. The right arm and both legs also became involved, never in as marked a degree as the left arm, but enough to make motion in bed, unassisted, impossible. At one time there was difficulty in swallowing, and for a short period breathing was almost entirely diaphragmatic.

The patient's condition remained about the same for two months, after which there was a slow but steady improvement, so that at the end of the third month she was able to sit up for a short time each day, and in December, five months from the onset of the trouble, she was able to move about with but little assistance, and was taken home. The paralytic symytoms referred to in the right arm and legs had by this time practically disappeared, but the left arm was still very helpless. The swelling in the neck was practically the same as when first noticed.

The patient was not again seen until thirteen months later, during which time, aside from the Thomas collar, no special treatment had been carried out. At the time of this examination the improvement in the patient's general condition was most marked. She moved about with perfect ease, and, aside from the stiffness of the neck and some impairment in the use of the left arm, she seemed well. Extension of the neck was entirely restricted, so that in order to raise the chin the whole body was bent backward. Rotation was also entirely restricted, while flexion was more free, it being possible to lower the chin to the chest. On each side of the neck, over the transverse processes, was very distinct thickening, apparently bony in character. In the left arm all motions were limited, especially those in which the shoulder muscles were used. The fingers were flexed, apparently due to the contraction of the palmar fascia and the flexor tendons. The sensation of the hand and arm was normal.

At the present time the patient's condition is practically the same as at the time of this last note. She is able to be about at her work, but there has been no change in the condition of the neck or arm.

Case II. Mrs. M., seventy years of age, came to the Carney Hospital over two years ago. She had considered herself, and had been considered by her family, to be well, until ten years ago. At that time she fell on the floor striking the lower part of the spine. Since then she has had more or less pain in the back, and while previously she had carried herself quite erect, she gradually bent over both to the front and to the side. Except the spine, the joints were not affected. At the time of the examination there was a large rounded kyphosis involving the whole dorsal and lumbar spine, together with quite marked lateral deformity. There was but little motion in the spine, and no symptoms of paralysis. Fig. 1 represents her condition at that time.

Case III. G. K., a man twenty-one years of age, a steel polisher by occupation, came to the Carney Hospital in June of 1897. For one year he had been having trouble with the back, with a gradual loss of the use of the arms and legs. At the time of the first examination the whole spine was bent forward and was rigid. None of the other joints were involved. The left arm could not be raised to the head, and both legs were very weak. The knee reflexes were present, the left being exaggerated. There was marked muscular atrophy of both arms and legs. The patient was seen by Dr. Bullard, and the diagnosis of osteo-arthritis with pressure upon the nerve roots confirmed.

Case IV. D. F., a man twenty-nine years of age, an ordinary laborer, came to the Carney Hospital in September, 1897. Some years previous he had an attack of rheumatism when in Ireland which lasted for three weeks. After that he came to this country and for a time "fired" in an engine-room. He used "to sit in draughts to get cool." This brought on another attack of rheumatism and he was unable to walk for seven weeks. The patient was well after the second attack of rheumatism until a few months ago, at which time he had typhoid fever. Soon after he was able to be about he noticed pain in the back, and as this increased and prevented him from working, he came to the hospital. At that time the spine was straight except for a slight prominence of the eighth, ninth, and tenth dorsal spines. The motions of the whole spine were guarded, but those in which the low dorsal vertebræ were used were least free. A plaster-of-Paris jacket was applied to prevent an increase of the deformity, and a little later this was changed to a leather jacket, which has been worn until the present time. There has been some bending forward, as is shown in the photograph, Fig. 2, and his spine has gradually anchylosed, so that at present it moves as one piece from the pelvis to the lower part of the cervical region. The ribs have also become anchylosed, so that the respiration is entirely diaphragmatic. His general health is good and except for an occasional few days of pain in the feet the other parts of the body have not been involved.

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[7] Wein. med. Blätter, 1887, xx, 127 and 139.
[8] Presse Méd., 1897, October.
[9] Neurol. Cbl., 1893, 426; and Deutsche Ztschr. f. Unfallhk., 1897, xi, 326.
[10] Tr. Path. Soc., xxviii, 1877, p. 201.
[11] Rev. de Méd., 1898, xviii, p. 746.
[12] Sem. Méd. 1899, 78.
[13] Loc. cit., 69.
[14] Neurolog Cbl., xvii, 1898, 1,144
[15] Clinical Journal, 1894, May 9, p. 35.
[16] Vereinsbeilage S. deutschen med. Wochen., 1894, S. 20.
[17] Deutsche Ztschr. f. Nervenhk., xii, 1898.
[18] Tr. Path. Soc. 1855, 359.
[19] Tr. Clin. Soc., 1879, xii, 204.
[20] Loc. cit., 1889, xxii, 298.
[21] The pathological specimens are from the Warren Museum at the Harvard Medical School.

Case V. P. B., a man twenty-four years of age, came to the Carney Hospital in the early part of this year. His previous history was good and there was no history of rheumatism in the family. His work was that of stationary engineer, having charge of a hoisting engine, and, being obliged to work in all kinds of weather, he was much exposed. Five years ago he noticed pain in the back and feet for a time, but has been regularly at work until the past year. Since then he has been so weak and tired so easily that he could not work. When seen at the hospital the whole back was arched forward as shown in Fig. 3, and there was complete anchylosis from the pelvis to the mid-cervical region. The ribs were also anchylosed so that the breathing was wholly abdominal. The other joints were not involved and there were no signs of nerve pressure. The chief complaint was pain in the small of the back, due undoubtedly in part to the active disease, and partly to the muscular fatigue resulting from the posture. For treatment, aside from general remedies, the patient has worn a light spring-steel brace with much benefit.

Case VI. J. S., a man twenty-five years of age, came to the Carney Hospital in March of this year. For occupation he had done "firing" in a gas house and has considered himself well until the past three or four months, since which time he had had pain in the feet followed by pain in the hands and spine. At the present time the whole spine from the pelvis to the mid-cervical region is rigid, and the ribs also are anchylosed, so that the breathing is wholly abdominal. A few of the small joints of the hands and feet are involved. The spine is fairly erect, there being but little of the anterior bending.

Case VII. G. H., a man thirty-two years of age, consulted me in September, 1898, at the request of Dr. H. W. Cushing, of Johns Hopkins Hospital. The patient was a professor in one of our large universities. His family history was excellent, he had been well previous to January, 1897, when he broke down nervously. He went abroad, and soon after this, stiffness of the neck and shoulders developed, not enough, however, to prevent his going about. Soon after this, numbness developed in the left arm, with marked loss of power, and later the right arm was similarly involved, only not so severely. The condition improved slightly and then remained about as it was at the time of the examination. At that time there was a moderate rounded curve involving the upper dorsal and cervical regions of the spine. This portion of the spine was rigid. The shoulders were drooped forward and there was marked atrophy of the muscles of the chest, shoulders and upper back. Both shoulder-joints were somewhat involved, so that the motions were limited, and there was some thickening about the head of the humerus. On attempted motion there was marked spasm of the muscles about the shoulders and upper spine. The legs were normal and there was no change in the reflexes. There was a distinct loss of power in the left arm, with some numbness, and there was a tendency to the same condition on the right side. The treatment, which has been almost wholly general, has been followed by improvement.

Case VIII. C. H., a man sixty-two years of age, was referred to me by Dr. Geo. Bancroft, of Natick, in April last. When in the Civil War the patient contracted "rheumatism," and the back has been stiff ever since, so that he has not been able to work regularly. The neck has not been involved until the past eight months, previous to which time, he overworked and broke down. Since this time the neck has been painful and has been growing worse. When examined the whole lumbar and dorsal spine was anchylosed and free from pain. The cervical region could be moved but slightly, and this only with great pain. Even the atlas and axis were apparently involved, there being but a very few degrees of motion of the head in any direction. The ribs moved slightly on respiration. The sensation in the right arm was much impaired, but the muscular strength remained about the same as the other side. The other joints were not involved. A Thomas collar to support the head gave very marked relief in this case.

Apparently in this case there have been two separate attacks of the disease — one early in life, and the other one thirty years later.

Case IX. M. J. K., a man thirty-four years of age, by occupation a currier, was seen by me at the Massachusetts General Hospital with Dr. John Homans. The patient had been well previous to five years ago. At that time he had an attack of pain in the shoulder, the left knee, and the right foot. Soon after this he noticed that his back was somewhat stiff. Three years ago the pain became acute in the right heel and since then this has caused him the most trouble. One year ago he had another attack of the so-called rheumatism, in which the neck was affected. He was in bed at that time for six months, and since then the back has been much stiffer and it has been difficult for him to breathe freely.

When seen by me he was well-nourished and developed. The spine was straight and was anchylosed from the pelvis to the cervical region. The ribs moved but slightly with respiration, the breathing being almost entirely abdominal. The other joints were in fairly good condition except the right heel, which was painful, and the x-ray picture showed a similar osteo-arthritic process. The position of the spine is shown in Fig. 4, and is interesting as showing that the rounded back is not necessarily characteristic of the disease.

Case X. Mary S., thirty five years of age, came to the Carney Hospital about three years ago because of trouble with the back and neck. The history as given was that a few months previous she made a change in the underclothing and took cold. This was followed by a sudden pain in the neck which prevented her from being about. At that time the slightest motion of the head was extremely painful. No other joints were involved. The arms for some time could not be used freely, the left one being the worse. Under general treatment the patient gradually improved so that at the present time, except for the rigidity of the upper dorsal and the lower half of the cervical spine, she is well.

In all about 35 cases have been reported previously, or 45 cases, including the 10 of my own. Besides this there have been several reports of pathological specimens, illustrating the pathological appearance of the disease entirely apart from the clinical history.

In analyzing such a series of cases certain facts are at once suggested, but before they can be studied to much advantage they must be distinctly differentiated from the other type of rheumatoid disease, which is chronic in character and also leads to joint anchylosis,

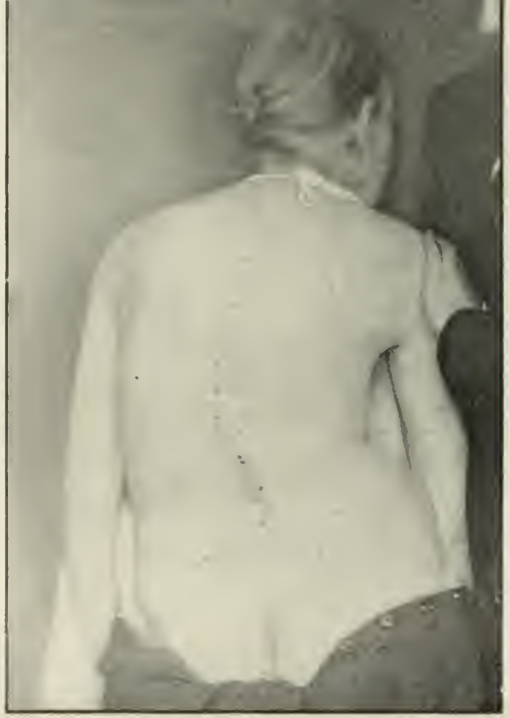


FIG. 1.

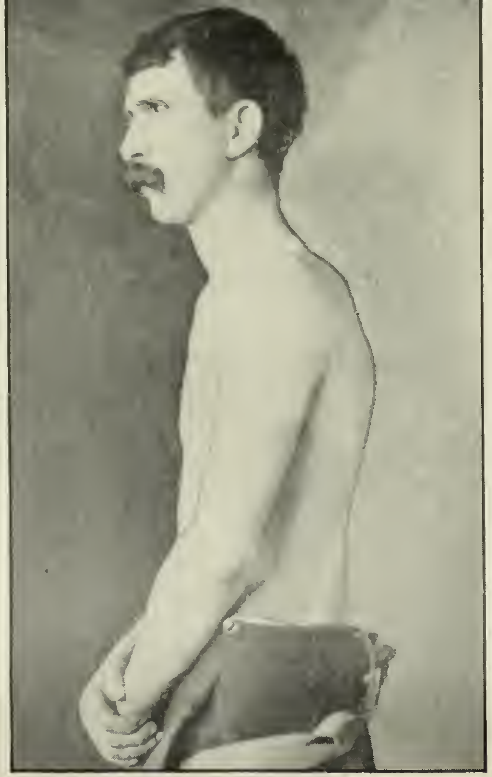


FIG. 2.

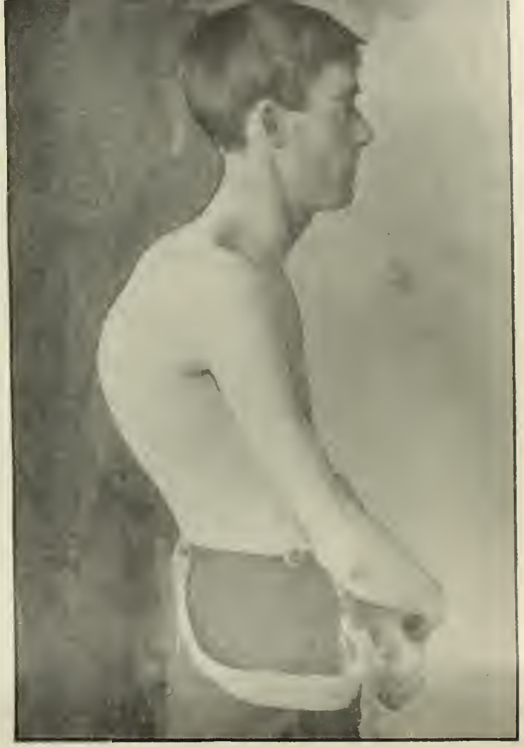


FIG. 3.

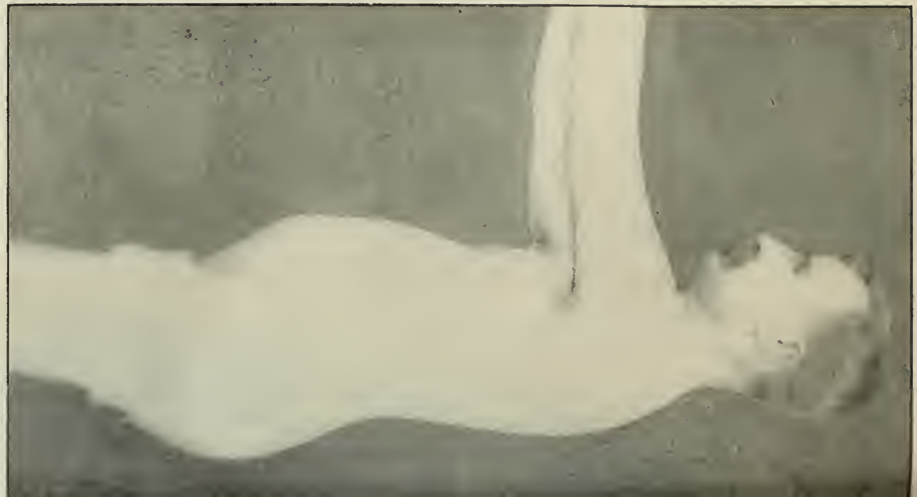


FIG. 4.

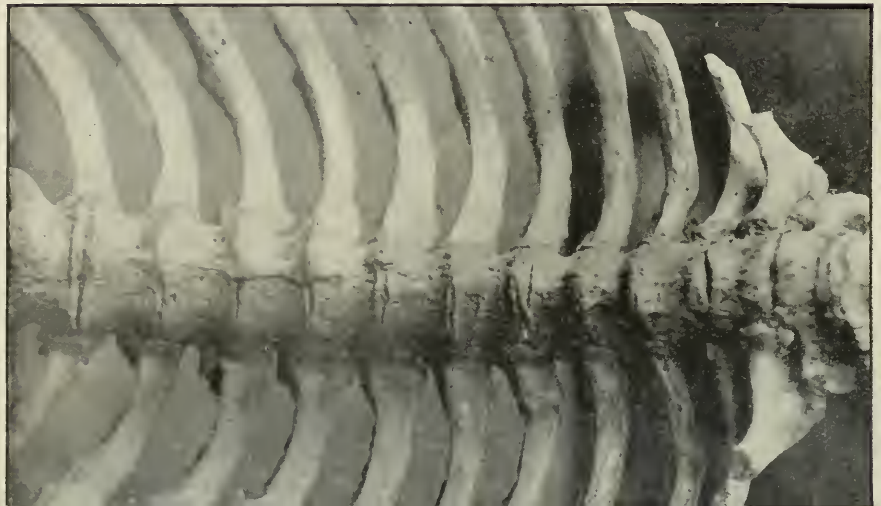


FIG. 5.

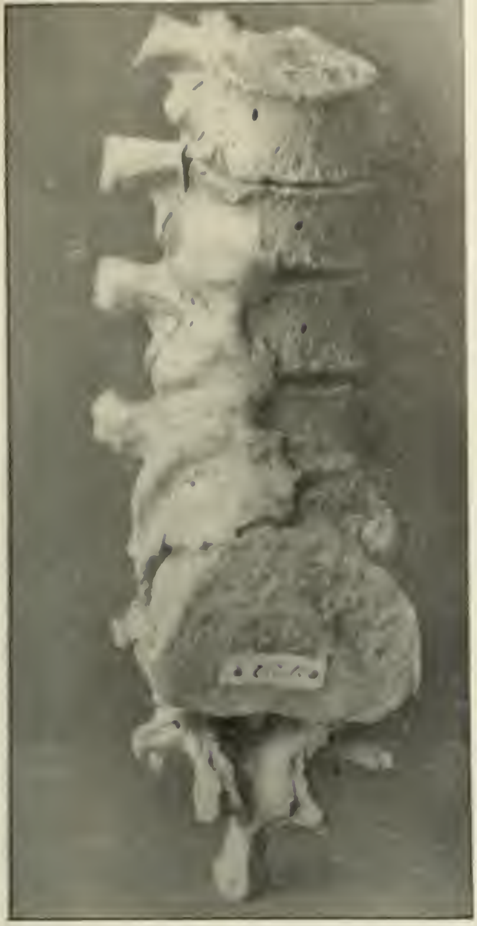


FIG. 6.

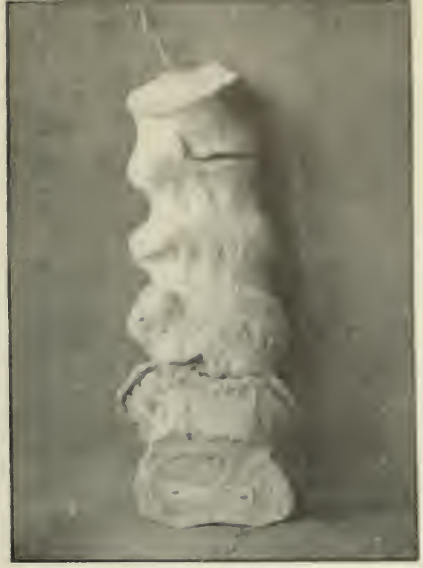
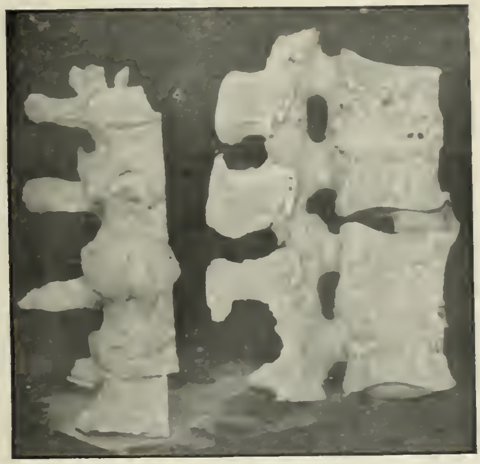


FIG. 7.



b FIG. 9. *a*

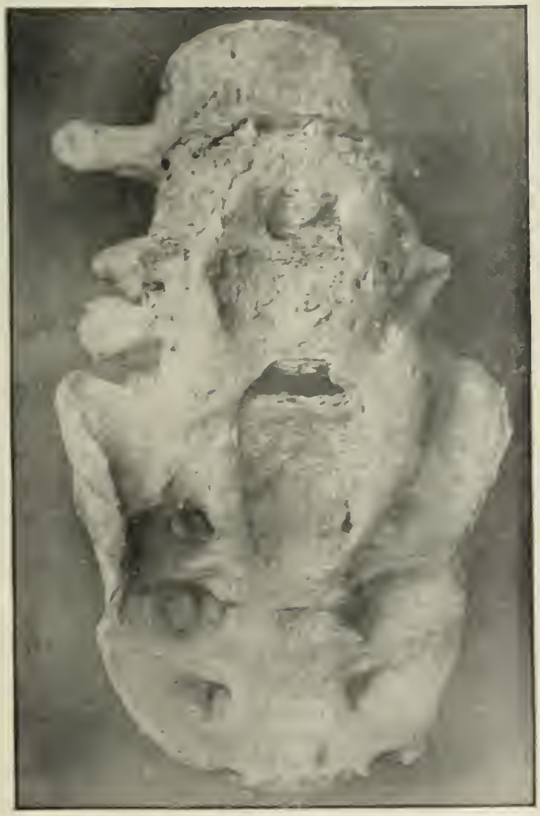


FIG. 8.

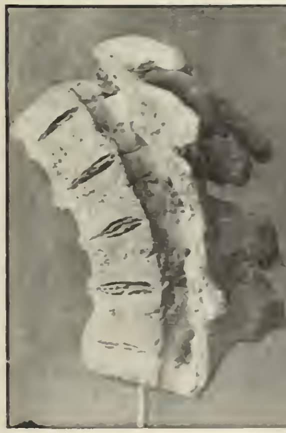


FIG. 10.

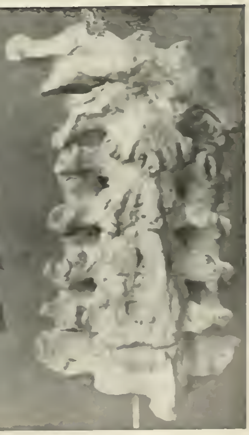


FIG. 11.

but in which there is atrophy of all the joint structures with no tendency to nodular growth or osseous deposit, as is seen in the type of disease under consideration.

Both of these diseases are usually considered together in the text-books under the head of arthritis deformans, which accounts for the variation in the clinical picture as it is presented by the various writers.

As the cases are seen side by side there cannot be the slightest question but what there are two distinct diseases, or two very widely divergent types of the same disease, and it is because of this that much of the confusion has arisen.

In a paper published in the *British Medical Journal* Bannantyne and Vollman have carefully described the two types, and in a paper entitled the "Treatment of Joints disabled by the so-called Rheumatoid Diseases," published by the writer in the *Boston Medical and Surgical Journal*, January 29, 1897, the two types were described and illustrated. In that paper the descriptive term "arthritis deformans" was used to designate the whole class of these so-called rheumatoid diseases. Rheumatoid arthritis was used to designate the cases in which joint inflammation and atrophy, resulting in anchylosis and marked distortion, were the chief features, while osteo-arthritis was the term used for the cases in which the nodular deposits about the articulations were the most prominent features.

The importance of this differentiation is mentioned because several of the cases which have been published as spondylitis deformans are undoubtedly cases of rheumatoid arthritis, and are not osteo-arthritis, which explains the discrepancy in the clinical picture.

It is evident, in the first place, in the analysis of the cases that the disease is essentially a disease of adult life, but not necessarily a disease of old age, as is often stated. Some of the worst cases have developed in the period of late adolescence, while in very few has the process started in old age. The disease as it is seen in old age is not so definitely localized in the spine, but, as a rule, the other joints are also more or less involved.

Another feature which is also noticeable is that there is no one cause or definitely recognized etiology to explain the onset. Gonorrhea has been mentioned as a probable cause in a certain number of instances, but in a much larger number this is not suggested as a possibility. In the majority of cases the cause seems to be some exposure or the rapid change in temperature of the affected part. These influences are recognized and accepted as etiological factors in similar phenomena in other parts of the body, and their importance in spondylitis deformans is probably equally certain. Exposure to wet or cold, or occupations which necessitate sudden changes from heat to cold, such as "firing" or "engineering" are the causes most frequently met with. Bechterew suggests trauma and heredity as possible causes. Beneke believes the process to be due to senile and mechanical causes.

Most of the other writers, however, either do not express an opinion as to etiology, or else accept exposure and gonorrhea as most probable.

Still another thing which is evident is that the disease is not peculiar to this generation, and that it also is not peculiar to the human race. Bland Sutton reports a specimen illustrating this disease in a mummy taken from the pyramids, while Sutton reports the disease in oxen and horses, and Bricon mentions a similar condition in cats.

Pathologically the disease consists of a nodular enlargement of the edges of the articular cartilages, with the subsequent ossification of these nodes and an extension of the process into the ligaments which have their origin or insertion near by. With this hypertrophy at the edges of the cartilage the centres or areas of pressure usually undergo atrophy. In the atrophy the interstitial tissue is the last to be absorbed, which explains the granular appearance as it is seen at times, but as the process continues this interstitial substance is absorbed, and either the two surfaces of bone fuse or remain in apposition. In the other joints in which there is free motion the bare surfaces of bone frequently become polished and increase in density.

The process in the spine usually begins upon one side anteriorly and extends up or down along the anterior lateral ligament. It may remain as a comparatively local process involving only a small portion of the ligament, as is shown in Fig. 5 and Fig. 6, or it may cross over to the other side and extend up and down until the whole spine is invaded. When this occurs the chief deposit or new formation of bone is along the lateral ligament, the change in the median line consisting simply of a fusion of the vertebræ, as shown in Fig. 7 and also Fig. 8, in which the lumbar spine had become joined to the sacrum.

At times, even though the hypertrophic change is quite active, that which develops from adjoining vertebræ does not fuse and a more or less free joint remains. This is distinctly shown in Fig. 7 and also in Fig. 9, in which an intermediate joint remains mobile (*a*), even though the osseous deposit has been so extensive as to entirely overlap the articulation in front (*b*).

As the disease goes on in the ligaments and cartilages the intervertebral substances atrophy, and if the process is slow the entire intervertebral disc may be absorbed before anchylosis takes place. If this be the case naturally the back is rounded and the spine becomes very much arched, as shown in Fig. 10. If, on the other hand, the process is more active the vertebræ may become anchylosed before the disc has been absorbed, and consequently no deformity is produced. If this be the case the disc ultimately is replaced by osseous tissue and the anchylosis rendered more complete. The condition is shown in Fig. 9. If the process is more active on one side than the other it is easy to see that lateral deformities may result and naturally this is more commonly seen in the cervical region, where the spine has more flexibility. The condition is well shown in Fig. 11.

While these changes are taking place in the anterior portion of the spine, similar changes take place in the ligaments and articulations at the back, so that the transverse and rarely the spinous processes are affected. It is the disease in these regions that causes most of the symptoms of paralysis or disturbed sensation, by narrowing the foramina through which the spinal nerves pass.

Clinically, as the disease is seen, the subjective symptoms are usually slight in comparison to the actual pathological change, and frequently there has been so little trouble with the back, and the change has taken place so gradually, that the patient is not conscious of any special limitation, the condition being discovered by accident. More often, however, there is considerable pain, which is referred to the back and which is aggravated by change of position. When quiet the pain is so much relieved that the patient frequently does not seek treatment until the disease is far advanced, or even if treatment is asked it is often excused without examination as a "touch of rheumatism" and the therapeutic suggestions made accordingly.

If the disease is seen early, before much actual change has taken place, there is usually a definite region in the spine to which the pain is referred, and in this region the motions are restricted, at first, of course, by muscular spasm, but later by osseous change. At this time, when the process is so definitely localized, the portion of the spine affected may appear more prominent than normal, suggesting the beginning deformity of Pott's disease, and at this time a positive diagnosis may not be possible. The onset is suggestive and also the reference of the pain to the back at the exact seat of the disease rather than the referred or abdominal pain of Pott's disease, but it may require some weeks before the true nature of the process can be determined. Case IV was at first thought to have Pott's disease, and it was only after seeing him several times that the correct diagnosis was made.

As the anchylosis of the spine takes place the ribs almost invariably are affected, and the process may prove so extensive that all the articulations become anchylosed, and the thorax is perfectly rigid. In this case thoracic respiration is of course entirely lost and the breathing is done wholly by the diaphragm.

Beside the pain in the back and the limitation of motion, neuralgic pains in the arms or legs, together with disturbances of sensation, numbness or hyperesthesia, are probably the most common symptoms. These are, of course, due to pressure upon the nerve roots, and consequently are not seen until the disease is well advanced, or when the onset has been unusually rapid, as in Case I. Following these neuralgic pains, when the disease is well advanced, paralysis may result, the extent of which varies from complete inability to use the part to a slight inconvenience. Rarely are the two sides affected equally, or if both sides are affected the symptoms have developed at different times. This, together with the fact that the paralysis is peripheral in type, is of importance in differentiating it from Pott's paraplegia.

Occasionally, when the disease is very active, the same osseous deposit takes place in the posterior ligament (*ligamentum longitudinale posticum*), and may result in enough narrowing of the spinal canal to produce symptoms of pressure paralysis, exactly similar to that seen in connection with Pott's disease. This is not very common, but nevertheless does occur and must be borne in mind in making the diagnosis. Case I had this type of paralysis in connection with the paralysis of the arms, due to the pressure upon the nerve roots. The presence of the two types of paralysis is of assistance in determining the diagnosis.

After the active stage of the disease has passed, with the lessened vascularity and natural shrinking of the non-osseous structures the direct pressure upon the spinal cord is usually relieved and the same may be true of the pressure upon the nerve roots. In my own experience, and so far as I can learn from the reported cases, there is no case in which the symptoms due to the direct pressure upon the cord have not been relieved. With the involvement of the nerve roots, while there has always been some improvement, in many of the cases the recovery was never complete.

The deformity, which is so striking at times, has a wide range of variation. In the most extreme form the rounded back with the protruded head and the flat chest (Fig. 3) is the type usually pictured or described. It is evident, however, that the nature or extent of the deformity must vary with the seat or extent of the disease, and also with the rapidity of its development. In Case IX, Fig. 4, the whole dorsal and lumbar spine is anchylosed, with scarcely any change in the normal curves.

The lateral deformity of such an extreme type as is shown in Fig. 1 is rarely seen, and probably could only occur late in life. The deformity is probably due to osseous deposit and thickening on one side of the spine, with atrophy and softening on the other side. A moderate amount of lateral deformity is not uncommon, and is almost always present when the disease is in the cervical region.

The treatment of this disease is of more importance than is commonly supposed, and is partly medicinal and partly mechanical. As an early diagnosis is, of course, of the first importance, it is at this time, before the deformity has taken place, that the most can be accomplished. The disease is probably a trophic process and consequently all medicines or methods of treatment which debilitate should be most carefully avoided. This naturally includes the various so-called rheumatic remedies, all of which are depressants, and also the various baths or courses of treatment which tend to lower the vitality. The general treatment should be wholly nourishing and stimulating. Extra diet, stimulating bathing, massage of the unaffected parts, electricity in a mild current, all are of value, and also the dry heat, provided it is not used so frequently as to be debilitating, relieves the pain and does much good. For medicines, iron, arsenic and strychnia are the drugs which are of the greatest value. Cod-liver oil and alcohol in medicinal doses are also useful. For mechanical treatment some form of spinal support should be used at once, partly to relieve the pain by restricting the motion, and partly to prevent the marked deformity from developing. Case IV was under treatment quite early in the disease and even with the imperfect general care which it was possible for him to have he has been kept from becoming more deformed than is shown in his picture (Fig. 2). A plaster-of-Paris jacket was used at first, and this was followed by a leather jacket, which is still worn. The whole spine has been involved and also the articulations with the ribs, and I am sure that without treatment the deformity would have been as great as that shown in Fig. 3. The position of the chest, with the greater room for respiration, has had a very definite beneficial effect upon his general health.

Manipulation of the spine is naturally of little value, and probably would result in more harm than good. Attempts have been made to forcibly break up the anchylosis,[22] but they have been followed, as would be expected, by results which were not satisfactory.

THE PLAGUE IN INDIA. — At Poonah, a city on the railroad from Bombay, where the plague is raging with unusual fury, there were, according to the *Medical Record*, 210 new cases and 177 deaths during the last week of July. In all there have been 301 cases and 261 deaths. Several Europeans have died.

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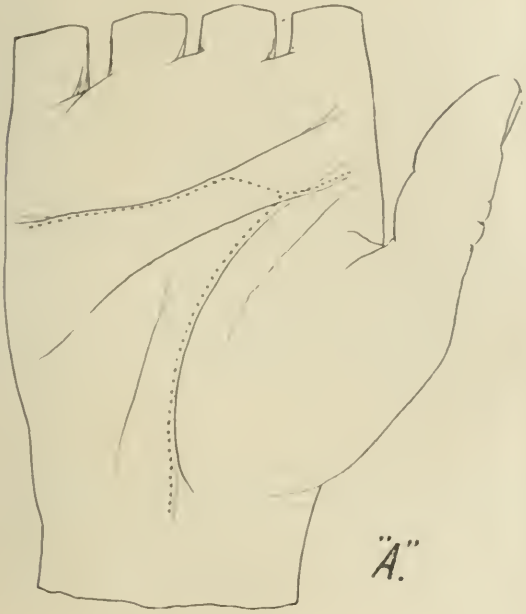
[22] Strümpell: Deutsche Ztsch. f. Nervenhk., xi, 1897, p. 338.

OPERATIONS IN THE TREATMENT OF PALMAR ABSCESS.[1]

BY W. A. BROOKS, JR., A.M., M.D., BOSTON.

As a rule, the operation upon a palmar abscess consists in making numerous short incisions through the skin over the metacarpal bones. The operation is simple of execution, and by allowing the greater part of the pus to escape greatly diminishes the danger of further extension of the suppurative process. It does not, however, give the surgeon a chance to see and examine the true condition of the structures in the palm. Even with the free use of the curette, it is lacking in thoroughness, owing to the fact that in the greater number of cases many pockets of pus remain undiscovered and unopened.

The post-operative treatment of cases operated upon by this method is unsatisfactory, for the reasons that the openings are so small that gauze drainage is likely to prevent free drainage rather than favor it, and the removal and replacing the wicks during the daily dressing cause the patient considerable suffering.

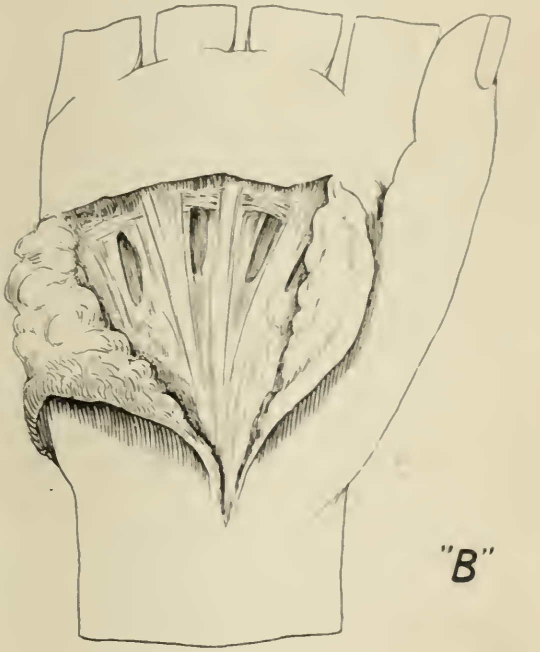

"A."

The incisions themselves, owing to their number, location and direction in which they are made, are the cause of a great deal of the stiffness which is so commonly seen in the palms of patients who have had palmar abscesses operated upon by this method, as they leave scars which run at right angles to the natural folds and are generally firmly adherent to the deep structures. Such being the case it is next to impossible for the palm to fully regain its natural flexibility.

In view of these facts, any operation which would seem to offer the advantage of being more thorough, which makes the daily dressing less painful and tends to lessen the amount of subsequent stiffness, is worthy of consideration and trial.

For the past year I have used the following method of operating upon these cases, and the results have proved most satisfactory as compared with the results obtained by the old method. The operation consists in making a long incision following the natural furrows of the palm and in dissecting back the skin, thus converting the palmar bursa into an open pouch. The incision is commenced at the end of the transverse furrow, on the ulnar side, carried almost the entire length of the furrow, then carried across to the furrow which winds around the base of the thumb, and along this to the wrist. If necessary the incision can then be carried up the middle of the forearm. After the incision has been completed the skin is carefully dissected up from the palmar fascia and the flaps turned outwards.

With the palmar fascia exposed the whole area of the palm can be explored and the various pockets of pus can be seen and curetted. Free access is given to examine and, if necessary, open the tendon sheaths. There is little danger of cutting the larger vessels and nerves, for they can be seen and avoided.


"B"

After the operation is completed the bursa is packed with gauze which has been wrung out in hot bichloride solution (1–5,000). The skin flaps are allowed to remain outside of the packing. The whole hand is then done up in an antiseptic poultice.

As a daily dressing the poultice is removed and the whole hand, with the packing still in place, is put into a hot antiseptic bath for an hour or so. Either during the bath, or immediately after, the packing is easily removed and replaced without much pain.

After a week or two the structures in the palm become covered with bright red granulations. As soon as they appear the packing is no longer used, but the skin flaps are folded back and a dry dressing applied. Union takes place between the skin and the subjacent tissues. From day to day the edges of the flaps are drawn more closely together till they come to lie on nearly their original positions.

The diagram, "A," will give an idea of the course of the incision. The dotted line should have been made on the line of the furrows.

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[1] Read before the Boston Society for Medical Improvement, January 16, 1899.

The second diagram, "B," shows how the flaps are to be turned back, and also shows how, by the splitting up of the palmar fascia, free access is given to the deepest part of the palmar bursa.

Clinical Department.

PRELIMINARY NOTE ON THE PROGNOSIS OF NEPHRITIS.[1]

BY RICHARD C. CABOT, M.D., AND FRANKLIN W. WHITE, M.D., BOSTON.

THE material upon which this study is based was obtained as follows:

From the records of the Massachusetts General Hospital for the last twenty years, the course and symptoms of all fatal cases of nephritis were noted, and the duration of each case, from the time of the first symptom to death, was estimated as accurately as possible. In addition to this, circulars were sent to the address of every patient who had left the hospital between 1880 and the present day, suffering from nephritis of any type. By means of these circulars, we attempted to find out the condition of the patients since leaving the hospital, and the date of death in the fatal cases. Only a portion of those to whom circulars were sent returned an answer, but the answers received were very instructive. All of the cases diagnosed in the hospital records as nephritis who returned any answer to our inquiries were followed up as carefully as possible, and in many cases the urine was examined. The number of these cases, together with the fatal ones, is 332.

In addition to these, we have a considerable body of data, sent us with great kindness by a large number of physicians to whom we wrote, asking whether they had ever known a case of chronic nephritis to recover, and also how long they had ever known a case of nephritis to last. This data furnished us details of 191 more cases, making a total of 423 in all.

We were stimulated to make the above investigations by the indefiniteness and disagreement of the statements in the text-books on the subject of the Prognosis of Nephritis, especially in its chronic form. Many writers show a strong tendency to hedge when it comes to the question: "Does a case of chronic nephritis, properly certified as such, ever recover?" Thus, for example, Rotch, in his "Diseases of Children," says of the prognosis of chronic nephritis: "Some cases, having the clinical features of the disease, have apparently recovered." Delafield, in the "American System of Medicine," says, under Chronic Diffuse Nephritis, "Recovery seems to be possible." Osler says that in chronic parenchymatous nephritis, recovery rarely takes place in a case that has persisted for more than a year, but occasionally in children, even when the disease has persisted for two years, symptoms disappear and recovery takes place. Senator,[2] speaking of chronic diffuse nephritis, says that termination in recovery is a rare exception, but undoubtedly occurs. He agrees with Rosenstein that these are usually cases which, after acute onset as a result of infectious disease or exposure, become chronic, and after one and one-half or two years, end in recovery, the urine becoming entirely normal. An entire *restitutio ad integrum* of all the kidney tissue does not occur, but this is not indispensable for complete functional recovery. He also says that death is invariably the result in interstitial nephritis where the typical contracted kidney is developed, and the heart hypertrophy is marked. Recovery (functional) is possible, and under proper treatment is not rare in the first stage, that is, as long as no sign of heart or vessel lesion has developed.

Strümpell, in his last German edition, speaking of chronic diffuse nephritis, says that complete recovery undoubtedly occurs, but is rare. By the passage of the large kidney into secondary contraction "apparent healing" may occur, in which the subjective condition of the patient is almost entirely satisfactory. He considers chronic insterstitial nephritis incurable, though life may be prolonged without any considerable unpleasant symptoms for many years. Bartels, in "Zeimssens' Encyclopedia," says that chronic nephritis is incurable after a certain time, but that cases have recovered even after months of dropsy. On the other hand, Brault in the "Traité de Médicine," says that in chronic nephritis the future is always sombre; sooner or later uremia or a complication leads to a fatal ending. Tyson, also, and Loomis, in the "Twentieth Century Practice of Medicine," say that cases never recover. In Albutt's System, and in Fagge, no definite statements are made on this point.

Under these circumstances, with such variety in the opinions of the foremost writers, our interest centered about the question: "Does a case of chronic nephritis, certified as such, ever recover?"

At this point it seems best to define what we mean by chronic nephritis and by recovery.

(1) We recognize two important types of chronic nephritis: (*a*) Chronic diffuse nephritis, and (*b*) interstitial nephritis.

(*a*) By chronic diffuse nephritis we mean a disease characterized by prolonged anasarca and effusions into the serous cavities, early and pronounced manifestations of uremia, such as headache, vomiting, and dyspnea, vascular changes, such as cardiac hypertrophy and a high tension pulse, and a pale urine usually diminished in amount, containing a large amount of albumin, with an abundance of fatty elements in the sediment.

(*b*) By chronic interstitial nephritis we mean a disease of insidious onset and long course, with comparatively early appearance of the vascular changes above mentioned, and little or no edema until the heart fails, with late and usually less marked uremic symptoms, a large amount of urine of low specific gravity, with albumin present in very small quantities if at all, and a sediment containing usually only a few hyaline and granular casts.

(2) We consider a patient to have recovered when he has no subjective symptoms characteristic of nephritis, and passes normal urine.

Defining our terms in this way, we have now come to the analysis of our cases, and taking first the data from the Massachusetts General Hospital records, we find that of the total 304 cases in which a diagnosis of chronic nephritis stands recorded on the books of the hospital, and which we have been able to follow up till death, or till the present time, there are only 17 whose urine and general condition show that the patient has really recovered. In most of these cases, although the diagnosis of chronic nephritis stands upon the books, it is difficult to see why it should have been made. From the facts recorded it was evident, in most of the cases, that the patient was rapidly improving, that the symptoms were of comparatively brief duration, and the diagnosis seemed unjustified. In a few cases, on the other hand, the long duration of the symptoms and the character of the urine indicate an undoubted chronic nephritis followed by a genuine recovery. The following two cases are among the more remarkable of our series:

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[1] Read at the annual meeting of the Massachusetts Medical Society, June 13, 1899.

[2] Senator: Erkrankungen der Nieren.

Case I. Woman, age twenty-three years. Eight years ago symptoms of chronic diffuse nephritis lasting for two and one-half years, headache, vomiting, marked edema of body, face and legs, also ascites, which was tapped twice. Urine contained one-quarter to one per cent. albumin and many hyaline, granular and fatty casts. For the last six years she has been perfectly well and leading an active life. The urine examined a year ago and also this year was normal, free from casts and albumin.

Case II. Boy, age sixteen years. Chronic diffuse nephritis followed scarlet fever at the age of eight years, lasting for four and one-half years, with headache, vomiting and anasarca. The urine contained one-eighth per cent. albumin and many hyaline, granular and epithelial casts. He had several severe exacerbations. Has been perfectly well for three and one-half years and is now at work. The urine at the present time is perfectly normal.

In answer to the question, "Have you ever known a case of chronic nephritis to recover?" forty-eight of the physicians who were asked said no, and twenty-one (about one-third of the whole number) said yes. Among these latter answers are the following:

(1) Dr. J. M. Da Costa, of Philadelphia, writes of the case of a young woman, eighteen years of age, who had chronic parenchymatous nephritis of about a year's duration:

> The disease came on gradually, though there was a statement of its having followed exposure. Dropsy was a marked symptom. There was considerable albumin in the urine, and epithelial casts. She gradually recovered entirely, got married, and became the mother of five children. She was seen last year, and her urine was found to be perfectly normal.
>
> In a second case, twenty years of age, seen in consultation, the disease of the kidney followed scarlet fever at the age of eight. As a boy, he learned to test his urine for albumin, and continued to test it until he was grown up, with the result of never finding albumin absent, though not present in great quantity. He tested for it and found it only a few months before an exacerbation of the disease, coming on after exposure; in this the urine contained large amounts of albumin and tube casts. Under a rigid milk diet for three months, mild diuretic waters, iron, and other means, the dropsy disappeared, and his general condition greatly improved, but albumin remained. Pursuing treatment for two months more, the albumin gradually disappeared, and, though constantly tested for (and he was no longer on a restricted diet), none was found for some months afterwards, when he was looked upon as having entirely recovered. I never heard of a return of the disease.
>
> In a third case, in a man sixty years of age, who was dropsical for months, there was a history of the kidney disease having begun after exposure about two months before he came under observation. The urine was markedly albuminous and contained tube casts, but no blood casts or blood. Under treatment for ten weeks, the albumin was reduced to a trace, and for some little time was absent; but a few months afterward, during a period of great family distress, it was again found in the urine, though not in large amount. Under treatment it slowly disappeared, and, examining him three years afterward, not a trace of kidney disease could be detected. The patient subsequently died of phthisis, which was hereditary in his family.

(2) From Dr. Charles G. Stockton, of Buffalo, we received the following case:

> The case came under my observation in the autumn of 1890. The patient was a woman about forty-six years old, of medium height, and 240 pounds. The exact weight could not be ascertained. She had been in poor health for several years, and for the past six months had suffered from headache, dizziness, anorexia, mental confusion, irregularity of the bowels, and increased general anasarca. The aortic second sound was relatively intense and high pitched; the apex too far to the left, not palpable owing to the fat. There were no bruits. There was increased arterial tension.
>
> The first recorded examination showed about 12 per cent. albumin (by bulk), with hyaline, granular, and epithelial casts. A more complete examination was made a few days later when she voided, in twenty-four hours, 26 ounces of urine containing 27.4 grammes of urea and albumin about four per cent.
>
> Examinations were now made daily and it was found that the amount of albumin, by Esbach's method, was from two to four grammes per litre. The casts continued; sometimes the hyaline form predominated, at other times both finely and coarsely granular casts predominated, and occasionally large numbers of epithelial casts were seen. Under treatment on the 9th of January, 1891, only one-half gramme of albumin to the litre was found, and 1,136 cubic centimetres of urine were passed in twenty-four hours and the urea had risen to 30.67 grammes. This amount did not continue, and she had a number of relapses, judging from the condition of the urine. For instance, on the 14th of January there was in 1,408 cubic centimetres of urine two grammes of albumin per litre, and the same casts. On the 25th of January the urine had fallen to 768 cubic centimetres, 21 grammes of urea, two and one-half grammes of albumin per litre; no casts were found. On February 27th, albumin four grammes per litre, urea 29.23 grammes, a number of uric-acid crystals, hyaline and epithelial casts, and renal epithelium. On the 8th of March the urea had fallen to 19 grammes, albumin had risen to 4.50 grammes per litre; there were hyaline casts. On the 15th of March there were no casts found. Urinary examinations showed varying results, but on the whole about the same for some months thereafter. In September there were six grammes of albumin to the litre, 832 cubic centimetres of urine, 21 grammes of urea; no casts found. On the 11th of November a few casts, urea had fallen to 16 grammes. From this time on the casts decreased in number and were almost altogether hyaline, albumin varied. On November 19th there were five and one-half grammes per litre; December 12th, a few casts. January 3, 1892, urine 28 ounces, urea 22.4 grammes, hyaline, slightly granular casts. July 12, 1892, .75 gramme of albumin per litre, urea 22 grammes, pus corpuscles, epithelium and a few granular casts. December 6, 1892, more than two years after I first saw her, the albumin was .25 gramme per litre; one small granular cast. May 9, 1893, there was no albumin, urea 23.71, and no casts found. From this time on the urea was less in amount, the urine became more abundant; albumin was found in varying quantities, usually in traces only, and occasionally hyaline and slightly granular casts. For the past three years, I have found that the urine has been uniformly free from albumin and casts. The patient's general condition corresponded rather closely with the state of her urine. Her symptoms were somewhat promptly relieved by treatment, but there was more or less edema for at least a year after I first saw her. Her vision was disturbed in the beginning, but an eye examination showed that the retina was not affected. I have a report on the condition of the retina reaching back as far as 1888.

(3) From Dr. D. W. Prentiss, of Washington, the following note:

> A case of chronic parenchymatous nephritis had been ill about six months when I first saw him. Diagnosis unmistakable; recovered in about a year. This was eighteen years ago. He is still well and has been working at his trade ever since. Theory of recovery: that but one kidney was affected.

(4) From Dr. G. Baumgarten, of St. Louis, the following:

> In August, 1894, the patient had edema of the face and hands. In October, 1894, extensive anasarca was present; urine about normal in quantity, 1.015, one and one-half to two per cent. of albumin, granular casts, leucocytes, no blood. December 25, 1894, much better; anasarca about the same, urine one and one-half per cent. albumin, many casts. January, 1895, dropsy began to disappear; returned to work. May, 1896, feels well; urine 1.029, with a trace of albumin and few casts. April, 1897, excellent health; urine free from albumin and casts; has remained well to this day.

Other physicians who have known cases of chronic nephritis to recover are H. C. Wood and J. P. C. Griffith, of Philadelphia; Beverly Robinson, J. S. Billings, and G. L. Peabody, of New York; J. B. Herrick, of Chicago; E. L. Trudeau, of Saranac, and W. S. Thayer, of Baltimore.

In addition to our recovered cases there are nine patients who are at work and in good health at the present time, despite the presence of albumin and casts in greater or less quantity in the urine. The duration of these cases from the first symptoms suggestive of nephritis up to the present time is as follows: One for five months, two for five years, one for seven years, two for eight years, one for ten years, one for eleven years and one for twelve years.

Many of these latent cases were very striking. The people were able to work hard and steadily for years at a time without interruption, and were entirely free from any disagreeable signs or symptoms, while at the same time the urine contained a trace to one-quarter per cent. of albumin and an abundance of casts.

Among the cases of which notes were sent us by other physicians are the following:

Dr. Franz Pfaff, of Boston, says:

> I have under observation a patient who has had nephritis for twenty-five years. The urine shows, as the result of repeated examinations, the following characteristics: amount 1,680 cubic centimetres; specific gravity 1.009; albumin very large trace; urea 1.13 per cent.: hundreds of casts in large slide, hyaline, fine granular, coarse granular, a few very highly refracting. Many of the casts are fatty and had renal cells adherent.

Dr. Wharton Sinkler, of Philadelphia, sends the following cases:

> (1) Mrs. W. had puerperal nephritis and lived twenty-five years with it. The urine always contained albumin.
>
> (2) Mr. E. has had nephritis for about twenty years. It began with an acute attack, with bloody urine. He is still in fair health, though the urine contains albumin.

Dr. Isaac Adler, of New York, sends the following:

> I have under observation a case of chronic parenchymatous nephritis which has lasted for twenty-six years, and still shows but little disturbances of general health; no edema; no ascites. The urine contains, on the average, two per *mille* of albumin (Esbach), with granular and fatty casts.

Dr. Alfred Stengel, of Philadelphia, says:

> I have under my care two physicians. One has had albumin, casts, and the general symptoms suggestive of chronic interstitial nephritis for ten years to my knowledge. He himself believes that he has had it for twenty years, having discovered albumin in his urine as long ago as that.
>
> Another case which occurs to me is a lady who has had nephritis certainly for twelve years. Lately, there has been a little swelling of the feet, but this is the only symptom I have ever discovered suggestive of nephritis.

Dr. James Tyson, of Philadelphia, writes:

> Recently I was asked for an opinion in the case of an army officer who had an acknowledged uremic convulsion twenty-nine years ago; returned to duty, and remained on duty until last summer, when he died of Bright's disease.

Two hundred and sixty-nine of our cases have died. The average duration of these fatal cases from start to finish was nineteen months. Forty of our cases lasted less than two months from the first symptom to the time of death. One hundred and fifty-two cases lasted from two months to two years, and 46 cases from two to five years. The longest cases in our series are seven, ten, twelve, fourteen, sixteen, twenty, and twenty-three years. Of the fatal cases, 210 were of the type of chronic diffuse nephritis under which we include those ordinarily classed as chronic parenchymatous nephritis; 52 were of the interstitial type.

In the list of 91 cases of long duration sent us by physicians, 27 had lasted from ten to fifteen years; 16 from fifteen to twenty years; and six over twenty years, namely: one, twenty-two years; three, twenty-five years; one, twenty-eight years, and one, thirty years.

The number of acute cases in our series was so small that it has seemed best to discard them. It is a notable fact, in this connection, that for the last five years the number of cases diagnosed as acute nephritis at the Massachusetts General Hospital has steadily diminished. We interpret this to mean that cases formerly called acute are now considered as an acute exacerbation of a chronic case.

RELATION BETWEEN ETIOLOGY AND PROGNOSIS.

The nine cases in which there was a distinct history of lead poisoning have generally run a comparatively long course. The same is true of the 16 cases in which syphilis occurred. Some of the shortest cases, if we are to judge simply by the duration of definite symptoms, were those associated with arterio-sclerosis, in which fatal uremia came on out of a clear sky and killed the patient within a week.

Curiously enough, the 57 cases in which the only possible etiological factor obtainable was heredity; that is, a family history of nephritis, dropsy, apoplexy, heart disease, or phthisis, seemed to run a relatively long course.

We were unable to observe any relation between the duration of cases and the occurrence of such etiological factors as abuse of alcohol, infectious diseases, pregnancy, or exposure to cold. In the vast majority of our cases no cause of any kind could be traced.

EFFECT OF COMPLICATIONS UPON PROGNOSIS.

Complications were the cause of death apparently in 44 cases out of our 332. Pneumonia and pericarditis were the most frequent of these and phthisis next. Pneumonia and pericarditis have occurred with about equal frequency, and our statistics indicate that pneumonia is equally common as a cause of death in cases of short and of long duration, while pericarditis seems more apt to carry off a patient at a comparatively early stage of the disease. Thus of the 11 cases ending fatally with acute pneumonia, five cases had a duration of less than two years, and six cases of two years or more. On the other hand, only two of the 15 cases ending with acute pericarditis had a duration of two or more years.

As cases of nephritis get on past the first year the dangers of such complications as cerebral hemorrhage, hemiplegia, and gangrene increase.

RELATION OF DROPSY TO PROGNOSIS.

It has been said by good authorities that the prognosis in diffuse nephritis is worse in cases where dropsy is marked, but in 47 cases of our series, in which no dropsy occurred, the average duration was ten months, compared to twenty-three months, which is the average duration of the cases in which dropsy was present. In short, the course of the disease in the cases of diffuse nephritis without dropsy was less than half as long as in the cases with dropsy.

Dropsy is not sufficiently common in interstitial nephritis to be of much prognostic value.

RELATION OF RETINAL CHANGES TO PROGNOSIS.

Good authorities state that cases of chronic nephritis rarely last more than two years after the presence of hemorrhages in the retina. This is borne out by our series of cases, of which only one lived over two years from the time at which hemorrhages were seen in the fundus oculi. In this case, however, the patient lived five years and seven months, after the date at which retinal hemorrhages in both eyes were observed by Dr. Wadsworth at the Massachusetts General Hospital.

CARDIAC ENLARGEMENT AND PROGNOSIS.

Occurrence of hypertrophy of the heart is universally acknowledged as marking the advance of the disease beyond the curable stage. This is borne out by our statistics of the 104 cases in which cardiac enlargement was demonstrated. Only three lived more than two years from the date at which the enlargement was demonstrated.

We will summarize our conclusions as follows:

(1) Chronic nephritis is not an absolutely incurable disease. Recovery occurs in rare instances.

(2) Chronic nephritis may exist for a long series of years without causing any apparent constitutional disturbance.

(3) The average duration in 332 cases of chronic nephritis was nineteen months.

(4) Acute nephritis is less common than has been supposed; many cases formerly diagnosed as such have been shown to represent exacerbations in chronic nephritis.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

Regular meeting, January 16, 1899.

Dr. Wm. A. Brooks, Jr., presented an

OPERATION FOR PALMAR ABSCESS.[1]

This was illustrated by a dissection, and a patient operated upon in the method described.

Dr. M. H. Richardson read a paper on

THE SURGICAL TREATMENT OF ESOPHAGEAL DIVERTICULA.

Dr. W. B. Hills read a paper on

THE PROTEIDS OF THE URINE.[2]

Dr. Wood: There is hardly anything to be said in addition to what Dr. Hills has given us in regard to the globulinuria and the so-called peptonuria. It has, of course, for a long time been well known that globulins have been present with serum-albumin in the urine of almost all cases of so-called albuminuria. There is one set of cases, which I did not understand Dr. Hills to include, in which one pure globulinuria was found in a series of 40 cases, and the statement has been made that the relative proportion of globulins increases as improvement takes place. This would make a very interesting subject to follow up, and I hope Dr. Hills will continue his work in that direction, particularly with acute nephritis, and in cases of simple improvement in interstitial disease of the kidney. One author has mentioned that the largest proportion of globulin was found in cases of interstitial disease of the kidney and in cases of passive congestion secondary to heart trouble. With reference to what has been called peptonuria, which Dr. Hills has shown us is very largely due to the presence of proteoses in the urine, the important point seems to me to be that this condition has been shown to be caused by the retrograde metabolism of the cell elements, and is found in cases of resorption of pus and in cases of extensive extravasation of blood, etc., and also in cases where any tissue whatever is undergoing unusual retrograde metabolism, as in subinvolution of the uterus, and in pneumonia, as reported by Dr. Hills. I would add that in the cases of true albumosuria. where there are large quantities of albumose present and of which I have seen three cases, the albumose appears to be, in both cases which have been investigated, very largely in the form of nucleo-albumose. The albumose in those cases has contained a very large proportion of phosphorus.

Dr. Hills: I think Dr. Wood referred to certain cases of hyperemia dependent upon heart disease. Those cases, if I remember correctly, were reported by Maguire, and I did not call particular attention to them, because other investigators, Paton for instance, were not able to confirm the observation. I remember the fact as you suggest it.

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MAINE MEDICAL ASSOCIATION.

FORTY-SEVENTH ANNUAL MEETING, HELD AT BANGOR. JUNE 7 AND 8, 1899.

The Association met in the Common Council chamber of the City Building at 10.15 A. M., Wednesday, June 7th, the President, Dr. C. O. Hunt, of Portland, in the chair. Prayer was offered by the Rev. C. H. Cutter, of the First Parish Church.

The Treasurer's report showed the usual satisfactory financial condition of the Association, having a cash balance of $2.433.39.

Dr. R. L. Grindle, of Mt. Desert, reported verbally the case of a patient who had three successive attacks of puerperal septicemia, successfully treated by the intra-uterine application of glycerine in suppositories.

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[1] See page 133 of the Journal.

[2] See page 125 of the Journal.

Dr. B. F. Bradbury, of Norway, who was a brigade surgeon at Chickamauga, read a paper on

A DIVISION HOSPITAL AT CHICKAMAUGA.

Dr. Chas. D. Smith, of Portland, read a paper on

TREATMENT OF CASES OF CHICKAMAUGA TYPHOID AT THE MAINE GENERAL HOSPITAL.

Surgeon Bradbury's paper called special attention to the efforts made by Surgeon-General Sternberg, by preliminary warning and instruction, to avert the epidemic which swept Camp Thomas. The story of overworked medical officers, insufficient supplies because of defective transportation, was the same already so many times repeated.

Dr. O. de S. Davies, of Augusta, read a paper on

NEURASTHENIA.

AFTERNOON SESSION.

Drs. F. W. Anthony, of Haverhill, and E. W. Cushing, of Boston, were introduced as delegates from the Massachusetts Medical Society. Both gentlemen subsequently participated in the discussions and contributed not a little to their interest.

Dr. F. W. Lamb, of Tilton, was introduced as a delegate from the New Hampshire Medical Society.

The President's Address upon matters of historical interest to the Association was delivered by Dr. C. O. Hunt, of Portland. It reviewed medical work in Maine since the last meeting at Bangor in 1869.

By request of many members it was voted to instruct the Board of Censors to fix the date of the next meeting so as not to conflict with the date of the meeting of the American Medical Association.

Dr J. K. Phillips, of Bangor, read a paper on

THIRTY APPENDECTOMIES,

and presented beautifully prepared specimens of appendices from all the cases with detailed histories.

In discussion, Dr. Alfred King, of Portland, pointed out thirty-one conditions which have been mistaken in diagnosis for appendicitis, and urged early operation, especially in the doubtful cases.

Dr. S. C. Gordon, of Portland, insisted upon treatment of the acute attack with salines, reserving operation for the interval, claiming that more than 90 per cent. of cases so treated recover from the first attack.

Dr. George F. Libby reported a series of cases of middle-ear suppuration successfully treated by application of acetanilid.

EVENING SESSION.

Dr. F. J. Taylor, of Pittsfield, read a paper on

THE THERAPEUTICS OF WHOOPING-COUGH,

laying stress on the advantages of vaporized formalin to allay the paroxysms.

In discussion it was brought out that in Maine, and especially Penobscot County, the mortality from whooping-cough was greater than that in measles or scarlatina.

Dr. A. D. Sawyer, of Fort Fairfield, read a paper on

DISEASES OF THE UPPER AIR PASSAGES.

A series of seven-minute papers presented for discussion

LOBAR PNEUMONIA IN ITS CLINICAL VARIETIES, ITS SYMPTOMS, COURSE AND DURATION, ITS MEDICINAL TREATMENT AND ITS NON-MEDICINAL TREATMENT.

The discussion was postponed to listen to a paper read by invitation, from Dr. E. W. Cushing, of Boston, on

DISORDERS OF THE MENOPAUSE.

SECOND DAY. — MORNING SESSION.

The Association met at 9.45 o'clock, and adopted a standing rule providing for an annual dinner under the management of a committee appointed by the Association, individual members purchasing tickets and the Association bearing the cost of preparation and the entertainment of invited guests. Heretofore entertainment has always been at the expense of local members where the meetings were held.

Dr. James A. Spalding, of Portland, read a paper on

SOME SEQUELÆ OF INFLUENZA, WITH SPECIAL REFERENCE TO THE EYE AND EAR.

The annual election of officers followed. Dr. B. T. Sanborn, of Augusta, superintendent of the Maine Insane Hospital, was the unanimous choice for President. Other officers are First Vice-President, Dr. B. F. Bradbury, Norway; Second Vice-President, Dr. W. L. Hunt, Bangor; Treasurer, Dr. Augustus S. Thayer, Portland; Recording Secretary, Dr. Charles D. Smith, Portland; Corresponding Secretary, Dr. A. D. Sawyer, Fort Fairfield.

Board of Censors: Drs. John F. Thompson, Portland; Arthur S. Gilson, Portland; Hiram Hunt, Greenville; John E. Walker, Thomaston; Gilbert M. Elliott, Brunswick.

Committee on Publication: Drs. Chas D. Smith, (*ex officio*), Portland; W. B. Moulton, Portland; E. J. McDonough, Portland; Geo. A. Coombs, Waldoboro; H. H. Purinton, Lewiston.

Business Committee: Drs. B. B. Foster, Portland; Stanley P. Warren, Portland.

The Secretary reported as deceased during the year, Drs. F. C. Hall, Lisbon Falls; Geo. Z. Higgins, Strong; J. M. Jonah, Eastport; H. C. Levensaler, Thomaston; C. J. Milliken, Cherryfield; A. P. Snow, Winthrop; D. D. Spear, Portland, and not previously reported, Dr. W. N. Adams, Brunswick.

Dr. S. C. Gordon, of Portland, introduced the subject of the

ABUSE OF HOSPITAL CHARITY BY PEOPLE ABLE TO PAY,

and offered the following resolution:

Resolved, That charity work for people able to pay should cease in the institutions of this State.

Dr. Gordon said what was desired was an expression of the sentiment of the Association, which might be presented to the directors of the different hospitals.

In the discussion it was brought out as the sentiment of the Association that if some plan could be devised by the management of the hospitals whereby people able to pay could be required, in addition to the fixed charges for ward and nursing, to pay the same fees for medical and surgical work as they would at home, such fees in all cases to go to the treasury of the institution and not to individual members of the staffs, the unequal competition on the part of the hospitals would be avoided or greatly lessened.

It was also apparent that the Association believed the plan for such an arrangement ought to be made by the institutions, and that the burden ought not to be laid on the profession.

The opinion was also expressed by Dr. C. O. Hunt, superintendent of the Maine General Hospital, that there were some difficulties in the way of arranging a scale of prices, to meet the different classes of paying patients. More than 90 per cent. of the patients who come under this class at the Maine General Hospital are from the small back towns, are of slender means and come with letters from their physicians asking for reductions in rates for their benefit. How should the standard be fixed? How was the superintendent to know whom to favor, and how was he to determine the ability of one person to pay more or less than another? He believed the principle of the resolution to be right, but did not think the remedy so easy as it seemed to many.

The resolution was given a unanimous passage. The Secretary was instructed to acquaint the presidents of other New England medical societies with this action.

Dr. S. C. Gordon, of Portland, read a paper on

CONSERVATIVE GYNECOLOGY,

based upon the ground that whatever conserved the health of the woman and cured her disease in the quickest and most complete way was the most conservative surgery. This he believed to be by complete instead of partial removal of the uterus and adnexa, for diseases of those organs.

Dr. S. H. Weeks, of Portland, read a paper advocating the

ABDOMINAL ROUTE IN PELVIC SURGERY OVER THE VAGINAL

in the greater proportion of cases in which the uterus or parts of the uterus and appendages are removed.

Dr. M. H. Richardson, in discussion, said carcinoma of the body or cervix was the one condition which made the vaginal route preferable, because one could draw away from the wound and the peritoneum a sloughing septic mass, instead of drawing it through and over it.

The evening session was held in City Hall at 8 o'clock. Reports were received from delegates to other medical societies and were referred by title to the Committee on Publication.

The Board of Censors made its final report as follows:

Bangor, Maine, June 8, 1899.

To the Officers and Members of the Maine Medical Association:

Gentlemen, — The Board of Censors desires to make its final report, embodying the following appointments and recommendations:

It is recommended that the next annual meeting of the Association be held in Portland, on Wednesday, Thursday and Friday, June 13, 14 and 15, 1900.

It is recommended that the selection of orator be left to the chairman of the next Board of Censors, with power.

The following appointments are made:

Visitors to the Maine Insane Hospital: Drs. O. C. S. Davies, Augusta; W. P. Giddings, Gardiner; W. B. Small, Lewiston.

Visitors to the Portland School for medical instruction: Drs. J. D. Cochrane, Saco; W. K. Oakes, Auburn.

Visitor to Medical School of Maine, (two years): Dr. J. M. Wakefield, Warren.

Delegates to American Medical Association: Drs. Alonzo Garcelon, Lewiston; S. C. Gordon, Portland; D. A. Robinson, Bangor.

New Hampshire: Drs. Chas. D. Smith, Portland; J. A. Randall, Old Orchard; F. L. Davis, Biddeford; A. Millett, Searsmont.

Vermont: Drs. W. D. Williamson, Gorham, N. H.; John D. Holt, Berlin, N. H.; D. H. Kelley, Mattawamkeag.

Massachusetts: Drs. J. K. Phillips, Bangor; Walter L. Hunt, Bangor; H. P. Merrill, Portland.

Rhode Island: Drs. R. L. Grindle, Mt. Desert; S. J. Bassford, Biddeford.

Connecticut: Drs. H. H. Smith, Whitneyville, Ct.; S. B. Hunter, Machias.

New York State Medical Association: Drs. Daniel McCann, Bangor; George A. Phillips, Ellsworth; Augustus S. Thayer, Portland.

New Brunswick: Drs. Charles E. Williams, Houlton; A. D. Sawyer, Fort Fairfield.

Maritime Medical Association: Drs. D. B. Myshrall, Portland; Stephen E. Webber, Calais.

Delegates to the Pharmaceutical Convention, 1900: Drs. C. O. Hunt, Portland; A. Mitchell, Brunswick; Ad. S. Thayer, Portland.

Committee to arrange for entertainment at next annual meeting: Drs. H. H. Brock, Portland; J. W. Bowers, Portland; John F. Thompson, Portland.

It is recommended that the President and Secretary have power to grant credentials to members wishing to attend the meeting of the American Medical Association as delegates, and to fill vacancies occurring in delegations to other State societies.

Also, that the appointment of delegates to county societies be left to the President and Secretary, with power.

It is also recommended that applications for membership received this year for the first time and not acted upon be referred to the next Board of Censors.

The report was accepted and its recommendations adopted.

Dr. Maurice H. Richardson, of Boston, then delivered the annual oration upon the subject of

ACUTE ABDOMINAL SYMPTOMS REQUIRING IMMEDIATE SURGICAL INTERVENTION.

The thanks of the Association were extended to the orator for his valuable address, and a copy requested for publication.

After the usual votes of thanks to retiring officers, the local committee and the city of Bangor, the thanks of the Association were extended to the Penobscot County Medical Society, which, through its members residing in Bangor, had entertained the Association during its stay.

The Association then adjourned to the second Wednesday in June, 1900.

Dr. D. A. Robinson, on behalf of the Penobscot County Medical Society, extended to the Association an invitation to remain and partake of a collation which had been prepared in the hall.

It had been the intent of the committee to have entertained the Association at the Niben Club a few miles out of town, after the session of the afternoon, but rain had necessitated the abandonment of this plan.

The meeting was one of the best for many years, both in the character of the papers and the attendance, which was exceptionally large.

During the session the censors recommended and the Association elected thirty-one new members.

The next meeting will be held in Portland in 1900, on the second Wednesday, Thursday and Friday in June.

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AMERICAN ORTHOPEDIC ASSOCIATION.

Thirteenth Annual Meeting, held in New York, May 31, June 1 and 2, 1899.

FIRST DAY.

Dr. W. R. **Townsend**, of New York, delivered the

PRESIDENT'S ADDRESS.

He described the development of orthopedic surgery, as indicated by hospitals and dispensaries for such work, in and about New York City. He said that the pioneer institution had been established in 1866, largely through the efforts of the late Dr. C. Fayette Taylor. This subsequently moved to the present site of the New York Orthopedic Dispensary and Hospital. In 1870 the Hospital for Ruptured and Crippled had been ready for occupancy. Its founder, the well-known and indefatigable worker in this field, Dr. James Knight, died in 1887, after many years of unremitting labor for his chosen specialty. The present institution had been recently supplied with the most modern operating equipment, together with pathological and bacteriological laboratories. Altogether there were more than five hundred beds for orthopedic patients in New York City, and during last year about fifteen thousand out-patients were treated.

DR. CHARLES FAYETTE TAYLOR.

Dr. E. H. **Bradford**, of Boston, presented a memorial address on the life and labors of this eminent orthopedic surgeon.

THE FORCIBLE CORRECTION OF LATERAL CURVATURE.

Drs. E. H. **Bradford** and E. G. **Brackett**, of Boston, presented this communication.

These authors asserted that it was particularly desirable in these cases to make the pressure over three points, namely, (1) Over the point of maximum curvature; (2) over the pelvis; and (3) on the neck or above the scapulæ, using of course, counterpressure at three corresponding positions anteriorly. The treatment was carried out with the aid of the hammock, or preferably the Brackett frame — a mechanical device for making the requisite pressure in the regions mentioned. Not only did this treatment reduce the deformity, but it often increased the flexibility. It was applicable to cases in which other methods could not be used, and to cases in the growing stage in which there was more or less bony change.

SOME REMARKS ON THE CLASS METHOD OF GYMNASTIC TREATMENT IN LATERAL CURVATURE.

Dr. Walter **Truslow**, of New York, presented this paper by invitation, and subsequently gave an interesting exhibition of the method at the Hospital for Ruptured and Crippled. The paper was based on his work in this field during the past seventeen months on 199 cases, varying in age from eleven to sixteen years, with a few exceptions. A little less than fifty per cent. of the cases had presented postural deformities, while the other half had had more or less fixed deformities beyond the control of the motor apparatus. The treatment had aimed to so train the muscles as to allow of their assuming an approximately normal position. Experience had demonstrated the advisability of dividing the cases into three classes, namely: (1) Children just past puberty beginning the treatment; (2) children who still required treatment but were sufficiently advanced to work with older ones just beginning; and (3) those who had acquired sufficient muscular development to engage in heavier work. The method was an adaptation of the Swedish educational gymnastic movements. These exercises had been found well adapted to the isolation and stimulation into activity of groups of muscles, thus securing correction of faulty positions and at the same time developing purposeful and intelligent co-operation. Nearly all those who had faithfully followed the treatment had exhibited decided improvement.

SOME POST-PARALYTIC DEFORMITIES AND THEIR TREATMENT.

Dr. Jacob **Teschner**, of New York, presented this paper. He said that he looked upon the reaction of degeneration in the muscle as evidence only that the greater part of the muscle had been changed, and did not necessarily mean that there were no fasiculi that retained their normal properties. In a comparatively short time he had secured in each case treated far better results than had been secured by others from a much longer use of massage and electricity.

Dr. J. E. **Goldthwait**, of Boston, in opening the discussion on the foregoing papers, said that it was well to remember that forcible correction did not cure rotary lateral curvature, though it was a valuable adjunct to other measures. According to his experience the maximum improvement had been attained by the forcible method in a short time. It was important to study the record of the pulse taken before exercising and ten minutes afterward, as this constituted an important factor in prescribing the kind and amount of exercise best suited to the individual patient. The exercise should be so regulated that the pulse-rate would be lower after than before exercise.

Dr. John **Ridlon**, of Chicago, said that in dispensary work he had obtained some excellent results by applying plaster jackets to patients while lying on a modification of Goldthwait's frame.

Dr. H. Augustus **Wilson**, of Philadelphia, spoke in favor of manipulations carried out with the surgeon's knee as a fulcrum, and claimed that not only were the results good, but the patient was spared the terrifying effect of seeing the large and complicated mechanical devices. The patient being seated on a chair with the pelvis fixed, the back to the manipulator and the hands raised, the surgeon bent the patient laterally over his knee, and after the full amount of flexion had been obtained by rotation of the shoulders in one or the other direction, it was possible to obtain an untwisting that was exceedingly valuable in promoting flexibility of the spine and in aiding the development of the muscles.

Dr. Louis A. **Weigel**, of Rochester, pointed out the fact that Dr. Brackett recommended a method of correction that was maintained for a considerable time — a point of no little importance.

Dr. B. E. McKenzie, of Toronto, said that he had already published a method of correction in which the patient while suspended by the neck had lateral traction made at the point of greatest lateral curvature, while the surgeon used his hands to untwist the rotation. He favored a combination of individual and class instruction. The latter had the very distinct advantage of stimulating rivalry among the pupils.

Dr. T. E. Satterthwaite, of New York, spoke in favor of class work and of manual, as opposed to force exerted by machines.

Dr. Reginald H. Sayre, of New York, said that the patient could not voluntarily correct the deformity until adhesions had been broken up, and in a certain number of cases in which it had seemed impossible to do much by the ordinary means he had given an anesthetic and by violent manipulation had broken up the adhesions. While still recumbent, strong traction had been made and a plaster jacket applied. This treatment had been followed by little or no reaction, and in some of the cases the result had been quite good. It was essential that the patient should understand the object of the treatment so that he could co-operate with the surgeon and carry out the principles during the greater part of each twenty-four hours.

Dr. W. E. Wirt, of Cleveland, thought if more than four or five were in a class the details would be neglected. His own plan was to correct the deformity as far as possible by suspension and posture; prepare a plaster-of-Paris mould from the patient, and so alter it that the corset modelled on this mould would be somewhat over-corrected. At night the corset was replaced by a sleeping apparatus.

Dr. R. Tunstall Taylor, of Baltimore, said that where the patient was too weak or too listless to hold the body straight he used a brace, modelled after the human hand, and having the pelvis for its base of support. Exercising before the looking-glass and reference to photographs were aids to both patient and surgeon.

CONGENITAL DEFORMITIES OF THE SPINE.

Dr. Augustus Thorndike, of Boston, read a paper on this subject, illustrating it freely with anatomical and pathological plates. Speaking of spina bifida, he said that a very large proportion of these cases died within the first year of life. At present the tendency was to favor excision. Excision should be done whenever rupture had occurred or was imminent. Excision purely for the purpose of relieving paralysis was rarely successful.

THE DIAGNOSTIC VALUE OF RADIOGRAPHY IN ORTHOPEDIC AND GENERAL SURGERY.

Dr. L. A. Weigel, of Rochester, made some remarks on this subject, illustrating them with a large number of lantern slides. He did not believe that the x-rays led to such fallacious results as many claimed, but the radiograph, to be of value, must be sufficiently good to show the structure of bone, and must be free from distortion. He had been using the x-rays for two years and a half, employing for one year a coil machine, and for the remainder of that time the static machine, which he greatly preferred. In not a single instance had he produced anything even approximating an x-ray burn. This, he was sure, was solely due to the avoidance of excessively long exposures, and to operating with the vacuum tube always at least eight inches from the subject, and usually at a distance of eighteen inches. At this distance an adult foot would require an exposure of about three minutes, and that of a child about forty seconds. For the hand one minute would suffice, while for the elbow and knee the exposure should be five or six minutes.

SUBCUTANEOUS TENOTOMY: BIOGRAPHICAL NOTES.

Dr. A. B. Judson, of New York, in this brief sketch, told of the early work of Stromeyer, W. J. Little and William Detmold.

REPORT OF THE COMMITTEE ON RECORDING LATERAL CURVATURE.

This report had been previously circulated among the members. The conclusion arrived at by the committee after much experimentation and study was, that although photography presented many defects it was the best method at present known for recording cases of lateral curvature.

Dr. McKenzie, in opening the discussion on the report, remarked that he had gradually discarded every other method in favor of "honest photography."

Dr. H. A. Wilson thought nothing else could compare with honest photography, not only because of the accuracy of the record, but because the personal equation was reduced to the minimum and the results admitted of ready interpretation.

Dr. N. M. Shaffer and Dr. Lovett both advocated photography, the latter adding that in recording muscular conditions the record should state under what conditions the standing record had been made.

Dr. Henry Ling Taylor, of New York, recommended that the standing and sitting height of the patient should be recorded under the same conditions at intervals of about three months. As to the trustworthiness of the results obtained by photography, every practical photographer knew well that without any intention to deceive many inaccuracies might be introduced.

Drs. Truslow, Dane and C. E. Young described simple and ready methods of making clinical records of these cases.

After a full discussion of the report, the Association decided that it was inexpedient at present to indorse any one method of making records of cases of lateral curvature.

PIGEON TOE.

Dr. W. Burton Hopkins, of Philadelphia, presented, by invitation, a paper on this subject, in which he described his ingenious swivel and spring device for correcting pigeon toe. The arrangement could be readily imbedded in the heel of the shoe, and as now made did not easily get out of order. Its action was to throw the foot out as the person walked.

Dr. L. W. Hubbard, of New York, said that most of his cases of pigeon toe had been in young children who did not wear high heels on their shoes, and that, therefore, there was no place for the attachment of this device.

Dr. Whitman thought these cases were almost always symptomatic of weak feet, and this gave clue to the rational treatment.

Dr. Ridlon remarked that most of his cases had been associated with equinovarus.

Dr. C. C. Foster, of Cambridge, had found that a cure could be effected by military drill, and appealing to personal vanity.

Dr. H. A. Wilson said that it had been demonstrated that the action of this device was the production of ankle-joint rotation.

SECOND DAY.

A STUDY OF POTT'S PARAPLEGIA AS AFFECTED BY CORRECTION OF THE SPINAL DEFORMITY.

Dr. Joel E. Goldthwait, of Boston, presented a communication on this subject, based on the observation of 11 cases, three of them being between four and six years old. In one of the adults, a girl of twenty, the paraplegia had been almost magically relieved in a few hours by the application of the jacket, but the paraplegia had returned when the jacket had become soft.

Dr. V. P. Gibney, of New York, referred to the case of a man upon whom Dr. Abbe had performed laminectomy, and had removed from the spinal canal a mass of granulomatous material, with the result that the cord had immediately begun to pulsate again, and its color had been improved. The man had steadily improved since the operation, and was able to sit up, although he had not yet essayed to walk.

Dr. Sherman was inclined to suspect that in the case in which there had been such sudden and wonderful improvement in the paralysis there was a hysterical element.

Dr. R. W. Lovett, of Boston, said that it was now quite generally admitted that the pressure symptoms were due to a lymphatic edema, and if this view were correct, it might explain the sudden change observed by Dr. Goldthwait.

Dr. Weigel cited a case illustrating the fact that although the external deformity and the paralysis were both slight, there might be such extensive destruction of the vertebræ as to render forcible correction an exceedingly hazardous procedure.

Dr. Goldthwait, in closing, said that in none of his cases had there been a permanent recession of the deformity, although all had been relieved. He did not believe the case exhibiting the sudden changes in the paralysis was hysterical; he had seen the same thing in several young men.

OSTEO-ARTHRITIS OF THE SPINE: SPONDYLITIS DEFORMANS.[3]

Dr. Goldthwait also presented this paper, which contained the histories of thirty-five cases. He stated that the disease belonged to adult life, but the etiology was obscure. The disease consisted in the formation of nodules on the edge of the articular cartilages, with a subsequent ossification of these nodes, and an extension of the process into the adjacent ligaments. It usually began anteriorly and to one side. As anchylosis proceeded, pain was complained of, and the thorax became rigid. The paralysis was always partially, but never completely, recovered from. The treatment, both medicinal and hygienic, should be stimulating. Hot baths, if of short duration, were useful, but if prolonged, they caused prostration and made the patient worse.

Dr. Ridlon described a case occurring in a woman of twenty-five in which, although the disease was quite advanced, he had succeeded in relieving her far beyond his expectations, by placing her under an anesthetic and subjecting the parts to violent manipulation. She now had in the lower portion of the spine about half the normal range of motion, and her chest expansion had returned almost to the normal for a woman.

Dr. C. L. Starr, of Toronto, reported an interesting case in which a man of forty years, although suffering from the disease in such an advanced stage that the ribs had become anchylosed, was able to pursue his occupation as a clarionet player in a band.

OPERATIVE TREATMENT OF CONGENITAL LUXATION OF THE HIP.

Dr. G. G. Davis, of Philadelphia, described his method of making a new acetabulum in these cases by the use of a wood-carver's gouge and an instrument known as a "rose burr."

A CASE OF DORSAL DISLOCATION OF THE HIP OCCURRING SPONTANEOUSLY DURING THE COURSE OF AN ACUTE OSTEOMYELITIS OF THE NECK AND SHAFT OF THE FEMUR.

Dr. W. H. Taylor, of Philadelphia, reported this case. The patient, a boy of thirteen, had been injured, apparently only slightly, while playing football, but after a short time he had begun to get worse instead of better. A few weeks later, examination under an anesthetic showed that, as a result of an extensive osteomyelitis, a true spontaneous dislocation had occurred. The exact time of the occurrence of the dislocation was not known. It was not impossible that if the distention of the capsule prior to this accident had been recognized and relieved, the dislocation might have been prevented.

REDUCTION OF CONGENITAL HIP DISLOCATION BY THE LORENZ METHOD.

Dr. W. E. Wirt, of Cleveland, reported two cases treated by the bloodless method. The first one had done well, but during his absence as naval surgeon during the late war, the child had fallen into the hands of a surgeon in Cincinnati who had insisted that the joint was perfect and that there was no further need for protective apparatus. In about six days the dislocation had returned. On his return home Dr. Wirt had operated again, with good result.

CONGENITAL DISLOCATION OF THE HIP.

Dr. Harry M. Sherman, of San Francisco, read a paper on this subject. He had done the bloody operation on nine hips. In three of these the luxation had relapsed after it had been supposed that there was permanent anchylosis; in two or three good motion had been secured; in the others the reductions had been stable, but anchylosis had occurred. He was inclined to attribute this anchylosis to granulation tissue springing up from the exposed cancellous tissue and encircling the head of the bone. He had subjected thirteen joints to treatment by the bloodless method of Lorenz, with varying results. In seven the luxation had returned. He preferred now to satisfy himself by incision and digital exploration that the head of the bone had been certainly placed in the acetabulum. He proposed to try to *punch* out an acetabulum in an upward and inward direction, thus securing sufficient depth without exposing so much cancellous tissue.

(To be continued.)

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[3] See page 128 of the Journal.

Recent Literature.

Hand-book of Materia Medica for Trained Nurses. Including Sections on Therapeutics and Toxicology and a Glossary of Terms, with Dose and Use of Each Drug. By John E. Goff, Ph.G., Apothecary in the Rhode Island Hospital, Providence. Philadelphia: P. Blakiston, Son & Co. 1898.

This is a compactly arranged and clearly written book of 235 pages. The writer's experience as a pharmacist has enabled him to give most useful rules for the handling of drugs and he has taken pains to emphasize those points which are most desirable for a nurse to know. The first section is devoted to officinal drugs and preparations, and the second section relates to the chemistry of the subject. Short chapters on therapeutics and toxicology and a glossary of 65 pages complete the volume. Questions at the close of each chapter help the reader to fix the most important facts.

The work is most satisfactory as far as it goes, but it seems unfortunate not to combine more therapeutics with the materia medica. To nurses as well as doctors materia medica of itself offers little attraction, because their interest lies in its application. A book, therefore, which combines the two subjects will appeal to them more strongly and in the limited time at their disposal will be more suited to their requirements.

Lessons in Hypnotism and the Use of Suggestion, based upon the Neuron Motility Hypothesis. By Leslie J. Meacham. Pp. ix; 192. Cincinnati, O.: The Bishop Publishing Co.

This is the second edition of this book. In the preface the author states that adverse criticisms of the earlier have been few and slight. Our suspicion is that this may have been due to a somewhat uncritical attitude on the part of reviewers, rather than to the excellence of the book. In the first place, the author unequivocally gives himself over to the neuron motility hypothesis, which he erroneously states was first presented by F. X. Dercum, of Philadelphia. Having accepted the theory the author finds many subtle problems answered. For example, he writes, p. 39, "The process movement theory, however, renders psychological problems that hitherto have seemed inexplainable as demonstrable as the simplest proposition of Euclid," and again, p. 45, "An act of perception, therefore, consists of changes in the relation of cortical neurons with one another, these changes corresponding to and depending upon certain physical impacts upon the sensory organs." Sleep is disposed of as "a condition of neuron plasticity."

Such statements as these do not lead us to look with over-much confidence on the theoretic chapters of the book. On its practical side the book may hardly be called original, but this portion is a vast improvement on the "Theory." There are many suggestions which, no doubt, would be of value in practice.

The book is embellished with a number of reproductions of photographs illustrative of methods of hypnosis. The author is evidently much interested and well informed on the subject of which he writes, and on the whole, brings to bear in its treatment a scientific spirit, if not scientific exactness.

THE BOSTON

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A CRITICISM OF THE PROPOSED CHANGE IN THE CURRICULUM OF THE HARVARD MEDICAL SCHOOL.

In our editorial communication of June 8th we spoke of the proposed new curriculum at the Harvard Medical School. The essential feature of the change is, in the first place, concentration on one main subject of study, and in the second place, as a natural consequence, a more logical sequence of the fundamental branches, such as anatomy, physiology and patholgy, thereby conducing to greater ease both of teaching and learning.

That such a plan, somewhat radical in character, should escape criticism, is neither likely nor desirable. As we previously urged, experience alone can ultimately determine the wisdom and effectiveness of the suggested scheme. In the meantime candid criticism and an expression of other points of view must be welcomed. Such a criticism has recently appeared in the *British Medical Journal* of July 22d, under the heading, "The New Medical Curriculum at Harvard." The writer expresses interest in the new departure, but on the whole regards it as a somewhat retrograde movement. After quoting the outlined plan, as detailed in our editorial already referred to, he continues as follows: "While we have no wish to prejudge the subject, it seems to us impossible to believe that anatomy and physiology can each be learnt in four months. The mere dissection of the body would, we should have thought, be impossible in the time, and anatomy cannot be learnt — at least as we learn it here — without much reading, nor remembered without repeated observation. We cannot but wonder how much anatomy the student, who has not thought of it for a year and a half previously, will command when he goes into the wards. We have often urged that for the proper study of anatomy and physiology it is desirable that nothing else should be studied during the first year and a half, and here is a proposal that the whole of these vast subjects should be finished in two periods of four months each. There will be no means of testing or comparing the results, for the examinations must of necessity adapt themselves to the new level, and the abiding knowledge to be employed in practice, which is the thing of real importance, can hardly be tested at all. Even though a student be able to pass fairly at the end of January, when it appears the examination in anatomy will be held, it is most unlikely that learning so hastily crammed can be properly assimilated, or form a sound and permanent acquirement."

Several of these statements are worthy of comment. To begin with, we quite agree with the *British Medical Journal* that anatomy and physiology cannot be learned in four months, or, indeed, in as many years. It is, in fact, a mistake to speak of such progressive sciences as ever being learned; our knowledge of them, notably of physiology, must always be relative. The argument of the advocates of the new scheme simply is that the essential rudiments of these sciences may be better taught and learned in four months of concentrated effort than in a year or more of unconcentrated study, and not only that, but that actually more hours may be gained by the new method than was possible as the subjects were before taught, at least at the Harvard School. Just why a student should be more likely to forget his anatomy or physiology, conscientiously studied for four months, than if studied for a year or more, in a less thorough manner, it is hard to see. The value of such study must lie rather in methods used and in the trend given the student's mind than in a mere collection of facts, to which unfortunately such sciences are too often degraded. With the enormous growth of detail, which the last few years has witnessed, it is evident that the elementary student should only be called upon to master principles. These he will always need, and facts, merely as facts, may well be relegated to a subordinate place in his mind. We cannot, therefore, regard the argument of our contemporary as in any way valid, when it wonders "how much anatomy the student, who has not thought of it for a year and a half previously, will command when he goes into the wards." If he has been properly taught, the student should always be able to command what he needs at a given time, just as the practitioner does, and concentration of attention can in no way diminish this possibility, so far as we can see. Nor do we think that "learning so hastily crammed cannot be properly assimilated." Again, if proper methods of study are inculcated, the facts will take care of themselves.

The error of all such arguments seems to us to lie in the failure to appreciate that the essence of preliminary medical education, as of all other education, lies in its capacity to train the mind to future accomplishment, rather than to make it merely a storehouse of facts. As Charles Sedgewick Minot puts it, "We must teach how to learn." It is probable that the new plan of concentration and gradation will tend to bring this end to pass; if so, it will have accomplished its main purpose. As we have before stated, the detailed working-out of the scheme must be left to experience. If it ultimately fails, we feel confident it will not be for the reasons adduced by the *British Medical Journal*.

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SANITATION IN PORTO RICO.

One of the most gratifying results of the American occupation of Cuba and Porto Rico has certainly been the activity of the medical branch of the service. That such activity was most urgently needed has been sufficiently apparent from the moment the real conditions were brought into public view. That it has been marvellously efficacious has been equally apparent, as the one instance of General Wood's successful encounter with yellow fever at Santiago amply demonstrates.

Most excellent work has also been done at Porto Rico toward the establishment of definite sanitary regulations. We are in receipt of a circular dated at San Juan, July 18th, which sets forth in detail the duties of the Superior Board of Health for the island. The functions of the Board are to be not only of a supervising character as regards general matters of health, but an especial attempt is to be made to study vital statistics, investigate causes of disease, including those of domestic animals, to disseminate information among the people, and to institute sanitary inspections of public institutions and places. The Board will also assume responsibility for regulations governing the practice of medicine, surgery, pharmacy and allied branches, and investigate the violation of laws governing the purity of foods, drinks, drugs and medicines. The document leaves nothing unconsidered in relation to public hygiene and if it can be carried out in detail will undoubtedly do much toward establishing a high degree of general health. Such energetic work is worthy of the highest praise, and shows what may be done under proper management.

Chief-Surgeon John Van R. Hoff, of the Department of Porto Rico, writes: "We commenced our sanitary part of the white man's burden by vaccinating 180,000 of the inhabitants and manufacturing the virus to do it."

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MEDICAL NOTES.

Lane Medical Lectures. — Michael Foster, of London, will deliver the next course at Cooper Medical College, San Francisco, in 1900.

A Fund for Bacteriological Research. — Efforts are being made in France to secure by public subscription a fund for bacteriological research; 78,500 francs has already been subscribed.

Appointment of Dr. Thomas S. K. Morton. — Dr. Thomas S. K. Morton has been elected professor of the principles and practice of surgery in the Woman's Medical College of Pennsylvania, in succession to Dr John B. Roberts, resigned.

A Statue of Baron Larrey. — A bronze statue of Baron Larrey, the celebrated surgeon-in-chief of the army of Napoleon the First, was dedicated on June 8th at the Military Hospital at Val-de-Grace.

Compulsory Vaccination. — The Japanese Government has decreed compulsory vaccination throughout the kingdom. We assume that the local Pooh-Bah will take care of the Japanese conscientious objector. — *Medical Press and Circular.*

Osteopathy Declared Unlawful in Pennsylvania. — We learn from the *Medical Record* that the Medical Council of the State of Pennsylvania decided on May 24th, that the practice of osteopathy within the State is illegal, and that those therein engaged are amenable to the law.

The Spread of Contagious Diseases. — We learn from the *Medical Record* that the Pennsylvania State Board of Health has adopted a regulation requiring teachers in school whose boards act also as boards of health to report immediately to the secretaries of such boards or to the agents designated by them all cases of contagious diseases occurring in their respective schools.

What the Human Body Will Yield. — A French statistician has calculated that the average human body contains enough fat to produce 13 pounds of candles; enough carbon to make 65 gross of "lead" pencils; and sufficient phosphorus to tip 820,000 matches. Perhaps he will complete his observations by calculating how many bone-handled knives one body would furnish, how many watch-springs could be made from the iron in the blood, and how much mortar could be made from the lime contained in the tissues. When he has done this we will suggest sundry other as yet unsolved problems. — *Medical Press and Circular.*

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, August 9, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 53, scarlet fever 16, measles 14, typhoid fever 17, small pox 1.

Lead-Poisoning from Driven-Well Water. — The State Board of Health has recently held a public hearing at Lowell, Mass., regarding lead poisoning from driven-well water. It appears from the report that in every one of seventy-four samples of water examined a dangerous amount of lead was found. Physicians in Lowell have recently reported forty cases of poisoning of varying degrees of severity coming under their observation. The removal of lead pipes in houses through which water is obtained for drinking or cooking purposes was urged. It was further stated that a filter, similar to one now in use in Lawrence, might be built as a protection to public health.

Two Centenarians. — Mrs. Phœbe W. Crabbee, of Norwalk, Conn., has recently celebrated her one hundred and second birthday. She was the second of a family of seven children, only one of whom has died under eighty, and then through an accident. Mrs. Sally Batchelder, of Peabody, celebrated her one hundred and fifth birthday on August 8th. She is reported to have recovered from a fracture of the lower extremity which she sustained in her one hundredth year.

Sanitation of Picnic Grounds. — The State Board of Health is about to undertake an examination of picnic grounds and certain summer resorts relative to their sanitary condition. Special notice will be taken of water supply at different places where persons in large numbers habitually congregate, and sewerage systems will also receive careful consideration. It has been observed that typhoid fever is very prevalent in September and October, a fact which it is thought may be attributed directly or indirectly to the lack of proper sanitary arrangements in crowded summer resorts.

A Remarkable Record. — Helen Keller, who is handicapped by the loss of the senses of sight, hearing and the consequent inability to speak, has passed her examinations for entrance to Radcliffe College. This is, no doubt, the most remarkable example on record of the cultivation of the mind almost entirely through the sense of touch.

NEW YORK.

Proposed Legislation Regarding Christian Science. — It is announced that the President of the Legal and Medical Relief Society, Mr. Sutro, has appointed the following committee (to which his own name has been added) in the matter of proposed legislation relating to Christian Science: S. B. Livingston, President of the Society of Medical Jurisprudence; Walter S. Logan, President of the New York State Bar Association; Alderman Howard P. Okie; Reynold W. Wilcox, M.D., President of St. Mark's Hospital; George F. Shrady, M.D.; Edward Lauterbach; John Sabine Smith; Thaddeus D. Kenneson, and A. Ernest Gallant, M.D. They will draft a bill for presentation in the Legislature which it is hoped will be of practical service in placing Christian Science healers and others undertaking to cure disease without visible agencies under the same legal restraints as ordinary practitioners of medicine.

Ordinance for Regulation of Surface Cars. — On Sunday, July 30th, two persons were killed by the trolley cars in Brooklyn and one in the Borough of the Bronx. This swells the list of fatalities from electric cars in the former borough to 248, and in view of the accidents that are constantly occurring in all parts of the city, an ordinance has been introduced in the Municipal Council providing for the regulation of the speed of surface cars and the compelling of such cars to stop on signal. Another section of the ordinance provides for the appointment of a commission, consisting of one electrician, one physician and one experienced employee of a surface railway, to act as a board of examiners, from whom it shall be required that all applicants for positions on surface lines must receive certificates, both as to their physical condition and "professional" ability, in order to render them eligible for a license.

A Case of Ptomaine Poisoning. — The Hon. Carl Schurz recently had a very narrow escape from death by ptomaine poisoning, in which the attack closely resembled that which proved fatal in the case of Anton Seidl, the lamented musical authority. It is believed to have been due to some fish which he ate during a trip to New York from his summer home at Lake George. By great good fortune Dr. A. Jacobi happened to be with him at the time, and the prompt treatment which he instituted was no doubt the means of saving the distinguished patient's life.

Forestry Department, Cornell University.— Cornell University, which boasts the distinction of being the only institution of learning in the country which has a forestry department, having secured 30,000 acres of woodland in the Adirondack Mountains, near Axton, N. Y., Professors Gifford and Roth have recently been visiting the tract, inspecting the property and directing the work of the surveyors. The students in forestry, it is announced, will receive instruction in the theory of the subject from October until April, and from that time until commencement study its practical side in the Adirondacks.

Typhoid Fever at Flushing. — An examination of the drinking water supplied to the village of Flushing, in which there has been an outbreak of typhoid fever, has shown that the water is probably not responsible for the disease, and it is now suspected that the typhoid is due to polluted milk. One of the local physicians, it is said, has made the discovery that some of the cases in the hospital and ten outside belonged to families which were supplied by one milkman, and the facts have been reported to the Board of Health for investigation.

A Possible Epidemic of Poliomyelitis. — An epidemic of very unusual character has been in progress for some time among the young children in Poughkeepsie. The disease, which at the outset is characterized by considerable febrile action, is apparently infantile spinal paralysis, and if it be true, as has been stated, that in no instance has there been more than one case in a single family, its infectiousness would seem to be somewhat problematical. The physicians of the place have been naturally a good deal puzzled by the outbreak, and, on the invitation of Dr. D. B. Sheedy, Dr. Henry D. Chapin, professor of children's diseases in the New York Post Graduate Medical School, has been making an investigation of the disease. The fact that no deaths have been reported, as well as the general character of the symptoms noted, would go to show that the trouble is certainly not cerebro-spinal fever. The newspapers report that there have been as many as 150 cases, though this is probably a considerable exaggeration, and it is now stated that the disease has already made its appearance in New York. Whether this is really the case appears to be uncertain, as infantile paralysis is not classed among the affections calling for a report to the Bureau of Contagious Diseases, but Dr. Tracy, the Registrar of Records of the Health Department, is authority for the statement that no epidemic of this disease has ever been reported in this city.

A Bequest to a School for Feeble-Minded. — By the will of the late Benjamin D. Maxham, of Vineland, N. J., a legacy of $100,000, to be paid on the death of his wife, is left to the New Jersey Training School for Feeble-Minded Children, of which he was one of the founders and directors.

A Statement by Health Officer Doty on Yellow Fever. — On the occasion of the discharge from the hospital on Swinburne Island of Oscar F. Lackey, the first patient treated with his new yellow-fever antitoxin, Health Officer Doty has made a public statement in regard to the case. After stating that three subcutaneous injections of the serum, two of twenty-five cubic centimetres and one of fifty centimetres, were made, and that no other treatment was employed, he goes on to say: "From a scientific point of view, one case cannot prove the value or worthlessness of the serum. Therefore, I regard it as premature to give an opinion on this subject until a sufficient number of cases has been similarly treated, and enough evidence presented to justify it. . . . I desire to repeat the statement already made, that this department claims no discovery, either as to the isolation of the specific organism or in the production of the serum. The object of the investigation at the quarantine laboratory, which has been carried on for the last two years, is to test the value of the claim made by Professor Sanarelli, of Montevideo, that he has discovered the germ of yellow fever and has prevented and cured the disease in the human being by the use of the serum. The importance of this subject, particularly to the people of the United States, cannot be overestimated."

Miscellany.

THE CARE OF LEPROSY IN ECUADOR.

In a recent report by the United States Minister to Ecuador considerable space is given to the subject of leprosy as existing in that republic, and a monograph on this disease by Dr. Rivadeinera, in charge of the Quito Leper Asylum, is also transmitted.

According to Dr. Rivadeinera, all the lepers of the republic are segregated in the leper hospitals at Quito and Cuenca. In the former, a city of 80,000 inhabitants, there are 37 male and 40 female lepers; in the latter, a town of 30,000 inhabitants, there are 30 males and 35 females afflicted with leprosy. The climatic and local conditions of Quito do not appear to be as favorable for the spread of leprosy as in Cuenca, most of the lepers treated in the former place being brought from Ambato. The leper asylum at Quito is supported by public charity and is only one branch of a general eleemosynary institution caring for paupers, orphans, inebriates, the insane, and other defective classes. Dr. Rivadienera has been connected with the leper hospital since 1886. He finds that the tuberculous form is much the most frequent in Ecuador, and states that at present no case of mutilating leprosy exists in that country. He observes that the disease usually develops about puberty, but states positively that some cases are congenital. He believes that heredity and contagion are the chief causes in the propagation of leprosy, and says that he has seen many cases which seemingly developed from contagion and inoculation. Dr. Rivadeinera is convinced that syphilis and leprosy are antagonistic and is positive that the latter disease can be cured if taken in the early stages. He states that in the thirteen years he has been treating leprosy in Quito fourteen patients have been discharged from the asylum as cured, "so pronounced by a board of physicians," and that two more patients are nearly ready to be discharged as cured. His treatment, he says, varies with the length of time the disease has existed, the form it has assumed and, above all, with its complications. Among the remedies successfully employed he mentions chaulmoogra, resorcin, carbolic acid and arsenical compounds, usually combined with vegetable tonics.

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PLAGUE IN MONKEYS AND SQUIRRELS.

WE learn through the *Journal of Tropical Medicine* that interesting and important investigations have been made by Drs. Alice M. Cothoru and C. J. R. Milne regarding the susceptibility of certain of the lower animals to plague in India. It had been observed that several monkeys had dropped dead from trees, two of which were carefully examined.

In the first there was a bubo the size of a large cherry in the left groin, which on dissection consisted of a group of four glands, hard and purplish in color, with a good deal of edemà of the surrounding tissue. From this a smear preparation was made, which showed an enormous number of organisms resembling the plague bacillus; inoculation of a tube of agar showed within twenty-four hours plague-like colonies. The spleen was much enlarged, and microscopical and culture preparations were made with the same result as from the bubo.

In the second monkey there was a small bubo about the size of a bean, with some fulness in the right axilla. The spleen resembled that in the first monkey, and gave both a good smear preparation and a growth of plague-like colonies within twenty-four hours.

In both monkeys the general appearance was similar to that observed in human subjects dead from plague. There were numerous subserous and submucous ecchymoses and the blood was dark and unduly fluid.

On December 17th the body of a gray striped squirrel was examined. There was no bubo, but the spleen was nearly three inches long, about one inch wide and three-quarters of an inch deep. A smear preparation from it showed typical bacilli in large quantities.

The importance of the fact that animals such as monkeys and squirrels are also susceptible to natural plague infection, in addition to rats, cannot be overestimated, especially in their relation to the carrying of infection from one district village to another. These squirrels and monkeys are so common in India that they might well be considered as pests.

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THE HANDWRITING OF DOCTORS.

AMONG the many things that Napoleon has to answer for is the popular notion that an illegible handwriting is a mark of intellectual superiority. How far this may serve to explain the fortuitous concourse of scratches, dashes and blots which is too often handed to anxious sufferers as a prescription by medical oracles we are not prepared to say, but the fact is notorious that the writing of many doctors is of such a character that, like paleographic scripts, it can be read only by adepts. We have seen prescriptions which could be interpreted only by those who had undergone a special initiation. This obscurity may, of course, have its advantages from certain points of view, but there is always the risk that the adept may not be at hand in some critical emergency, or that the expert himself being human may sometimes be at fault. A famous counsel, learned in law, it is said, had three handwritings: one which he and his clerk could read, another which only his clerk could read, and a third which neither of them could read. If neither the doctor himself nor the chemist can read the prescription, what is to become of the patient? Doubtless he gets something, but is it what was intended? Nor is it only in prescriptions that the doctor's bad handwriting causes trouble. The Connecticut State Board of Health has lately felt itself obliged to call attention to "the inaccuracies in the tabulation of death certificates which result from the faulty handwriting of the physicians who fill them out." These certificates are said to present astonishing additions to the nomenclature of diseases, such as are not to be found in any recognized system of nosology. As specimens may be given such causes of death as "cardius hypohophy," meaning probably cardiac hypertrophy, "corrhasis of liver," for cirrhosis, "utrim fibride," for uterine fibroid, "lineape," for syncope, "neaesini," for uremia, "gortuitis," for gastritis. Clearly it would be to the benefit of mankind if doctors took a little more trouble to write plainly. — *British Medical Journal.*

METEOROLOGICAL RECORD

For the week ending July 29th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A.M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...23	30.21	63	66	60	89	78	84	E.	E.	9	10	O.	O.	
M..24	30.25	64	67	60	72	81	76	E.	E.	10	5	C.	C.	.13
T..25	30.13	62	66	58	84	95	90	E.	E.	11	4	O.	O.	.99
W..26	29.81	74	82	66	95	74	81	S.W.	W.	16	3	O.	C.	.22
T..27	29.77	80	92	69	60	81	70	W.	W.	8	13	C.	C.	
F..28	29.96	71	78	64	60	64	62	N.	S.W.	12	9	C.	C.	
S...29	29.97	74	84	61	65	71	68	N.W.	S.	2	13	C.	O.	
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* O., cloudy; C., clear; F., fair; O., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 29, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1444	702	23.38	9.80	18.48	.70	2.45
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	226	107	23.32	11.44	16.28	1.76	3.08
Baltimore	506,389	226	112	33.33	7.92	29.48	.88	—
Cincinnati	405,000	93	—	14.01	5.40	11.88	1.08	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	122	64	39.36	7.38	32.80	4.92	—
Washington	277,000	105	47	19.20	8.64	10.56	2.88	3.94
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	69	37	52.20	15.95	47.85	1 45	—
Nashville	87,754	35	13	25.74	5.72	11.44	5.72	—
Charleston	65,165	42	16	16.31	–	23.30	2.33	—
Worcester	108,240	24	16	45.76	—	41.60	4.16	—
Fall River	95,919	60	45	48.14	6.64	44.92	1.66	—
Cambridge	89,724	37	24	40.50	5.40	32.40	—	2.70
Lowell	88,641	60	41	39.94	3.32	36.63	1.66	—
Lynn	66,703	19	7	26.30	10.52	—	5.26	—
New Bedford	66,340	15	12	13.33	6.66	13.33	—	—
Somerville	66,101	13	5	7.69	7.69	—	—	—
Lawrence	57,263	27	20	48.10	3.70	44.40	—	3.70
Springfield	56,501	18	4	22.22	16.66	11.11	—	—
Holyoke	43,424	15	9	46.66	6.66	46.66	—	—
Brockton	37,278	10	5	40.00	—	30.00	—	—
Salem	36,883	24	16	54.08	4.16	54.08	—	—
Malden	34,613	14	7	50 00	—	50.00	—	—
Chelsea	33,468	13	4	7.69	7.69	–	—	—
Haverhill	32,022	13	4	23.07	15.38	23.07	—	—
Gloucester	30,589	8	4	—	—	—	—	—
Newton	29,716	11	—	36.36	18.18	27.27	9.09	—
Fitchburg	29,438	5	2	40.00	--	40.00	—	—
Taunton	28,167	20	11	45.00	—	45.00	—	—
Everett	25,338	9	5	11.11	—	11.11	—	—
Quincy	23,549	19	7	52.60	5.26	31.56	5.26	5.26
Pittsfield	22,643	7	2	70.40	—	28.56	28.56	14.28
Waltham	22,296	8	2	12.50	12.50	12.50	—	—
North Adams	20,971	14	9	35.70	—	28.56	—	—
Chicopee	17,842	10	5	30.00	—	30.00	—	—
Medford	16,511	7	4	28.56	—	28 56	—	—
Newburyport	14,915	6	2	—	—	—	—	—
Melrose	14,032	1	—	—	—	—	—	—

Deaths reported 2,872; under five years of age 1,283; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough erysipelas and fevers) 1,789, consumption 248, acute lung diseases 248, diarrheal diseases 639, diphtheria and croup 47, typhoid fever 40, cerebro-spinal meningitis 23, whooping-cough 18, measles 11, scarlet fever 6, erysipelas 3.

From cerebro-spinal meningitis New York 9, Quincy 3, Boston and Washington 2 each, Cincinnati, Nashville, Lynn, Springfield, Brockton, Chelsea and North Adams 1 each. From whooping-cough New York 2, Pittsburg and Providence 2 each, Boston and Cambridge 1 each. From measles New York 7, Boston, Fall River, Cambridge, Lynn, 1 each. From scarlet fever New York 4, Boston and Baltimore 1 each. From erysipelas New York 3.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending July 22d, the death-rate was 18.4. Deaths reported 4,028; acute diseases of the respiratory organs (London) 149, diarrhea 466, measles 126 diphtheria 83, whooping-cough 56, scarlet fever 37, fever 30.

The death-rates ranged from 7.6 in Brighton to 29.4 in Salford; Birmingham 21.1, Bradford 16.1, Cardiff 14 0, Derby 12.7, Gateshead 21.0, Huddersfield 10.6, Hull 13.6, Leeds 20.4, Liverpool 26.6, London 18.2, Manchester 22.0, Newcastle-on-Tyne 16.2, Nottingham 19.2, Portsmouth 16.9, Sheffield 26.7, Swansea 14.1, West Ham 14.6, Wolverhampton 11.7.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 5, 1899.

C. A. Crawford, assistant surgeon, detached from the "Wabash" and ordered to the "Massachusetts."

E. J. Grow, assistant surgeon, detached from the "Massachusetts" and ordered to the "New Orleans" immediately.

M. S. Elliott, assistant surgeon, detached from the Marine Examining Board August 2d, and ordered to temporary duty at the Marine Recruiting Rendezvous, New York, during leave of Passed Assistant Surgeon E. S. Bogert, upon completion of this duty, directed to wait orders.

C. G. Herndon, surgeon, ordered to the Museum of Hygiene for temporary duty.

J. C. Rosenbleuth, passed assistant surgeon, detached from the "Vermont" and ordered to the "Nashville."

F. L. Pleadwell, assistant surgeon, detached from the "Nashville" and ordered to the Bureau of Medicine and Surgery.

SOCIETY NOTICE.

American Association of Obstetrics and Gynecologists. – The American Association of Obstetricians and Gynecologists will hold its twelfth annual meeting in the assembly room of the Denison House, Indianapolis, Ind., Tuesday, Wednesday and Thursday, September 19, 20 and 21, 1899.

The Association will meet in executive session with closed doors on Tuesday, September 19th, at 9.30 a. m., for the election of new Fellows. The open session for the reading of papers will begin at 10 o'clock. Recess for luncheon at 1 o'clock p. m. Afternoon session at 3 o'clock; recess at 5.30 o'clock; evening session at 7.30 o'clock.

The morning session will begin Wednesday at 10 o'clock for the reading of scientific papers. Recess at 1 o'clock. Afternoon session at 3 o'clock. Adjournment at 6 o'clock.

At 6.30 p. m., Wednesday, the executive session will convene for the election of officers, and for such other business as may come before it under the rules.

The morning session will begin Thursday at 9.30 o'clock to continue until 1 o'clock p. m., when recess will be taken for luncheon. The afternoon session will be called at 3 o'clock and at 5 o'clock the closing ceremonies will be held. A full attendance is especially requested at the final session.

Edward J. Ill, *President*,
Wm. W. Potter, *Secretary*.

RECENT DEATHS.

John H. Gilbert, M.D., one of the most prominent and successful physicians of Quincy, died at his home in Quincy on August 3d. He was born in Atkinson, N. H., sixty-six years ago, and was a graduate of Dartmouth and Tremont Medical Colleges. He began practice in Weymouth, where he remained ten years, when he came to Quincy. He was prominently connected with organizing the Quincy Hospital and the Board of Health In 1892 he was appointed medical examiner for the Quincy district, which position he held up to the time of his death. He leaves a widow and one son.

Francis C. Greene, M.D., a prominent physician of Hampshire County, died August 3d, at Easthampton. Dr. Greene was born in New Haven, Conn, September 2, 1827. He received his education at New Haven and his professional training at Yale. He settled at first in Holyoke. In 1853 or 1854 he removed to Easthampton and remained there till the war broke out. He was a surgeon in the U. S. Army during the war. After the war he settled for a time in New York and afterward went to Westfield. In 1868 he returned to Easthampton, and built up a successful practice. He was also prominent in local public affairs.

BOOKS AND PAMPHLETS RECEIVED.

Carcinoma of the Œsophagus with Fatal Hæmorrhage from the Subclavian Artery. By F. G. Finlay, M.D., and D. P. Anderson, M.D. Reprint. 1899.

Upon the Existence of a Minute Micro-organism Associated with Cases of Progressive Portal Cirrhosis. By J. G. Adami, M.A., M.D., F.R.S E., Montreal.

Vital Science, based upon Life's Great Law: The Analogue of Gravitation, Agnosticism Refuted. By Robert Walter, M.D. Philadelphia: J. B. Lippincott Co. 1899.

The Medical Treatment of Typhoid Fever. The Symptomatology of Tumors Involving the Hypophysis Cerebri. By James Stewart, M.D., Montreal. Reprints. 1899.

A Contribution to the Study of Bright's Disease, with Special Reference to the Etiological Relationship of the Bacillus Coli. By Albert G. Nicholls, M.A., M.D., Montreal. Reprint. 1899.

The Surgical Treatment of Typhoid Fever. Tuberculous Disease of the Spine, Commonly Called Caries of the Spine, Angular Curvature or Pott's Disease. By G. E. Armstrong, M.D., Montreal. Reprint. 1899.

Medical and Surgical Reports of the Boston City Hospital. Tenth Series. Edited by Herbert L. Burrell, M.D., W. T. Councilman, M.D., and Charles F. Withington, M.D. Boston: Published by the Trustees. 1899.

A Text-book of Anatomy. By American authors. Edited by Frederic Henry Gerrish, M.D., Professor of Anatomy in the Medical School of Maine, Bowdoin College. Illustrated with 950 engravings in black and colors. Philadelphia and New York: Lea Brothers & Co. 1899.

Address.

ADDRESS IN SURGERY.[1]

BY ALEXANDER OGSTON, M.D.,
Surgeon-in-Ordinary to Her Majesty the Queen in Scotland; Regius Professor of Surgery, University of Aberdeen.

THE MEDICAL SERVICES OF THE ARMY AND NAVY.

In presence of an assemblage of so many representatives of the medical science of the British Empire, I have much pleasure in gratefully acknowledging the honor of being called upon to deliver the "Address in Surgery." It is a task I enter upon with a sense of responsibility, and a fear lest I should fail to do justice to the duty entrusted to me by the Council of the British Medical Association. But I take courage from the belief that you will be disposed to form a lenient judgment of any endeavor to contribute to the usefulness of the annual meeting of our Association, and because I think that the theme I have chosen for the "Address in Surgery" on this occasion is one in harmony with the high aims of our science, since it has for its design to promote the great objects for which our profession exists, those, namely, of saving the lives and diminishing the sufferings of our fellow-men.

A NEW DAY IN SURGERY.

At a time like this one cannot help being strongly impressed by the feeling that the surgical profession in our day has had much given to it, and that from it much will be required. We live in an era that can claim to be one of most exceptional, probably unique, interest. We have witnessed in it the most marvellous and rapid advances the world has ever experienced in the powers of mastering and warding off disease. We have passed through many gloomy years, in which we worked our life's work blindly and in the dark, with dread fastening on the heart as surely as the hand grasped the knife, for ever trembling before the horrors of surgical pestilence; and now we have been privileged to see the dawn of a new day when septic disease is being robbed of its terrors by the discoveries of Lister, whose great gifts to humanity, which coming generations will hereafter delight to recall, recognizing that whatever we owe to the great surgeons of the past has been but little in comparison with the benefits he has conferred on us, and through us on all mankind. And we may be sure that future ages will be very critical in their judgment of us, the present race of surgeons, and demand to know what use we made of our unparalleled opportunities, and whether we went astray amidst all the light that was given us.

THE EFFECT OF LISTER'S DISCOVERIES.

The importance of the period in which we live it would be difficult to exaggerate. For the first time in all the centuries that have flown our profession has changed from a craft into a science, a result that, though many have contributed to it, we owe mainly to Lister. Every progress made in the years of my own professional life seems to dwarf before his great discoveries, and imagination fails to grasp the limits and possibilities of the gigantic revolution which he commenced, or the unspeakable benefits it has conferred and may yet confer upon the world. The achievements of the surgeons before his day have now for the first time become fruitful and certain. Fresh fields of relieving and curing disease have been opened up at every point of our horizon, and in all the busy centres of the earth is springing up a new race of surgeons, who effect as part of their everyday work marvels of cure that even thirty years ago, had anyone ventured to forecast them, would have been looked upon as the dreams of a visionary.

THE UNSATISFACTORY CONDITION OF THE SERVICES.

While in many respects we have good reason to praise the age we live in and the way in which it has availed itself of its advantages, no one fully acquainted with the state of surgery in our land can fail to be impressed by the fact that in some quarters the changes and modifications necessitated by the progress of science are even yet meeting with obstacles that ought not to exist, and that some of our medical and surgical brethren are still hampered by systems and restrictions which must be swept away, if we are to ensure that none of our fellow-countrymen shall be denied those benefits which are now within the reach of the humblest and the poorest. I venture to believe that in the city of Portsmouth it will not be out of place — perhaps even specially appropriate, to advert to the condition of our Army and Navy Medical Services. These, since the surgical world was stirred to its depths thirty years ago by the doctrines of Lister, have been, I fear, gradually falling into a condition that cannot fail to evoke much anxiety regarding their present and future. I believe the causes of this can be more accurately pointed out than has heretofore been possible; I feel sure that, by endeavoring to do so here and now, more good is likely to be attained than would result from a similar inquiry on any less public or representative occasion; and it appears to me that the present time is suitable beyond any in the past half-century for drawing attention to the reforms that may be necessary to ensure that when the supreme moment arrives the medical departments of these services will be found adequately prepared to undertake the duties they will be called upon to discharge. We possess at the present moment an enlightened Minister at the head of the War Office, to whom we owe it that many desirable reforms have already been introduced into the Army Medical Service. We have also every reason to believe that the trend of public opinion is favorable to such further improvements as may be required in both army and navy. Recent events, too, have demonstrated that we may be unexpectedly called upon to engage with both army and navy in European or even world-wide wars, such as would put their efficiency to the severest possible test.

It is moderate and reasonable to expect that the medical departments of the army and navy shall be in a condition commanding the respect and approval of the medical profession and the public; that their officers shall be at least as favorably placed in regard to their work as their civil brethren; and that both ashore and afloat they shall be able efficiently to perform their functions in time of peace, and fully prepared for the eventualities of war. Yet no observant member of the profession, particularly if connected with one of the medical schools whose graduates used to furnish many candidates to the services of the army and navy can have failed to observe how changed is the estimation in which they have come to be held during the last three decades. The most talented graduates have ceased to aspire to enter them, and it has by degrees come to pass that few indeed, and these as a rule of inferior qualifications, can be induced by any means to present themselves at their entrance examinations. Such a one will have noted that those medical officers who possess a few years' experience of the services, however much loyalty seals the lips of most of them and influences all, show themselves disappointed and discouraged with the professional life they have to lead, admit they have made a mistake in entering them, and would gladly, were it possible, sacrifice the years they have spent in them and quit them entirely, even for some comparatively unpromising post in civil life. He must have perceived that many of the most intelligent officers who remain in them are pervaded by a conviction that their abilities have been thrown away and their lives wasted, and that the services are not what they ought to be. He will have followed the continual endeavors made through all these years to remedy their growing want of attraction for men of ability, and the failure of these endeavors one after another. He will have learnt that year by year the medical services, especially that of the Queen's army, have become more attenuated and undermanned, so that an undue amount of foreign service, at the cost of health, is entailed on those who enter; and that hence it has become necessary to supplement the deficiences at home by employing civil members of the profession, of a class whose work unfits them for forming officers of the stamp needed in the event of war, even if their other engagements rendered it probable they would consent to be so employed. He may, perhaps, have been told that in the last year or two the post of medical officer in the army has been going a-begging, and has been hawked for presentation about the various schools and universities where suitable men might be supposed to exist. And, lastly, he may see how, when lapse of years has earned them a moderate pension, many of the medical officers, in the prime of their abilities and best working period of their lives, hasten to quit the services; but find themselves, save in the instance of a few gifted men, unfitted for any professional activity, so hopelessly have they fallen behind the acquirements of their civil compeers.

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[1] Read at the annual meeting of the British Medical Association at Portsmouth, August, 1899. — Abstract from advanced proof-sheets sent by the courtesy of the editor of the British Medical Journal.

THE ARMY MEDICAL SERVICE.

It has sometimes been asserted that, in the opinion of foreign judges, our Army Medical Service is in a state of efficiency enabling it to discharge its duties in a way superior to anything that could be achieved by other countries. One must, however, discriminate. Oft-repeated experience over the very same ground has indeed taught us to conduct, in some respects, the medical part of expeditions in the jungles and swamps of West Africa, the deserts of the Nile, or the ravines of the Himalayas, in a way that probably no other power could excel or even equal. Our enemies there are poorly armed, and our casualties few. But it dare not be inferred from this that we are in a condition to deal with a war against a great power, with arms and organization at least equal to our own, in which large numbers of wounded — thousands instead of tens — must fall to be treated. That would be a most erroneous conclusion, and would not be the general verdict of either the civil profession or the ranks of the services themselves. And such of us as possess friends among foreign military surgeons, men of large experience in actual warfare, do not hear from them any such expressions of approval as would warrant very sanguine inferences. It is absolutely conclusive on this subject to recall that last year, when a deputation from the British Medical Association was received by the Secretary of State for War, its members, most of them leading authorities from our universities and medical schools, expressed themselves deliberately to the contrary effect, using expressions that ought to be well weighed as coming from those whose position enables them to form an unerring judgment. An eminent president of this Association there gave utterance to the following ominous opinion: "If there were to come a time of war it is to be dreaded that the horrors which occurred during the Crimea may be repeated." All others present spoke to a similar effect, and the Secretary of State admitted that, owing to the condition of the Army Medical Department, "only comparatively inferior men present themselves . . . the best men turning away from the Army Medical Staff . . . a very grave condition of things."

With regard to the duties in time of peace, it may be contended that these, being chiefly to maintain our army and navy in good health, are efficiently performed in the services; though I need not repeat that even these are at present carried out in the army to some extent by the aid of civil practitioners, whose other occupations unfit them for being effective and satisfactory army medical officers. But it must not be forgotten that this is not all the country expects. The duties of the Royal Army Medical Corps and Naval Medical Service involve preparation for war. This is the chief end of all departments of the army and navy; and, unless they fulfil that end, no matter how creditable they may be in other respects, they are but a pretence of what they ought to be. In this it must, I think, be admitted that they are in a condition leaving much to be desired. Attendance on minor ailments, trifling complaints, and the few serious diseases and injuries occurring among bodies of men in the prime of their age and health, selected for strength and soundness, and the other routine duties, which together constitute the whole ordinary work of the immense majority of the medical officers serving in our forces, form so great a contrast to much that would be expected of them in an active campaign against European troops that comparison between them is hardly possible. They afford the army and navy surgeon, it is no exaggeration to say, scarcely any chance of acquiring the knowledge and skill that would be demanded of him in war.

No surgeon can now, as in former days, rise suddenly out of the ranks of those destitute of special training, however eminent his natural abilities may be. He who is skilled in exercising his profession becomes so by many years of special training. No man who is but theoretically acquainted — be it in ever so perfect a fashion — with the mere doctrines of antiseptic surgery is able to step at once into the arena as a practical surgeon. He must in the first place acquire by slow and painful degrees a familiarity with methods, manipulations and procedures built up of a multitude of little details. It takes him many years to acquire these by practice, by training himself along-side of those to whom they are already familiar, by the discipline of his own failures, and by a study and familiarity that eventually imprint them so deeply that they become a part of himself, and are carried out instinctively and unerringly under all ordinary conditions, as well as in the usual events and emergencies that continually arise in so many of the cases he treats. Septicity is an enemy of infinite variety not to be combated with success by theory alone, or by wielding a single weapon; the modern surgeon must be armed at all points, both for offence and defence, and acquaintance with his weapons and their powers is not attained save by a long course of study and training.

Even after the ordinary practice of surgery as nowadays carried out has had its foundations laid by a training in antiseptic and aseptic work, the greater part of the education of the skilled surgeon has yet to be acquired. The methods of cranial, thoracic, and abdominal surgery are necessarily, to meet the varying circumstances, so numerous, so intricate, and demand so great intellectual and manipulative skill, that only one who has spent years in constantly improving himself in them, whose mind has been fashioned by long experience and study of the problems he daily meets, and whose hands have gained by constant usage the technical facility and delicacy indispensable to success, can with impunity venture into these territories with the requisite boldness and confidence, and ensure the successful results which alone render these procedures justifiable. Such is the life-long training of the skilled surgeon of our cities and hospitals, who carries out the marvellous methods and obtains the wonderful results of modern surgery.

THE STANDARD OF MILITARY SURGERY.

A standard of work at least equal in excellence to that of the civil surgeon ought to be expected of army and navy medical officers. Senn, of Chicago, chief operating surgeon with the United States army recently in the field, and one who has done much for surgery, points this out in the following axioms:

(1) That in theory and practice military surgery is equivalent in every respect to emergency practice in civil life.

(2) That the wounded soldier is entitled to the same degree of immunity against infection as persons in civil life suffering from similar injuries.

(3) That all formal operations in war must be performed where the wounded can receive the full benefit of aseptic and antiseptic precautions.

(4) That operative interference is indicated in all penetrating wounds of the skull.

(5) That gunshot wounds of the chest should be treated under the strictest antiseptic precautions.

(6) That laparotomy in penetrating gunshot wounds of the abdomen is indicated in all cases where life is threatened by hemorrhage of visceral wounds, and the general condition of the patient is such as to sustain the expectation that he will survive the immediate effects of the operation.

These are reasonable demands, many might ask more, but nothing that falls short of some such standard can be accepted as satisfactory. Statistics prove that of all wounds in battle there are 7.4 per cent. of the brain, 7.5 per cent. of the chest, and 4.7 per cent. of the abdomen, amounting to 20 per cent. of all wounds. There must, therefore, in the next great campaign, be an enormous field of usefulness to properly-trained antiseptic surgeons, and a fearful waste of life if they be not there to occupy it. It scarcely, moreover, requires to be pointed out that gunshot wounds of other parts besides those of head, chest and abdomen offer a field for modern surgery that has scarcely yet been entered on. No extensive campaigns have been conducted since antiseptic surgery was fully introduced, but the smaller ones have shown the need for a class of surgeons more highly trained than hitherto to carry the best methods of antiseptics into the domain of gunshot wounds, where septicity is a danger greater and more frequent than in any other class of injuries whatsoever. And I am convinced from a study of wounds inflicted by modern projectiles, on which it would be out of place to enter here, that in gunshot wounds of the soft parts and extremities a very much larger proportion of lives and limbs than hitherto can be saved, and another great field of modern conservative surgery opened up by the application of improved methods and principles of treatment in the hands of those who really know how to employ them.

(To be continued.)

Original Articles.

THE VALUE OF THE PULSE IN DIAGNOSIS AND PROGNOSIS.[1]

BY HENRY JACKSON, M.D., BOSTON.

Though I have no new theory to advance as to the value of the pulse in diagnosis, yet I desire to bring the subject up at this meeting because to me it seems a matter of the greatest importance, and one perhaps that we do not consider as carefully as it deserves. The pulse is the final index of the vital capacity of the individual, and therein allows us to judge of the resistance to disease of the individual patient at a stated time: our patient may have a diseased heart, one much weakened by organic valvular disease or by degeneration of the muscular substance dependent upon disease in the heart itself or upon some toxemia, but if the heart is able to drive the blood through the system for the time at least death is not imminent. Therefore the pulse is, as stated, the final index of what the heart can do; so long as the pulse is of fair quality the system is supplied with blood and life is possible.

In diagnosis it is not my wish to discuss the value of the pulse in the various forms of organic heart disease, as for instance, the Corrigan pulse in aortic disease, and the small thready pulse of mitral stenosis, but rather to consider its value in the diagnosis of some of the more important and often obscure general diseases, especially typhoid fever, miliary tuberculosis, cerebrospinal meningitis and other diseases of the brain and its membranes.

The pulse of typhoid fever is in uncomplicated cases not very rapid, rising somewhat with each access of fever, but averaging 90 to 100 or less in cases of moderate severity which run their course without untoward accident; under prognosis I shall speak at greater length of the inestimable value of the pulse as an index of the advent of dreaded complications and the exhaustion of the patient by the toxic effects of the specific organism of the disease.

In acute tuberculosis we have a very different picture; the pulse is rapid, averaging 120 or more long before the patient reaches a critical stage of the disease. In typhoid fever the pulse may temporarily be 120, but it never remains for several days at this point unless the patient is severely sick, whereas in general tuberculosis we find great rapidity of the pulse for days, and even weeks, in a patient presenting no signs of immediate dissolution, often very comfortable and anxious to be up and about the room. The rapidity of the pulse in general tuberculosis is of much value, as in both diseases the course of the temperature may be similar; in both diseases there is an absence of leucocytosis, and often the general condition of the patient may leave us much in doubt, though in the one hebetude is usually much more marked than in the other. Of course, the Widal reaction in the one case, and tubercle bacilli in the other, may if present give us an absolute diagnosis.

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[1] Read before the Massachusetts Medical Society, June 13, 1899, and recommended for publication by the Society.

In cerebro-spinal and tubercular meningitis the pulse may be almost pathognomonic; in the early stages, during the time that the vagus is stimulated by a moderate degree of irritation, the pulse is slow, or rather, what is the important point in diagnosis, is slow in proportion to the general condition of the patient. To take a case we have before us, a patient who for a day or so has had a moderate fever, who is evidently very sick, with perhaps vomiting and severe headaches; yet we find a pulse of 70 to 90. If the case were typhoid fever the pulse would be more rapid; the slow pulse in the case under consideration is, however, slow, because of the direct action of the products of inflammation on the vagus. Therefore, the pulse is no criterion of the general condition of the patient. If there is added to the slow rate an occasional intermittency, we have a still greater assurance that the pulse is dependent upon some direct pathological lesion, and can by no means be considered as an index that our patient is not seriously ill, as is suggested by his general condition.

It is not an invariable rule that the pulse is slow in the early stages of meningeal trouble, but if not continuously slow we find that the rate varies much without any corresponding change in the condition of the patient and independently of the degree of the fever. I would cite two cases seen in consultation, illustrative of the value of the pulse in meningitis. Several years ago I saw in consultation a young child who had been sick several days, was somewhat stupid, had vomited, had fever, and seemed to be very sick: the pulse was 100, and intermitted occasionally. I suggested tubercular meningitis as the most probable diagnosis, chiefly perhaps on account of the pulse, a symptom that the attending physician had looked upon rather as his mainstay in hoping for a favorable issue of the case. My diagnosis was correct. On the other hand, I saw this winter a case where cerebro-spinal meningitis was certainly a possible diagnosis, and yet a rapid, regular pulse made me very doubtful as to the correctness of the diagnosis, and complete recovery in a few days convinced me of the truth of my impressions.

The slow pulse is only seen in the early stages of meningitis, as later in the course of the disease, when the vagus has been paralyzed by pressure or by disease of the nerve itself, we find an extremely rapid pulse, as the inhibitory action of the nerve has been destroyed; to use a metaphor, the engine runs with the throttle wide open.

In cerebral hemorrhage the pulse may again be of great value, when definite symptoms are wanting, as paralysis and allied phenomena; that is to say, in cases brought to a hospital in a comatose or semi-comatose condition, cases so aptly described by Mr. Ernest Hart as "drunk or dying." In alcoholism the pulse is rapid, in cerebral hemorrhage, slow; and hereby, as in a case I wish to cite, we may make our diagnosis. During my last service a man was brought into my ward by the police: he was unconscious, was tossing about the bed, was flushed. The only history obtainable was that two days previously he was found in a doorway, taken to the station house, where the diagnosis of intoxication was made, then was removed to the city prison, whence he came to the hospital. Careful physical examination showed no fracture of the skull, no evidence of external trauma; strong stimulation of the orbital nerve at its exit gave evidence of a slight left facial paralysis and the left side was moved less vigorously than the right side; the neck was a little stiff. Leucocytes 12,800; lumbar puncture negative; temperature 99°. His pulse was 40, a factor that to my mind rendered simple alcoholism impossible. The evidence of paralysis was slight and not easy to obtain, the pulse was evident. The man died the day he entered, and autopsy showed fracture of the skull and extensive laceration of the brain, with subdural hemorrhage. In view of the diagnosis that I made, I was criticised because I had not suggested trephining; I considered the matter and decided against it because the severe general symptoms without marked paralysis made it evident to me that the man was suffering from extensive cerebral trouble, rather than from total destruction of a limited area, which might be amenable to operative procedure.

Dr. Bowditch has recently called attention to the value of a rapid pulse in the diagnosis of early tubercular trouble. On the other hand, an extremely rapid pulse without evidence of serious disease may be suggestive of exophthalmic goitre, as in a case described to me in which later goitre developed.

In many other diseases the pulse may assist us in forming our diagnosis, as for instance in the early diagnosis of acute follicular tonsillitis and diphtheria, the one usually associated with high fever and rapid pulse; the other in the beginning often giving rise to only slight fever, while the pulse may not be markedly quickened unless toxemia has already taken a severe hold upon the patient.

I have spoken of the value of the pulse in the diagnosis of typhoid fever, but in prognosis we have in the pulse what I believe to be an infallible guide. In uncomplicated cases the rate of the pulse is slow relatively to the degree of the fever and the general condition of the patient. When the pulse is continuously rapid, the prognosis becomes proportionately grave with the increase in the rate, though no other alarming symptoms arise to render us doubtful as to the outcome of the case. Leaving out of consideration hemorrhage and perforation, a rapid pulse is an index that the patient is in danger of succumbing to the specific toxemia produced by the disease. The pulse is to us an index of the effect upon the individual patient of the poison of the typhoid, and is of far greater value than any other one symptom or any group of signs or symptoms.

In my early student days I read an article, I think by Dr. Wilson of Philadelphia, stating that in typhoid fever the danger line was reached when the pulse registered 120; and all cases that I have seen since that day have only confirmed in my mind the great dependence to be placed upon this axiom. I have seen patients die who had only a rapid pulse as indicative of danger, while again and again I have seen patients recover where the pulse ran from 110 to 120, yet they were very stupid, had involuntary passage of urine and feces and perhaps frequent vomiting. I am so sure of my ground in this matter that in the individual case I dare to make a favorable prognosis if the pulse is slow, no matter how unfavorable the other symptoms may be. On the other hand, a rapid pulse, independent of any complication, as hemorrhage or pneumonia, causes me great anxiety.

After careful consideration of this matter in a considerable number of cases, I feel convinced that the danger line is reached when the pulse becomes 120. Of course many cases recover when the pulse is rapid, but not without a severe struggle for life.

The remarks which I make as to the prognosis in typhoid do not refer to cases complicated by intermittent diseases or by perforation and hemorrhage. In such instances the value of the pulse lies rather in diagnosis than in prognosis.

A sudden rise of the pulse without apparent cause suggests hemorrhage, especially if accompanied by a fall in the temperature. In this connection we must remember that the fever may fall by crisis, but in such instances with the fall of temperature comes a corresponding fall in the pulse, and the general condition of the patient is decidedly favorable.

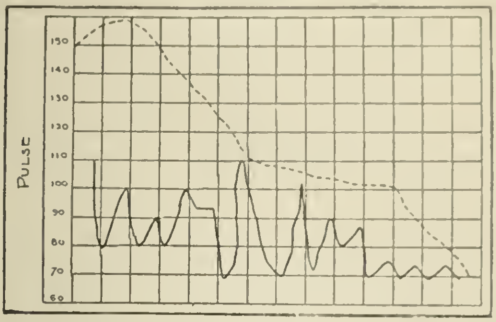
In perforation the pulse is of the greatest value, as in the following case. Last summer, at the time of my visit, one of my patients was perfectly comfortable with a pulse of 80: at half-past one my house physician, Dr. Stevens, telephoned to me that the man had a pulse rising rapidly, had pain in the right side of the abdomen, an access of fever, with an expression of anxiety. Examination showed no blood in the bowel, the pulse was 120, there was a leucocytosis of 15,000, and there was rigidity of the right side of the abdomen. The surgeon who saw him in consultation agreed with me in the diagnosis and found a perforation when he operated at four o'clock. In this case the leucocytosis was of great value, as I have never seen leucocytosis in an uncomplicated case of typhoid fever. Hemorrhage was ruled out by the rise in temperature, and the absence of blood by rectal examination.

The pulse may be rapid in typhoid fever in other complications, as otitis media and phlebitis, without rendering the prognosis unfavorable; whereas in acute inflammation of the parotid the prognosis is grave, more so, I think, than when pneumonia or pleurisy is the complicating pathological factor.

In convalescence the pulse is often rapid, and then of no serious import; it is the rule that a patient will pass through a severe typhoid with a pulse not more than 110, and when he first begins to get about have a pulse of 120 or much higher, without the slightest indication that we have any serious danger to combat. Further, many slight troubles in convalescence, as constipation, excess in diet, fatigue from seeing friends, cause a sharp rise in the pulse.

I have once seen a slow but very poor pulse in typhoid in a man that was seriously sick; examination of the heart showed that the pulse was not a sufficient index of the action of the heart, in that many beats were so feeble and inefficient that the wave was not transmitted to the wrist.

In the first volume of the medical and surgical reports of the Boston City Hospital is a valuable article upon typhoid fever, by Dr. Upham. He speaks of the prognostic value of the pulse and states that in 65 cases that recovered the average highest pulse was 108, while in 14 fatal cases the average highest pulse was 140.

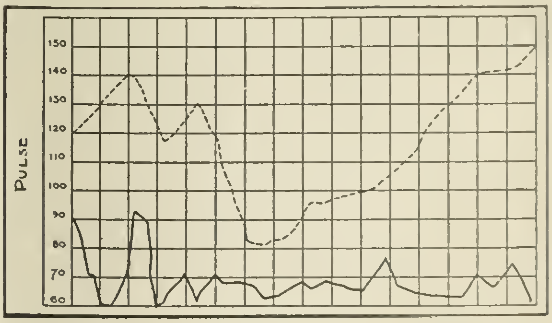


Case I. Parietal disease of the heart. Dotted line shows the apex beat.

I have looked over a large number of charts of typhoid fever cases in the Boston City Hospital, and found the same relative proportion of deaths to the pulse-rate.

Finally I wish to quote from Dr. C. Ellery Stedman's valuable essay on typhoid fever, published in the third series of the City Hospital reports. In this essay Dr. Stedman says, "Temperature for diagnosis is invaluable. For guidance during the disease I rely on the pulse." "I have seen no patient die whose pulse has not reached 120, twenty-four or more hours before death," and finally, "In these ten years the pulse has given the warning of approaching trouble even when the temperature has signified nothing untoward."

I wish to call attention to one very marked sign of cardiac weakness that so far as I know is not mentioned by most writers. Dr. Whittier has referred to it in a short article in the *Boston Medical and Surgical Journal.* Namely, a discrepancy between the rate of the heart beat and the pulse as felt at the wrist: in many cases it is difficult to count the pulse because of its irregularity or the constantly changing rhythm, though we are conscious that a feeble pulse is occasionally felt beneath the finger, but in the cases under consideration no pulse wave is felt. This condition may be said to represent the acme of cardiac weakness and may be



Case II. Dilatation of heart, probably parietal disease. Pulmonary infarction. Death. Dotted lines show the apex beat.

responsible for some of the cases in which a slow pulse is reported in fatty degeneration of the heart. This discrepancy between the rate of the pulse and the apex beat I have seen frequently in great dilatation of the heart, dependent upon disease of the myocardium, much less often in valvular disease of the heart. I have noticed the same phenomenon in acute degeneration of the heart as seen in infectious diseases, notably in typhoid fever and in diphtheria. In diphtheria it may be seen during the acute stage, and also in the serious cases of cardiac weakness which appear late in convalescence, perhaps dependent upon diseases of the nerves regulating the action of the heart, similar to the specific neuritis which causes paralysis of the muscles of the nasopharynx or the muscles of the extremities.

The following cases give a good illustration of the phenomenon:

Case I. Man, forty-five years. Great alcoholic excess: short of breath for six months; great general edema; cyanotic. Pulse irregular, intermittent; heart dilated; at the apex was a systolic murmur. He gradually recovered and was discharged in a month. On entrance the apex beat was 160, while the pulse was 110. For ten days the apex was much more rapid than the pulse, while later in convalescence they coincided. (See Chart I.)

Case II. Man, forty-five. No alcoholic excess; no rheumatism. Arteries sclerotic. Heart much dilated. Great improvement at first in hospital. Then many attacks of pulmonary infarction; acute and rapid dilation of the heart, great edema and death. (See Chart II.)

These two charts are illustrative of the condition of great weakness of the heart in which a large proportion of the beats are so feeble that no wave is transmitted to the wrist.

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PHILOSOPHY OF SICKNESS.[1]

BY THOMAS F. HARRINGTON, M.D., LOWELL, MASS.

It is not my privilege to present any new addition to the long list of recent discoveries and wonderful progress with which the present medical age abounds, but rather to claim recognition for an old friend, a very old one, who, during some of the ages at least, received attention from the medical profession, but who has never been so neglected as at the present time.

In order to reach a proper conclusion, it will be necessary to consider some questions, which at first sight may seem irrelevant, but which may have more or less bearing in sustaining recognized phenomena.

During all ages there has been that mystery in the minds of the laity surrounding sickness which neither the advance of civilization nor the improved modern methods of scientific enlightenment seems to be able to dispel. We find that at the end of the nineteenth century people censure the physician on the death of his patient with as much rancor as was done in the earlier and savage ages; not because the physician was unable to save the patient from death, but because he did not have knowledge of the power to cure the disease. Is it not just and proper, therefore, that we members of a profession to whom such power is ascribed, and who not unfrequently encourage such a belief by our private conversation, acts and publications, should try either to earn to the best of our ability the compliment implied, or else stand before the world in our true light, stripped of all false coloring and chicanery.

That medical science and art has made wonderful advances tending to the alleviation of human sufferings and to the prolongation of life is admitted by all; that many diseases are yet beyond the reach of human skill must also be admitted; but that there is in every sickness a quality of body or mind, or both, which is capable of recognition and influence from without seems to have escaped observation. Many physicians, it is true, in all ages of mankind, have felt its power in the treatment of sickness, but they have either ascribed the result to some agent employed, that is, a cure, or to the ingenious philosophy of homeopathy, as lately formulated by Dr. Charles S. Mack, and reported that the patient "recovered."

I have not the time at this opportunity to introduce any of the various theories of metaphysics, concerning which men most eminent in sciences have differed. It would be presumptuous for me to even select one of the many advanced. It will be sufficient to choose certain admitted dogmas from many of them in so far as they have, in my judgment, any bearing on the philosophy of sickness. Ancient and modern philosophers and scientists have ever struggled with the one factor which concerns us in the consideration of this subject, namely, personality. Many theories have been promulgated, schools founded and creeds erected at various times throughout many ages. It does not concern us much, as physicians, whether empiricism or transcendentalism, idealism or materialism is the accepted philosophy of to-day; whether we believe in Darwin, Spencer or Pasteur; whether one part of the brain or another is concerned in our mental acts; whether we compare our physical movements to a message over telegraph wires or whether the brain is the seat of the soul; all these are questions of indifference to the physician in the appreciation of individuality; the one truth shines forth, that man possesses an identity, which is neither wholly physical nor wholly psychical, but which is both, often acting through the ethical life and often independent of it — physical because it has a bearing on results which we associate with others; psychical because it is limited to the one being which, as Lotze says, is capable of being affected and producing effects. Thus there is in every person a dual person which is susceptible to change like its physical self, but which cannot be separated either in whole or in part from the living physical body — a being which, while in itself cannot be explained nor influenced in the sense that physical bodies are, yet can be explained and influenced indirectly, that is, by connecting it with the physical self, a sort of parallelism between the two (Münsterberg). That this individuality has not been capable of exact localization and description is no argument that it does not exist, for if such a position were true, what would become of many of the sciences or departments of knowledge? Even truth itself is not always possible of demonstration.

Nature is constantly giving us proof that things are different than they seem; she demonstrates that while the earth under our feet is at rest and immovable, yet it is in motion more rapid than particles of dust in the fiercest whirlwind; we believe that sound and color are such, yet we cannot explain why, unless we fall back on our senses, and that is just where we find the proof of the individuality in our fellow-men. We cannot perceive this quality in man as readily as we can the qualities of physical science, yet it must not only be perceived, but appreciated, if we are to do full justice to our patients. As man is superior to animal in appreciation, so there may be a difference among men as to the quality and quantity of appreciative power each possesses; that all mankind has the power of appreciation is too well proven to need argument. We are accustomed to argue causes from the effects; so in like manner are we able to conclude from the products as to the power which acted; these products in man are individuality. If we do not recognize the individual in sickness, but rather view sickness in reference to those causes or conditions we know of (that is, pathological or others), we are apt to ascribe certain conditions to these causes rather than ascribe them to unknown causes; hence error, and according to the degree of our ability to describe or the activity of our intellect, we sustain or formulate new theories, diagnoses and diseases, all resting on the same unsteady foundations, which must necessarily fall, as no hypothesis which is not founded on truth can prevail.

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[1] Presented to Section on Practice of Medicine at American Medical Association Meeting at Columbus, Ohio, June 6-9, 1899.

It would be as reasonable to deny that man possesses the power of speech at birth, because he did not exercise it then, or that man has will or consciousness, because an anatomical description is wanting, as it would to assert that man does not possess personality. When we see a frail, emaciated child withstand an attack of disease of a uniform type which proves fatal to another child with every condition as near similar as it is possible for two sicknesses to be; when we see poorly-nourished, hard-working women pass through a difficult labor, while others, with every advantage which wealth can procure, succumb to normal labor; when a man over ninety years of age, whose mental faculties have been most energetically applied, submits to a serious surgical operation without an anesthetic; when celebrated army surgeons ascribe nostalgia as a cause of death among volunteers in the army, then indeed must we recognize some influence other than mere physical traits in the human system.

The present tendency to explain the phenomena through the nervous system is, in the majority of cases, a makeshift which is as uncomplimentary as it is unscientific. Stamina, vital force, faith, idiosyncrasy have all been offered to explain the results, and while it may be impossible to fit a term which will meet all objectors, the one fact remains, that there is *something* present. Again we see this self, this personality, exhibited in another form; for example, self-discipline, sagacity of mind, decision, honesty of character, all of which require more than a mere physical or psychical origin for the phenomena manifested. It implies a plurality in the individual, one and the many. If we believe in the present accepted theory that disease, exclusive of mechanical and traumatic disease, is due to a sort of auto-intoxication arising from changes in materials normally present in the body, and not due to any new material from without the body, and that this alteration (disease) is subject to the same laws, in a degree, which regulate the organism in health, is it asking too much to admit that those qualities of mind and body and soul which we recognize and admire in men in health may also change in sickness and become different in every essential, and as they are often the ruling forces in health, so, too, they may become such in disease; in fact, they may be one factor in sickness requiring treatment.

Bouchard says that "man's urine contains daily enough poisonous matter to cause the death of the person, if it were not excreted." The importance of attention to the condition of the intestinal canal in nearly all the general diseases is well recognized.

In health man is constantly changing in his composition, never the same at any two moments of time; this is likewise true of disease. Disease cannot be looked upon as a fixed science, for while many of the phenomena in disease are fixed and positive, yet when viewed in the totality many constituents are wanting. No two individuals see disease with the same image, yet this does not exclude a classification of disease, nor the recognition of types. The picture, that is, the diagnosis of disease, is never viewed with reference to one particular organ change, to the exclusion of all other organs and changes, but our conclusions are based on the whole picture before us; in other words, the patient. Now, if this be true in regard to the physical being, why should it not be true of the inner self?

A celebrated artist credits his great success to the fact that he never paints a picture until he learns the traits and character of his subject, and during the sittings he talks to the subject on those topics which have a personal interest to him (the subject); in this way he produced a picture which was much praised for its naturalness; it reflected the true inner self as well as the exterior physical features.

What is the very thing which makes one physician more successful than another in the care of patients? The family say it is "faith" or "confidence," while we often think it is our superior knowledge. The truth is, that the successful physician is he who perceives and appreciates the whole patient, and uses the knowledge gained with the proper judgment, the physician who treats the patient as well as the disease.

The stimulus given the patient by his belief that his physician possesses an extraordinary power or insight is often sufficient to awaken the potentiality in the inner patient which shows itself in the physical self.

When we view the past history of medicine with its false notions, superstitions and beliefs, with its crude methods of research and investigation, and compare the teachings and doctrines of Hippocrates with those of our age, with all the advantages which we possess, it must with truth be admitted, that in many respects, the advance has been very little, either to the profession as such, or to the science of medicine. Much of the confusion in the diagnosis and treatment, as well as in prognosis, which prevails today has been brought about by neglecting to look deeper than the physical aspect of the case presented. The over-drugging treatment of patients, which is now happily giving way to rest, dietetics, and conservation of patients' strength, was due more to physicians giving their thought and energies to the disease and thereby neglecting the patient, than to any particular demand for poly-pharmacy. We find the cause of this chiefly in (1) improper medical teaching; (2) specialism.

If we take any of the medical colleges of the day and examine the courses offered to the students, it is evident at once that there is yet much room for improvement in the system employed. The advanced step taken at Harvard and others in the standard required, both in entering and in graduating, augers well. Yet, to claim that no man who is not a college graduate can become a successful and creditable member to the medical profession, is carrying the analogy to an absurdity; there are too many living proofs to the contrary.

While the present system of "electives" prevails at the colleges it is possible for a boy to graduate in arts, and yet not select, during his whole course, even an inhibitory study to his medical course. True, he is able to anticipate some of the first-year medical studies, but that is merely for time-saving purposes. I believe in the elective system as the one calculated to give the greatest good to the greatest number; the defect is not so much with the system as with its application. A university, to have any right to such a title, must teach universal knowledge; anything less is not truth, and to whatsoever the pre-medical training of the man is deficient, just to that degree will his usefulness as a physician be impaired. It is not the addition of new studies that is required, but rather the awakening of the student's mind to the proper appreciation of the courses now offered. The great importance of physiology, anatomy, pathology and histology in the study of the human system (physical) is an axiom of medicine; the advantages of laboratory researches in neurology and brain diseases are more apparent every day, enabling us to trace many phenomena to almost a certain origin, but it is to the teaching of clinical medicine with its auxiliary, theory and practice, that we may, with profit, look. I take the system used at Harvard because I think it to be the highest type, as well as being my Alma Mater. After witnessing and performing the most conclusive experiments on animals, after learning thoroughly the etiology and symptoms, as laid down in all the text-books, the student sees patients by the hundreds at the clinics and hospitals, with every opportunity to become familiar with disease in all its details; he hears the patient's history, past, present and future; inspects, auscultates and percusses the patient to his heart's content; demonstrates to his teacher and fellow-students the objective and subjective signs of the disease; a most elaborate system of diagnosis by elimination is gone through and the patient is passed on to make way for the next patient. After months and years of this routine, he passes his examination and receives his reward — *Medicinæ Doctor*. Now what are the results of this training? While there may be no question but that the experiments performed upon animals in the laboratories are true, scientifically, and also, that they have been a great blessing to humanity, on account of the knowledge gained, yet the physician who looks upon his patient in accordance with the conclusions drawn from such experiments, to the exclusion of all other knowledge, sees a being who is born, grows, eats, drinks, walks, reproduces his kind, and dies; he compares his organs, his structures, his functions, his faculties to those of the animal, and practises medicine accordingly (Newman). Such a man would not be taken as the type of the true physician, yet one has to but read some of the medical journals of to-day to see that it is not always the graduates of unrecognized schools who often give current to such views. The student does not see the man, but rather the disease; he views him wholly in his relationship to those known causes with which he is familiar, and neglects to see him in his higher, truer self. He has, perhaps, seldom seen his patient more than once, and has never had a patient from the beginning to the end of an illness. The student should be taught that there are no fixed rules applicable to all patients, even in the so-called type of the disease; that each patient is different, in a degree, from any other patient ever seen; that hereditary, environment, sex, age, climate, occupation, etc., all have their bearing on the patient in certain particulars, but that they are not the only factors; teach him to look for the true patient, the individual, and while it may not be as easily discerned nor demonstrated as physical factors, yet it nevertheless exists in every person. If we neglect to appreciate this quality in our patients, our knowledge of their condition and our usefulness as physicians are limited to just that degree. Teach the student the faculty of looking for the self in every patient and of forming some estimate of its influence, for even if the conclusions be faulty, yet they are better than none, and in time such a habit will bring its reward.

One of the surest ways of learning the real patient is for the student to become, metaphorically, the patient. Although it cannot be expected that every physician should be a scientist, so to speak, yet, the cultivation of the practice of looking at his patients in the manner implied above must make him more systematic in his observations and enable him to place phenomena in their proper position to known facts. The microscope does not dispense with eyes; the lecture-room and text-books will help him, but he must be true to himself, he must be a party in the work. It will develop that quality which is most necessary to the physician, that is, judgment; not the faculty of avoiding mistakes, but rather that which enables him to seize the strong points in the case before him.

Have the student study his patient and the disease thoroughly, then come before the class and submit himself to a method of questioning and cross-examination from the professor, the student acting the part of the patient in the subjective sense, supplying the necessary objective information to make an intelligible picture; after which the students make their diagnosis to the professor. Such a method would give the young physician more practical knowledge and greater confidence in meeting his patients in private practice.

Until medical schools have their own hospitals, with all the advantages that that implies. it will be necessary to go on more or less in the same routine as at present; but the needs of a school-hospital could be somewhat minimized if the system now used (Harvard) in the obstetrical department, of giving the students private cases in patients' homes, with consultations (demonstrations) under one of the teachers, was extended to clinical medicine; disease can be demonstrated and studied in schools and hospitals, but sickness can be best studied and appreciated in the homes. Every physician is familiar with the self-confidence manifested at our first confinement cases in private practice, and the almost entire lack of confidence we experience on our first medical cases. Nothing could be a stronger argument in favor of benefits of the home-patients method of treatment.

Much has been written on the injurious effects specialism is having on the practice of medicine. While there is no doubt but that society and science is benefited by splitting medicine up into various parts, and while it is, perhaps, true that such subdivisions are necessary, yet the physician who gives himself wholly to this practice must of necessity go backwards, and we see him carrying his views into cases in which they are not applicable; the result then becomes detrimental to science and society. The tendency of young graduates to rush into specialism, without any experience in general practice, should be condemned by all who hope to see the medical practice reach the high plane for which it was destined. Zamolxis puts it well when he said that "As you ought not to attempt to cure the body without the head, or the head without the body, so neither ought you to attempt to cure the body without the soul, and this is the reason why the cure of many diseases is unknown to physicians of Hellas, because they are ignorant of the whole, which ought to be studied also, for the part cannot be well unless the whole is well" (Allbutt). The overcrowded condition of the medical profession; the age at which men graduate in medicine; the belief that the road to fame and wealth is more direct and shorter in specialism; the microscopic tendency in the question of diagnoses; and the association of the general practitioner with "old-fashioned ideas" in the minds of the new physician, are some of the causes tending to modernize the practice of medicine. That a reaction has already set in is evident from the public addresses of those competent to speak, also from the position taken by our leading colleges on the question of higher medical education, making a university of medicine of what was formerly a school. Then, again, the marked progress in the general educational standard of society of to-day, and what that promises for the future, are almost conclusive that the time is not far distant when more will be demanded of the physician than that he be a part and not the whole, that he combine those traditional qualities of the old physician, reinforced by modern discoveries, with a systematic knowledge of all those sciences necessary to complete the whole, perhaps less in amount in special lines than is now held by some, yet sufficient. The physician of the whole body and mind, who from his knowledge of nature and man and soul is the only one entitled to that name — Physician.

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IMPROVEMENTS IN ARMY MEDICAL SERVICE, SUGGESTED BY EXPERIENCE IN THE LATE WAR.[1]

BY WILLIAM H. DEVINE, M.D., SOUTH BOSTON,
Lieutenant-Colonel and Medical Director, Second Brigade, M. V. M.; Late Major and Brigade Surgeon, U. S. V.

THE object of this paper is not to criticize the medical service of the regular army or National Guard, especially of our own State, whose medical service at the commencement of hostilities was almost all that could be desired, considering that the volunteer militia had not seen active service for over thirty-five years. It is only by experience that we can approach perfection in any branch, and my idea is to suggest methods for improvement in our service.

As surgeon in charge of a large field hospital, I have had exceptional opportunities to observe defects in our present system. No matter what advancements are made in National Guard medical service, one cannot fully utilize them in national as in State service, for the reason that in the former we are depending on the efficiency of superiors over whom we have no control; but the State training of its medical officers in a body and the individual training cannot fail to produce good results. To illustrate this point: The country has another war; Massachusetts sends to the front, as it recently did, medical officers well trained in the duties of their department; each regiment, as in this war, is sent to a brigade composed of troops from different States, whose medical department may be controlled by an officer of little experience in caring for large bodies of troops. Necessarily, the inefficiency of the head of the department must hamper the work of our medical officers; for instance, take the matter of supplies; if the superior officer does not furnish the proper medical supplies, the command must suffer; but with subordinates who thoroughly understand red-tape the career of the inefficient will be anything but pleasant. Then again the surgeon is apt to be detailed from his organization for special duty, but wherever he goes his individual training will help him.

What excuse have I to offer for bringing this subject before our Society? I have no apology to make; it is the proper place. Our profession is responsible to a certain extent for the men it sends to the medical department. For the work of our physicians on the field, the profession at large share with the military authorities the criticism which may be just or unjust, and it seems to me highly proper to interest the profession in the matter. The material, medical, surgical and hygienic, procured in war should be placed in the hands of the best professional talent, in order to reap what profit there is to science and for the benefit of mankind. For the information of those not familiar with military organization, I will state that medical officers in an army corps (containing about 25,000 men) were distributed about as follows: one chief surgeon of corps, with the rank of lieutenant-colonel; two division surgeons, with rank of major; six brigade surgeons, with rank of major, one for each brigade; nine regimental surgeons, with rank of major, one for each regiment; eighteen assistant surgeons, with rank of first lieutenant, two for each regiment; one assistant was detailed for special work at division hospital, or other duties.

So many details were made from medical officers for special duty that most organizations were handicapped by being short of physicians. Brigade surgeons existed only in name. They were detailed to take charge of division hospitals and other special duty. The senior regimental surgeon was acting brigade surgeon. Contract surgeons were detailed to take the place of these officers in many cases. Many of these contract surgeons were first-class men, impelled to offer their services through patriotic motives, and I shall always recall with pleasure the able and self-sacrificing devotion of many to their duty. These men were not examined for their positions, and, consequently, some got into the service who had nothing to recommend them but their political influence. For obvious reasons every surgeon ought to be commissioned in the service, not for any vain glory, but in order to render all amenable to the same discipline, and to stimulate pride. I cannot see the reason why men should serve in this department without commissions any more than in any other. A reserve staff could be formed of physicians who came with good professional recommendation and passed an examination in the different branches of the science. If I can judge by the eagerness of my medical neighbors to go to the front, I think the flower of the younger members of the profession could be secured for this honorable and important work. When a medical officer was detailed for special work, as, for instance, where one considered an expert in yellow fever was hurried to the front, a member of this reserve staff who had shown his qualifications for the work should be detailed to take his place. He could assume his new duties feeling that he would be respected by officers and men, holding the commission which entitled him to it. Of course, it is only fair to mention that the apparent urgency was so great and the heads of departments so busy that to make provision for this method was perhaps not deemed expedient.

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[1] Read before the Massachusetts Medical Society, June 14, 1899, and recommended for publication by the Society.

Had our troops in this Commonwealth gone to the front in brigades which had long been organized, their service would have been even more efficient than it was, with medical and every other department properly equipped and an ambulance corps that has been a pride to our soldiers. Our leaders in other departments of the militia service as well as the medical are, and always were, men of ability and action. As intimated in an early part of this paper, surgeons in their respective States may have received excellent training, but in the field may be handicapped by an officer whose experience has been confined to a small military post; much of the executive ability of the former is lost by this, but even under these circumstances their training renders their services valuable, although not so much so as if they performed duty with their own organizations.

You are familiar with the noble work of the Massachusetts Volunteer Aid Association. The surgeon superintendent of their ship *Bay State* was formerly Surgeon-General of this State, and his successful management suggests the feasibility of calling to our aid in emergencies the services of physicians who have served the State in its medical department, but who have retired after nine years of continuous service, or another class that have severed its connection with the militia for various reasons. In looking over the adjutant-general's reports of this State for the past ten years, I find the names of at least twenty surgeons who have left the service. Most of them would be proud to give their services if asked, and I can answer personally for several, who have told me that they would have served if they could have procured an appointment.

I recommend that in the future, a reserve staff be formed of all medical officers who have served in the militia. These men have received some training in the duties of the medical department and if not required in the active work of a campaign, their advice and relief work at home would be of great value. The skeleton of a first-class Volunteer Aid Association could be formed by these officers, controlled by the surgeon-general, and its official connection with the service would be of decided advantage. A military organization should be able to take care of itself in every department.

At least one surgeon in each brigade, and better if in each regiment, should be selected for his skill in surgery. You can see the importance of having a trained surgeon, a specialist in surgery, in an organization that may be engaged in battle where major operations requiring great skill may be performed. The camp of instruction is not the place to teach surgery, neither is the battlefield the place to learn. In the school suggested men will be taught surgery, particularly that which relates to gunshot wounds and other injuries likely to be met with on the battlefield, but this instruction cannot make them skilled surgeons; a special aptitude is required, and we should have no difficulty in getting at least one first-class surgeon in every organization. A special surgical examination on admission could be given to applicants seeking those positions.

A bacteriologist could be attached to each brigade or division. The reserve corps before alluded to could furnish specialists in this line. With thoroughly equipped laboratories, they could be of inestimable value in aiding the surgeons to diagnose doubtful cases of malaria and other diseases, besides furnishing valuable aid in compiling the medical history of an army, and adding to science. A division hospital, as its name indicates, is a hospital for all the sick soldiers of the division, that is, for those ill enough to be confined to bed. In this campaign regimental hospitals were practically abolished and all the hospital equipments called in at least in one Southern camp to form the division hospital. This met with such vigorous and just opposition from the volunteer surgeons that a compromise was made and each regiment allowed to retain two cots in its hospital for emergency and observation cases. Towards the middle of September the wisdom of allowing regimental hospitals was clearly seen and provision made for the care of soldiers in their own regiments. I think most volunteer surgeons will bear me out in the statement that division hospitals are failures in the broad sense. There should be a division hospital for special cases, where major operations could be performed and where cases requiring treatment of a specialist could be referred; also a contagious hospital. The regimental surgeons should treat their own men; their sick should be nursed by their own comrades; the question of discharge for disability and sick furlough should be settled by the regimental surgeon. The surgeon would not only be responsible to his superiors for the care of his sick, but he would also be responsible to his State and his neighbors. With division hospitals the regimental surgeon has but little responsibility; he becomes a mere transferring agent for division hospitals; an admitting physician, so to speak; his men lose confidence in him. In the future, if division hospitals exist, they should be thoroughly equipped with everything necessary to form a first-class field hospital, and not depend upon the equipments of the State to furnish them. I do not wish these remarks in regard to division hospitals to be considered a reflection on any individual for their introduction in this campaign, for it did seem before and early in the war that the system had much to recommend it; but I base my opinion on my own observations and those of many surgeons. However, a longer trial of these institutions may convince us of their superiority. The failure to supply these hospitals with suitable equipment is explained by the fact that the demand for medical and hospital supplies for such a large army was so great that it was impossible to furnish them at such short notice.

In the National Guard we have not the organization for a division hospital, but it would be well to practise more for the perfection of brigade hospitals, which really are division hospitals on a small scale, in order to perfect ourselves in the working of larger field hospitals. We had so little sickness during our short encampment in this State that we had but few cases for our brigade hospital at South Framingham.

The encampment, care of men, etc., should be the same as in actual war; the drinking water *should be filtered, no matter how pure*, in order to accustom the men to it, and to impress on their minds the importance of such a procedure. A garbage plant is important; a regiment should be so accustomed to active service methods that it could step gracefully from the militia into the national service. To be sure, there would be more or less recruits in every organization at the commencement of hostilities, but the skeleton of the perfect machine would be there and would quickly adapt itself to campaign work. The soldier cannot be produced in a month any more than the mechanic.

How much have we improved our medical department since the Civil War? And in what ways shall we improve it in the future? As far as the volunteer service is concerned, we have made a decided advance. Much interest has been taken of late years in the progress of this work. Education of medical officers coincident with general medical education has contributed not a little. Antisepsis has contributed greatly, but of course we cannot claim all improvements, such as antisepsis, for the medical department; but we can claim it for our profession, and after all, what we claim for our department is simply a claim for our profession, for there is no title we are so proud of as plain doctor.

In 1892, the Association of Military Surgeons of the National Guard was formed, and in 1894 the scope of the organization was enlarged by taking in the medical officers of the United States Army, Navy and Marine-Hospital Corps, and the name changed to Association of Military Surgeons of the United States. This Association meets annually, and many valuable papers on all subjects pertaining to military medicine are read and discussed. The convention lasts three days, and the exchange of ideas and the interest awakened in subjects have done much to advance the medical service of the country.

I do not wish to take all the credit for suggestions here made. Some are original, and many are obtained from my associates in the militia, particularly the superiors with whom I have had the good fortune to serve.

A few quotations from the surgeon-general's reports will show the interest taken in our State medical service. Many of the suggestions have been acted upon and have borne good fruit. I trust that ere another year has passed the volunteer militia will have profited by the introduction of all these improvements.

Surgeon-General Kittredge in 1893 recommended a physicial examination for recruits, that a gymnasium be established in every armory, and a systematic course of athletic exercises be prescribed and carried out under a proper instructor, and also that a system of feeding troops in conformity to military usages be adopted, together with an emergency ration.

Surgeon-General Burrell's Report, 1894: "In a few of the States the medical department of the National Guard has been placed on a permanent footing by being made a staff corps. In one State, when a vacancy occurs in the medical department it is announced in the public press that a competitive examination will be held for such appointment, and the best man is commissioned as an assistant surgeon, and is sure of promotion and full surgeonship, and possibly a directorship. Whether it were wise or not to bring about this condition of affairs in our own State has been a matter of serious consideration; but our present system and the personnel of the medical department of this State are in such condition that it has not seemed wise to me to seek such a change, at least at present." (Some of the duties of medical officers, M. V. M.)

Recommendations by General Burrell, Surgeon-General's Report, 1894: "That a physical examination of recruits be made mandatory; that the surgeons receive compensation for the examination." Dr. Burrell and his successors have worked hard for the attainment of this, and now the examination of recruits is mandatory, and the surgeons will receive moderate compensation for their services. Since the plan was started by Dr. Burrell our recruits have been examined to some extent through the generosity and unselfishness of our medical officers, who have worked zealously for the State without pecuniary reward, but in the future this examination will be done in the thorough and efficient manner such important work deserves, and the surgeons receive some compensation.

In the late war many officers and men enlisted who were indebted to their States for their military training, but being rejected on physical examination, were consequently unable to make any return for this training.

The war has taught the lesson anticipated by General Burrell and his successors, and in the future our militiamen will be ready physically as well as patriotically when their country calls for them.

Surgeon-General Burrell's Report, 1894: "I am convinced, from personal investigation and from reports of our medical officers, especially that submitted by Lieut. C. W. Galloupe, that a large saving in illness, even of a temporary character, might be made at the encampments of State troops by the State providing suitable food. I would by no means recommend an army ration, — not but what an army ration in itself is an excellent bill of fare, but it is not adapted to State troops who go into camp for a short time. Troops should be provided with plain, wholesome food, and this should be furnished by the State."

In 1894 General Burrell adopted a system of blanks modelled after those in use in the army, but so modified as to meet the wants of the State service.

A school for medical officers was started during the régime of Surgeon-General Burrell and is still in existence; one or two sessions have been held every year, and many interesting papers on subjects of military medicine and surgery have been contributed. Dr. Burrell obtained permission from the Surgeon-General of the United States for members of our organization to attend the school for regular army surgeons in Washington, but for obvious reasons advantage was not taken of this privilege. The starting of our school by Dr. Burrell was a step in the right direction, and the continuation of this idea on a larger scale desirable, but the formation of a special school for militia medical officers, and conducted by medical officers, is impracticable, and I would therefore recommend that a professorship of military medicine be established in the different reputable medical colleges of the United States. It seems to me that this would be a great step towards approaching perfection in military medicine and surgery. The different branches of these subjects, including hygiene, transportation of the sick and injured, the management and organization of field hospitals, red tape of the service, etc., could be taught in a course of lectures extending over one year.

Even though the knowledge thus gained were never used in army service, it would be no burden and would prove useful in civil practice. The knowledge of red tape acquired would give the student an insight into methods which would be of some benefit to him in conducting his ordinary business affairs. When the tocsin of war sounded again it should find the medical profession, as a body, ready to tender its best assistance, without the preliminary training which is now required in order to do effective work.

In the late war our profession as a whole did noble and efficient work, and whatever may have been lacking in its effectiveness was not due to ignorance or incapacity as far as ordinary professional duties were concerned, but to inexperience in military medicine. It has been suggested that the National Government establish a medical school for army surgeons, including militia surgeons, to train physicians for the army. This is unnecessary, as the course now given in Washington to regular army surgeons before they enter their career is sufficient. In any great emergency, such as the Civil War and the one through which we have just passed, volunteer surgeons must be depended upon for their share; they cannot devote the time to take a course at some special school remote from their homes, and the method I advocate would be in conjunction with their regular medical training. The advantages of this system are obvious. The country would then have a large body of doctors fitted for the medical service ready at short notice. Until such a system is inaugurated, in fact well established, there should be a course given to medical officers of the National Guard in medical schools or post-graduate courses, the latter consisting of at least thirty-six exercises in the form of lectures, or one a week for the school year. A school like Harvard could give one or two exercises a week in its regular course, or the State could provide for instruction in post-graduate schools. This system would give an opportunity to medical officers to derive decided benefit from connection with the militia. At present the advantages are not professional but almost purely social, excepting perhaps the slight experience derived from practice at State camps. By strict entrance examinations, embracing general medicine and surgery, the Massachusetts Volunteer Militia has maintained a high standard in its medical department, and it is the hope of the writer to see the whole service of the National Guard brought to the same or even higher degree of efficiency, by suggestions recommended in this paper.

I quote from the late Surgeon-General Forster: "Voluntary examinations of recruits are maintained in some commands; to secure the greatest efficiency of our State troops, such examinations should be mandatory with all, and I so recommend." To establish company bearers as part of the militia system of the State, he requested the following paragraph to be incorporated in general order No 6:

"Company commanders, with the concurrence of the senior medical officer of the command, will designate four privates for instruction as litter bearers. They will be known as 'company bearers' and shall be instructed under the supervision of the medical officer (senior) at least one-half hour daily while in camp and at such other time during the year as the commanding officer may deem advisable, in the duties of litter bearer and the methods of rendering first aid to the sick and wounded. This special instruction will not relieve them from the performance of all regular (their) military duties. They will give first aid to the sick or wounded or carry them to the rear until relieved by members of the ambulance corps or a medical officer. When so relieved they will immediately join their companies.

"When on duty where their services may be required they will wear a distinguishing mark — a red brassard around the left arm, just above the elbow."

Our present surgeon-general has well sustained the record of his predecessors. His earnestness and zeal in seeing that his medical officers were well supplied with everything needed in their department will always be kindly remembered. His motto, "There is nothing too good for Massachusetts soldiers," has been lived up to in the present campaign.

In his recommendations this year Surgeon-general Blood says: "I would recommend that each Massachusetts Regiment of Infantry, M. V. M., have one surgeon with rank of major, and two assistant surgeons with rank of first lieutenant." In case this increase is made, the extra surgeon could be selected for his surgical ability.

"Of the nearly nine thousand troops at one time or another encamped at Framingham during the summer, only one serious case of illness occurred. This seems a remarkable record, in view of the great amount of sickness of the United States Volunteer soldiers in Camps Alger, Va., Thomas, Tenn., and in camps in Florida. This, I believe, can only be accounted for by the supposition that the sanitary conditions were better at Framingham than at the camps mentioned, and that there was a better supply of pure water; this was probably true." [2]

Emergency lectures following the course adopted by the Massachusetts Emergency and Hygiene Association have been given with more or less regularity to the different organizations of the militia the past seven or eight years. The Association has furnished skeleton charts, etc., in fact everything required for a course of instruction in first aid to the sick and injured; it has also furnished diplomas to soldiers who have passed satisfactory examinations and have been recommended by their medical officers. Too much praise cannot be given this noble Society for its good work. Prevention of much suffering and even loss of life amongst Massachusetts militiamen were due to the instruction received in first aid by the militia of the Commonwealth. Dr. Otis H. Marion has done much to advance this work in the militia.

To this course I would add instruction in camp hygiene, the prevention of contagious disease, etc., embracing policing of camp; personal cleanliness; the importance of reporting venereal disease to prevent its spread by drinking vessels and other means; care of water supply to prevent pollution; bathing, clothing, ivy-poisoning, and kindred subjects.

No rules and regulations to prevent disease can be carried out without the intelligent co-operation of officers and enlisted men. An officer high in command in United States Volunteers told me that he saw a soldier lying on the ground and drinking from a stream that had been contaminated nearer its source by washing, bathing, etc. There was no need of this individual endangering his health by drinking from the polluted stream; there was an abundant supply of pure water in each regiment. Such reckless individuals form a small part of the volunteer force; the great majority are earnest, patriotic men who are anxious and willing to learn and practise everything which conduces to their physical welfare. For years I have believed in the importance of individual instruction to officers and men. With this end in view I advocated and, with the permission of the Surgeon of the Ninth Massachusetts, gave instructions to officers and men in the above-mentioned subjects. Each day the members of one company were instructed until the twelve companies of the regiment had been educated on these important matters. The fact that disease was more to be feared than bullets was impressed on their minds and with good results. In two months' service in this country there was not a single case of typhoid in this regiment; in fact I don't think it can be justly said that Massachusetts brought any of the typhoid cases to the South.

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[2] Surgeon-General's Report, 1898.

This Ninth Regiment, according to Leutenant-Colonel Weaver, the regular army officer who mustered it into the United States service, was an exceptionally fine body of men physically. Every care was taken to prevent disease, but while in Cuba the hardships during the siege of Santiago were so great that it was impossible to carry out measures for the prevention of disease.

Since writing this paper I have seen various quotations in newspapers and medical journals from high medical authorities, advocating the education of line officers in matters pertaining to camp hygiene. I have the satisfaction of knowing that I have not only advocated but have practised it in the late war and with results that have fully demonstrated its importance.

The ration must be improved upon and adapted to the tropics. Expansion means an army in tropical regions, and consequently it will have to adapt itself to the surroundings. This hardly comes within the scope of this paper. No doubt the military experience of our troops in the Philippines, Porto Rico and Cuba has taught this lesson, and in the near future we shall probably see a ration adopted that will fully meet the demands. The United States Army ration as it stands to-day has stood the test of experience for many years in this country, and I believe gave good satisfaction in camps of instruction.

By direction of President McKinley a special order regarding the food supply of the United States Army in the tropics was recently sent to commanding generals at Manila, Havana, Cuba and San Juan, in order to determine what alterations, if any, in the established rations would be conducive to the better health of troops serving in tropical countries. Each of these officers is directed to institute a board of three officers serving respectively in the line, medical and subsistence departments, to examine into the subject of any desired changes in the ration for the troops serving in his command, and to cable the results of such inquiry to the Secretary of War. It is fair to presume that this will result in great improvement in rations for our troops in tropical climates.

For many years this State has maintained a well-organized ambulance corps under the command of an able and efficient officer.

The commencement of hostilities found this Government with no provision made to take this or other like organizations into its service.

To prevent the possibility of again losing the valuable services of such well-trained men, I would suggest that one or two men be detailed from each company of each regiment for instruction in ambulance corps. I would also deem it advisable to consider the value of a corps of trained female nurses in connection with the militia.

Perhaps there is no position in the army more unsatisfactory than the surgeon's; he has no power to command; everything must be done with the approval of his commanding officer; he is censured for the health of the command, when perhaps he has made every effort to do his duty. Certainly this State has a medical service of which it can feel proud. The examinations for admission to the medical department of the Massachusetts Volunteer Militia since 1874 have been very strict, embracing the following subjects: anatomy, physiology, chemistry, materia medica, theory and practice, surgery and hygiene. To this has been added a physical examination. Our staff is composed of men who have been tried and found successful in their chosen profession; they have given to the work the requisite time and study which it demanded. And will you believe that their training has been for naught? That those who have studied and prepared themselves for this emergency have failed? To believe this is to be unreasonable and disloyal to our profession. The volunteer surgeon who was experienced in military medicine before the war, who was earnest in his calling, could not fail to do good work when summoned to active service.

Considering the fact that the present generation of medical officers has seen no active service, that the large volunteer army was raised at such short notice, it is not surprising that there was something lacking at its management.

The total number of deaths reported in our army, including regulars and volunteers, from May 1st, 1898, to April 30th, 1899, is 6 406. Of these 5,438 died of disease, and 968 were killed in battle or died of wounds, injuries or accidents This statement makes a great impression as to the danger of disease rather than of bullets; but it is only fair to consider that an army of nearly a quarter of a million of men was exposed to disease for twelve months, where only a small portion of this army was exposed to bullets for a few months. However, considering this, it shows that the prevention of disease is a very important consideration in dealing with the health and effectiveness of an army. Had the entire army been engaged in active warfare, of course the percentage of deaths from wounds would have been much greater.

Petty bickerings between regular and volunteer surgeons, trying to shift responsibility from one to the other, only tends to lower both in the eyes of their fellow practitioners and the laity. Let them come together even more closely than formerly. Let them work together for the public good and remember above all things that they are members of the same profession. To say that regular army surgeons are not bright and intelligent physicians as a class is unreasonable. The examination that they pass for admission to the medical corps is sufficient to guarantee this; to say that volunteers are ignorant and inexperienced is to belittle the whole profession and degrade it in the eyes of the people. They both are lacking in some qualifications to make the best type of medical officers; many of the volunteers are lacking in military medicine, particularly as regards red tape, etc., and the regular in experience in general medicine and surgery. The combination of the regular and volunteer would make the ideal medical officer. If the regular profits by his experience in this war, and the volunteer by his, and they work together harmoniously in the future, the question of good army medical service will be solved. Let us not give way to personal feelings, criticising physicians who have done the best they could under the circumstances, and who have perhaps done better than we could under the same conditions. Let us note our imperfections and try to improve the service for those who succeed us. Contributions furnished by experience will be a great aid to our successors. Exaggerated and sensational accounts of mismanagement do no good.

Some of the important improvements in our State service the past five years are as follow:

(1) Physical examination of recruits; at first voluntary and now made mandatory.

(2) Ration to be used at camp. Something after the pattern of army ration, but modified for adaptation to State service.

(3) School for medical officers. One session annually.

(4) Company bearers; four privates in each company specially trained in emergency and first-aid work.

(5) System of red tape patterned after regular army, but modified for State service.

I have merely touched upon certain suggestions which could well bear elaboration, but time and space forbid.

The following is a brief *résumé* of the suggestions offered to improve the efficiency of the army medical service. Some of them have been practically adopted by the Massachusetts Volunteer Militia, and it is hoped will be adopted by the entire National Guard:

(1) That professorships of military medicine be established in every reputable medical college.

(2) That until such time as professorships are established, the State provide a course on required subjects.

(3) That physical examination of officers and men be made mandatory.

(4) That troops at State encampments conform as nearly as possible to duties required in service on the field.

(5) That every medical officer receive commission. (This pertains to contract surgeons.)

(6) That one or more men in every company be detailed for regular instructions in ambulance corps, to prevent possibility in the future of the country losing the service of men especially trained for this service.

(7) That one medical officer be selected in each regiment or brigade for his surgical ability.

(8) That a corps of trained female nurses be organized in every State.

(9) That divisional hospitals, in the broad sense, be abolished, and that small brigade and divisional hospitals be established for special cases, such as surgical and contagious.

(10) That the volunteers follow, as closely as practicable, the regular army, so that when called into service together the two branches may work in harmony.

(11) In addition to the present instruction in "first aid," a course in prevention of contagious diseases, etc., be given.

(12) That a reserve staff of medical officers be formed in each State; said staff to be composed of ex-members of the medical department of the National Guard.

Clinical Department.

UNUSUAL DIASTOLIC MURMUR, WITH AUTOPSY.

BY RICHARD E. EDES, M.D.,
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AND
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The following case seems worthy of record as helping to throw light on the causation and character of aortic murmurs, as well as for the other uncommon pathological conditions present.

The patient was a business man of active life, married, fifty years old, short and rather stout. No alcoholic or venereal history. Sciatica about five years, and a ruptured varicose vein about three years previously, during which sickness his physician said nothing to him or his family about the existence of heart trouble. About a year previously he lost most of his sleep for a few nights on account of pains resembling muscular rheumatism in his right shoulder, arm and forearm, but these practically all disappeared and did not return.

On February 18, 1899, he realized that something serious was the matter with him, having had a very restless and uncomfortable night, and complaining also of a "scraping" in his chest. This he said he had felt for about six months, but had thought to be only bronchitis! Some weeks previously he had had an attack of dyspnea after climbing stairs, but had soon recovered; and again, during the heavy snowstorm on February 13th, he had nearly collapsed between the train and his house, one-quarter mile, and had been feeling rather poorly since, although going actively about. His breathing on the nights of February 17th and 18th, as described by his wife, was Cheyne-Stokes.

A hasty examination gave a loud "scraping" murmur and thrill at the base of the heart, seeming systolic at first, as it was accompanied by a heave in the apex region, although by no definite apex beat which could be felt.

Further study developed the following picture: The apex beat could be felt very feebly at times in the sixth interspace, one inch outside the nipple in the dorsal position, and in the left side position quite distinctly a trifle further out. The heave was diastolic, very marked, and at times a distinct diastolic impulse, alternating with the true apex beat and with the carotid pulse, could be felt in the fourth and fifth interspaces inside the nipple. The heart dulness was enlarged, corresponding to the position of the apex, and the lower sternum was duller than normal. Later the lower sternum became quite flat to percussion and dulness extended about one-half inch to the right.

The liver was slightly enlarged. Two murmurs, a systolic and a diastolic, were heard all over the heart area; the systolic blowing, slight at the apex (where a slight but sharp first sound was heard), very distinct at the base, louder in the first right interspace, and loudest just above the inner end of the clavicle, where it became louder than the diastolic murmur and was accompanied by a systolic thrill and an impulse much more marked than above the left clavicle. There was no especially strong pulsation in the suprasternal notch. The diastolic murmur was heard all over the chest, loudest at the second right interspace, and could be heard without the stethoscope three or four feet away from the patient. It was accompanied by a powerful diastolic thrill felt all over the upper front chest. The character was best described as "scraping," although at times it was almost musical. It never intermitted or very markedly changed in character or intensity. The pulse, averaging about 92, was a fairly marked water-hammer, fairly strong, with an occasional occurrence of *pulsus intercidens*. A sphygmographic tracing showed the same characters, with so sharp a rise as to make any marked degree of stenosis very improbable. There was no marked arteriosclerosis of the brachials, radials or temporals.

The course of the disease was steadily but slowly downward, with a much congested liver, edema of legs, distressing attacks of orthopnea at times, congestion of veins of neck, and gradually rising average rate of pulse. About one month before death, which was on May 21st, the right radial pulse became distinctly weaker than the left and remained so, and about this time a dulness not detected before was made out, involving the upper sternum and a bit of the first interspace to the right. A slight hoarseness on March 11th, lasting about a week, seemed to be of inflammatory origin, as the temperature was slightly elevated on the first day. The Cheyne-Stokes breathing became more frequent but not constant, and the death was one of exhaustion and gradual failure. There was practically no pain at any time.

The autopsy showed the following conditions: There was marked passive congestion of liver, spleen and kidneys; moderate hydroperitoneum, hydrothorax and hydropericardium; arterio-sclerosis was not general. The heart was moderately hypertrophied (415 grammes), with quite an amount of epicardial fat, the left ventricle and left auricle considerably dilated, and the heart muscle showed marked fatty degeneration. The coronary arteries showed no changes, except just at the beginning of the left, where there were one or two yellowish non-calcareous patches; these did not seem of sufficient importance to cause the failure to compensate. The aortic valves were distinctly but not extremely incompetent, the circumference being nearly normal (8.4 centimetres) and the leakage being due to a shortening of the anterior cusp. Just above the junction of the anterior and left posterior cusps was an aneurismal pouch 1.2 by 2 centimetres in diameter and 1.6 centimetres deep, the edges slightly overhanging, containing no thrombi. The orifice of this cavity was in contact with the anterior cusp of the valve, which was somewhat shortened thereby, giving rise to the incompetence just mentioned. At the junction of the anterior and left posterior cusps there was a small area of subendocardial hemorrhage. The bottom of the aneurism was opposite the left auricle, the endocardium of which was thickened at this point over an area three centimetres in diameter. The aorta showed a dilatation of the arch and descending portions. This dilatation was most marked in the ascending and transverse portions of the arch and gradually diminished to a point opposite the second intercostal arteries. At a point four centimetres above the aortic valves the circumference of the aorta was 13.5 centimetres. Calcareous plates were very numerous and over some of them the intima had entirely disappeared, leaving small, roughened, blood-stained areas. There were also seen a few flattened areas, non-calcareous, but containing a soft yellowish material.

The orifice of the innominate artery measured two centimetres in diameter; one centimetre above this orifice was a sacculated dilatation 3.5 centimetres in diameter, to one side of which adhered a firm grayish-red thrombus. This aneurism extended up to the division into carotid and subclavian, which vessels were compressed by the thrombotic mass. The vessels, however, were pervious.

In the right auricle, occupying the auricular appendage and extending into the auricle proper, was an adherent mass five by three centimetres, grayish red on surface, on section showing a softened centre of yellowish, granular material. Right side of heart otherwise negative.

In regard to the interpretation of the clinical signs by the pathological findings, the weak right radial pulse was of course due to the innominate aneurism. The systolic murmur and thrill were probably also produced in this aneurism or possibly in the opening between it and the aorta. It will be noted that no aortic stenosis was present.

In regard to the dulness of the upper sternum and first right interspace detected about a month before death, it would seem as if some change must have taken place during the course of the disease, consisting either of an enlargement of the innominate aneurism, of increased congestion of the innominate veins, of more careful percussion, or perhaps of all three.

Now as to the most marked feature of the case, the unusually loud and rough diastolic murmur, was it caused by the aortic aneurism alone, by the incompetent valve alone, or by the combined effects of the two? To the first hypothesis is opposed the great difficulty of explaining why the effect of the systole and diastole should be so different. As to the second, loud diastolic murmurs are mentioned by a number of authors (Bramwell, Gibson, Broadbent, Steele, and others), and a number of cases are on record. In those cases, however, which do not have a special cause for the loud murmur, such as a torn valve flap, etc., the murmur is generally musical, or intermittent, or both. All, or nearly all such cases, show extensive arterio-sclerosis, as did this case in the aorta and some of the large vessels. It would seem then reasonable to expect to find in each case of rough diastolic murmur a special cause over and above a leaky valve. In this case the mode of production of the murmur may be imagined in this way, that the regurgitant blood current, instead of flowing smoothly through the valves, causing fine vibrations and a soft murmur, formed a whirlpool in the small aneurism, becoming turbulent just at its passage through the valves, and thus giving rise to coarse vibrations and a loud, rough murmur. It is probable that the dilated and sclerotic condition of the aorta had some influence on the character of the murmur. In this connection it is interesting to note that in 22 cases of aneurism of the sinuses of Valsalva,[1] a location slightly nearer the semilunar valve flaps than in our case, no instance of rough, diastolic murmur occurred.

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[1] Reported by Cattell and Steele: Pathological Society, Philadelphia, vol xviii, 1898, p. 203, et seq.

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Medical Progress.

REPORT ON MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D.

THE FINER CELL CHANGES IN MENTAL PATHOLOGY.

Angiolella[1] has made a careful review of the finer changes in the nerve cell in various forms of mental disease. He maintains that the basis of a normal and pathologico-anatomical psychology is but just beginning to appear on the distant horizon and that the secret of life and its various functions must be sought in the study of the single cell elements, and their chemical constitution. The change which this constitution undergoes in the various functional states and pathological operations is to be applied to the physiology of the nervous system and is beginning to give results. The method of Golgi has permitted us to realize immense progress in our knowledge of the normal morphology of the nerve cell and to recognize some slighter pathological changes, such as the atrophy and hypertrophy of the protoplasmic processes and alteration in the shape of the cell body; but Nissl's method has permitted us to recognize the intimate changes in the cell. Among these, the most important are the various changes of chromatolysis, that is, the dissolution and gradual disappearance of the chromatic substance of the cell, which is one of the most frequent and best recognized alterations in various pathological conditions. In all degenerative processes this substance is the first to feel the injury of disturbed nutrition and to be altered by it. Since it is known that organic molecules of the highest and most complex chemical constitution and the highest biological signification are the most susceptible to injurious influences and the first to feel their effects, it is fair to suppose that this chromatic substance, Nissl's bodies, is of the highest importance in the constitution of the cell body as producing, accumulating or directing nervous energy. Along with the dissolution of the chromatic substance go alterations in the fibrillary reticulum, with alterations in the shape of the cell body, dislocation of the nucleus and complete destruction of the cell.

Researches upon cases of mental disease are as yet few, and the changes thus far have been found only in general paralysis, some cases of terminal dementia, epilepsy, pellagra and acute delirium. Cases of mania, melancholia and even of paranoia are apt to die either in a stage of terminal dementia or of some intercurrent disease. Experimental research, however, has given us important aid in the study, especially by investigations on poisoning of animals by alcohol and lead, auto-intoxication, infection, exhaustion, and the like. In all these conditions we find degenerative changes of the nervous elements, and the logical deduction is that similar changes may occur in man under the same morbid influences and that these changes may have relation to the functional disturbances which are seen in these conditions. The excitement or the hallucinations of the alcoholic patient, perhaps the paranoia and the pseudo-general paralysis of chronic alcoholism, the delirium of typhoid and pneumonia, the nervous and mental disturbances of uremia and diseases from auto-intoxication, and the psychoses from exhaustion, deprivation of nutritive material or excessive nervous worry and defective repair may to-day be put in direct dependence upon the nutritive and morphological alterations of the nerve cell, and especially the cerebral nerve cell. We are also led to believe that ordinary mania, melancholia, sensory delirium, and the epileptic attack may be occasioned, in predisposed subjects, by the action of toxic products upon the system and the nervous elements; so that alcoholic excitement, for example, may have the same pathogenic mechanism as the ordinary maniacal attack and may differ from it only in the nature of the poisonous substance.

The conception of a psychosis without a corresponding material change may fairly be banished from our knowledge. We do not yet know why, under the action of the same or different poisons, the forms of mental disturbance are so varied, while the cell alterations are nearly uniform. We are still ignorant if the various methods of alteration and degeneration have a special significance in producing the varied forms of functional disturbance or if the production of morbid phenomena varies in relation to the prevalence of one or another form of degenerative process with the different localization of the lesion or with the individual temperament. We are still ignorant if the diversity of temperament varies with the different composition of the cell element or the varying behavior of the elements to the same stimuli.

ACUTE PSYCHOSIS IN COPROSTASIS.

Sölder[2] reports six cases presenting the symptoms of acute delirium associated with intestinal disease. A previously healthy individual is suddenly or rapidly attacked with symptoms of violent mental disturbance, without reasonable cause, and after some indifferent prodromes, lasting a few days. The mental trouble began with confusion, a loquaciousness, a rapid flow of ideas, an expansive and excited emotional condition, soon followed by a clouding of consciousness and agitation, which rapidly sunk to symptoms of motor irritation of the simplest sort, grimacing and various automatic movements. The speech became incoherent and there was a tendency to verbigeration; there was sleeplessness and failure of nutrition; the temperature was not elevated. The physical examination was negative. Constipation existed in all the cases; death followed in ten to fourteen days. The autopsy showed hyperemia and edema of the brain, marked congestion of the lungs, parenchymatous degeneration of the kidneys, heart and liver, and marked coprostasis in the large intestine, with alterations in the intestinal mucous membrane. The history showed that the constipation preceded the mental disturbance, which was regarded as a result of it; and the author concludes that an acute psychosis may be the result of coprostasis and may run a course similar or identical to that of acute delirium, causing death by weakness of the heart in one to two weeks. One case recovered after complete emptying of the intestine. The author reviews the theories as to the relation between the intestinal trouble and the mental disturbance. The old theory of hyperemia of the brain is not regarded as a sufficient explanation, although hyperemia is usually present. We know too little of the symptoms due to hyperemia, and in ordinary hyperemia, due to disturbances of the circulation, acute delirium does not occur. The second theory is that the trouble is due to an invasion by some form of bacteria, and, in a few cases, bacteria have actually been found in the blood, the urine, and even in the cerebro-spinal fluid. The third theory, to which the author is disposed to ascribe the greater weight, is that of auto-intoxication from the intestine, although he failed to find acetone in the urine in any case and an excess of indican in but one.

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[1] Annali di Nevrologia vol xvi., page 362.

[2] Jahrbücher f. Psych, vol. xvii. p. 174.

Galante[3] reports two cases, with the following conclusions, from the work based upon the researches of Bianchi and Piccinino. Among the psychopathological forms which are confused with acute delirium is one which may be called acute bacillary delirium, which is distinguished from the rest clinically by a greater intensity of the phenomena, by a dynamic phase, which rapidly succeeds the period of excitement, by the very short course, and by the fatal termination; bacteriologically by the presence in the blood and nerve centres of a special bacillus. There are forms of acute sensory delirium, with a febrile course, where the delirium is due to the fever and not to the action of a bacillus. The true bacillary delirium must be regarded as a grave infectious disease, and cannot be certainly recognized without an examination of the blood. Other forms of acute delirium and grave mania may show micro-organisms in the blood, but in smaller quantities and not of the specific type. Galante therefore concludes that these cases of coprostasis are due to the intoxication rather than to any micro-organism from the intestine, which conclusion is strengthened by the fact that in one case, after thorough intestinal evacuation, the symptoms of delirium disappeared.

Ceni and Ferrari[4] have held that the various micro-organisms found in acute delirium represent only a secondary infection, chiefly of intestinal origin and cannot have a definite etiological value. They have studied the blood in 18 cases of mental disturbance of various sorts presenting severe symptoms. In seven cases they obtained positive results in their bacteriological researches. Of these, one was in the status epilepticus, five were cases of severe mania, and one was in the maniacal stage of general paralysis. In all of these seven cases there was considerable elevation of temperature. In each of the cases where there were positive results a pure culture of a micro-organism, which remained constant in the individual, could be isolated. In five cases streptococci were found; in the other two varieties staphylococci were found. From these researches they conclude that severe maniacal excitement, with a clinical aspect analogous to acute delirium, and also marked mental confusion as observed in the status epilepticus, are attended with micro-organisms in the blood only when accompanied by fever. The presence of fever and the course and termination of the disease have no relation to the form of micro-organism but only to the degree of its virulence.

RETROGRADE AMNESIA.

Paul[5] reports a case of retrograde amnesia coming on after puerperal eclampsia, which began on the 14th of December, the patient remaining unconscious for six days; after that there was a condition of confusion, with hallucinations for a considerable period and an hysterical condition which lasted for a number of months. With this there was a marked loss of memory extending backwards to the 1st of October. She knew nothing of the eclampsia or of her hallucinations; later on the amnesia extended backwards to the month of May. The former amnesia was regarded as of eclampsic origin and the latter of hysterical. After a careful study of reported cases, he concludes that the symptom of retrograde amnesia is comparatively common as the result of an hysterical attack, and it may occur in epilepsy and puerperal eclampsia and also after injuries to the skull and in those restored to life after hanging. It may also be due to poisoning by carbonic oxide or alcohol. In all these conditions there is the one common fact that a change of consciousness precedes the amnesia; an alteration of consciousness, without a loss, in hysteria, and a varying loss of consciousness in the other conditions. The cause of the change of consciousness in hysteria is usually some emotional disturbance. In the loss of consciousness in epilepsy and eclampsia, and in hanging, the cause is probably due to a change in the circulation. In injuries to the head it has been referred to the concussion of the brain, and in the poisoning to the amount of the poison. We are wholly ignorant of the nature of the process or of the nature of the occurrence of this symptom.

EXHIBITIONISM.

Seiffer[6] reports seven cases from Hitzig's clinic and has collected 75 other cases in men and 11 in women. Of the men, 18 were epileptics, 17 dements, 13 degenerates, eight neurasthenic and eight alcoholic. In only two of the epileptics was any consciousness of their acts present. It is probably more common among the insane than the statistics show, because most of them are confined in an asylum, so that their acts are not so prominent and do not lead to public scandal. In the reported cases there is a striking similarity in the acts. It is found in all classes of society and at all ages, although very rarely in women. In the majority of cases there is a disturbance in the mental condition which renders them irresponsible.

TUBE FEEDING AND SCURVY.

Klein[7] has made a careful study of the relations between long-continued tube feeding and scurvy, reporting three cases, two of which terminated fatally, in which scurvy developed during long-continued tube feeding; in the third case, the scurvy disappeared after giving meat and lemon juice. He concludes that the special cause of scurvy is to be found in the form of nourishment. The other etiological factors play at most a secondary part. In his own cases it seemed extremely impossible that the invasion of micro-organisms led to the outbreak of the disease, but a secondary invasion is almost certain to occur. The active prophylaxis of scurvy is to be found in the sort of food given, and the form of treatment must be chiefly dietetic; fresh meat, fresh vegetables and lemon juice are to be regarded as the active agents in restoring health. In asylums, not only with patients who refuse food absolutely and must be fed by the tube, but also in patients who are insufficiently nourished, or who, on account of their delusions, limit themselves to certain classes of food, we must always consider the danger of scurvy and guard against it by appropriate diet.

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[3] Annali di Nevrologia, vol. xvi, p. 357.

[4] Riv. Sper. di Fren, vol. xxiv, p. 182.

[5] Archiv f. Psych., vol. xxxii, p. 251.

[6] Arch. f. Psych., vol. xxxi, p. 405.

[7] Monats. f. Psych., April, 1898.

ACUTE PERIODIC PARANOIA.

Giannelli[8] considers the question of an acute hallucinatory periodic paranoia. Acute paranoia must represent an abbreviated form of chronic paranoia. It must be a systematized delusional state, beginning more or less suddenly and accompanied, or not, by hallucinations. When there is no bond between the delusional ideas there is no paranoia. The exaggeration of personality is not sufficient to warrant us in affirming the existence of an acute paranoia, which must be clearly separated from mental confusion.

Giannelli is unwilling to accept the position of Ziehen, who seems to think that it is sufficient to formulate a diagnosis of paranoia if we can confirm the co-existence of sensory hallucinatory disturbances and delusions. The symptomatology alone is not sufficient for classification. We must keep in mind the association of symptoms and their succession in order to differentiate those morbid forms which should be kept distinct notwithstanding many points of contact. The existence of an acute systematized insanity of a periodic course does not seem to him proven by the cases thus far reported.

GENERAL PARALYSIS.

Mendel[9] raises the question whether in the last ten years the clinical picture of general paralysis has undergone any changes. Calmeil in 1826 claimed that melancholic conditions were extremely rare, but in 1859 he asserted that the melancholy form was almost as common as the delusions of grandeur. Mendel himself, in the thirty years in which he has studied general paralysis, has been struck especially by the fact that the typical form of general paralysis has become much less common than the demented form. In the older observations the typical form was seen in more than half the cases, and Mendel himself in 1880 had found it 55 times in 180 cases. In the last eight years, however, it has been found only 24 times in 194 cases. The delusions of grandeur, even in the typical form, are by no means so excessive as they formerly were. In 1880 Mendel had noted the demented form in 37 cases, whereas in the last eight years it had been noted in 70. The frequency of the demented form, moreover, Mendel thinks, would be still more evident if we were to take into consideration the no small number of these cases who, on account of their quiet condition, are not obliged to be sent to an asylum and are seen only in private practice or in general clinics. This change can hardly be due to improved methods of diagnosis, since the time has been so short. A second change, which of late years has been striking, is the comparatively frequent occurrence of considerable remissions, although accurate statistics are lacking to prove this point. They occur, however, in a number of cases which have presented marked mental and physical symptoms and also in the early stages, and may last for a year or more. The course, in general, seems somewhat milder, but, on the other hand, the disease is much more frequent and is noted more often in women. In 1859 Neumann claimed that general paralysis occurred only in men, but at the present time one-fifth of the cases are found to be in women. The number of cases in children also shows a marked increase, and in children the disease is about as frequent in girls as in boys. The cause of the increase is attributed to the increase in the amount of syphilis and in the increased struggle for existence; and Mendel refers the increase of the disease in women to their increasing participation in the social struggle and the so-called "emancipation" of the sex. The cause of the change in form is obscure. He does not regard it as due in any way to previous antisyphilitic treatment, since there seems no change in the cases which have been thoroughly treated and those which have not; nor can it be explained by an earlier commitment to an asylum and better treatment; neither does he consider that our brains in the last twenty-five years have become less capable of resistance and are no longer capable of maniacal exaltation, and that the change therefore is not due to an increasing degeneracy. It may possibly, however, be due to some change in the syphilitic poison.

(To be continued.)

Reports of Societies.

AMERICAN ORTHOPEDIC ASSOCIATION.

Thirteenth Annual Meeting, held in New York, May 31, June 1 and 2, 1899.

(Concluded from No. 6, p. 142.)

THE KYPHOTONE — A MACHINE FOR THE FORCIBLE CORRECTION OF THE DEFORMITY OF POTT'S DISEASE.

Dr. R. Tunstall Taylor, of Baltimore, exhibited this instrument, which was intended to make traction backward on the trunk and spine during the application of the plaster jacket. The advantages claimed for it were: (1) The spine was fixed in the most advantageous position; (2) the rapidity and ease with which the jacket could be applied; (3) its applicability to cases of mid-dorsal, lower dorsal and lumbar caries; (4) the removal of the superincumbent weight from the diseased articular processes, and (5) the inexpensiveness of the apparatus.

SOME NEW TRACTION APPARATUS.

Dr. Taylor also exhibited and described a new traction apparatus, characterized by simplicity of construction and provision for sterilization and securing the highest degree of cleanliness. His folding steel apparatus for making extension with weight and pulley and inclined plane was especially worthy of commendation.

A SUMMER PLASTER-OF-PARIS JACKET.

Dr. Taylor and **Dr. S. H. McKim** also exhibited a method of making plaster jackets by means of figure-of-eight bandages, so as to leave a considerable area anteriorly exposed.

CELLULOID JACKETS.

Dr. Augustus Thorndike, of Boston, reported that although the celluloid bandages that he had described last year had worked well at first, he had subsequently been much disappointed with the process.

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[8] Jahrbücher f. Psych., vol. xvii, p. 144.
[9] Neur. Central., Nov. 15, 1888.

Drs. **Sherman** and **Townsend** said that they had a like experience with the working of celluloid.

Dr. **R. H. Sayre** said that he had learned that it was better to work with sheets of celluloid, placing them on a wire tray in a shallow box, and exposing them for three hours to the vapor of acetone. A thorough and uniform action of the acetone was best secured by soaking sheets of blotting-paper in acetone and laying them under the tray supporting the celluloid sheets. After the sheets had been sufficiently softened, they were to be applied to the mould and fastened with either muslin or rubber bandages. In this way a beautiful corset could be made, but it was so intolerably hot that the patient would refuse to wear it, and this too, even after holes had been provided for ventilation.

Dr. **E. G. Brackett**, of Boston, said that his experience had been that if the celluloid were taken off the mould before the expiration of two or three weeks it would surely curl up.

FURTHER OBSERVATIONS ON THE TREATMENT OF CONGENITAL DISLOCATION OF THE HIP.

Dr. **Royal Whitman**, of New York, read this paper and exhibited quite a large number of patients that had been treated by him. He had operated 32 times on 21 patients by the bloodless method, and all had been treated more than two years. Of the 19 open operations that he had done, 15 had been in the present year. There had been no operative infection of the wound, and no deaths. Under proper conditions he considered the open operation to be free from danger and easy of performance. He had treated in all 41 cases, 27 of them by the functional method of Lorenz. On seven patients both methods had been used. Of the 14 unilateral cases, nine had been treated by forcible correction, and when this had proved unsuccessful had been supplemented by the open operation. He had had three perfect cures by the bloodless method, and had obtained an excellent result by this method in a girl of seven years, although it was ordinarily not very successful in these older children.

CONGENITAL DISLOCATION OF THE HIP.

Dr. **T. Halstead Myers**, of New York, exhibited a child of three years upon whom he had successfully operated in 1895 by the bloodless method. He had since that time treated 15 other cases in the same way. Five of these would probably yield a perfect ultimate result; in three the treatment had failed.

Dr. **Ridlon** said he could not agree with Dr. Whitman concerning the great disability observed in cases of congenital dislocation of the hip, as the adult patients whom he had seen had been able to walk fairly well, though not gracefully. In the majority of instances they could walk fairly long distances with comparative comfort.

Dr. **B. E. McKenzie** said that he had employed the bloodless method in two, and the open operation in one case. He had operated upon a child of nine years, and there was every prospect of a good result ultimately.

Dr. **L. A. Weigel** said that radiographs of these cases seemed to indicate that there was an arrest of development, not only of the femur, but of the whole side of the pelvis.

Dr. **H. A. Wilson** said that it was not at all uncommon for orthopedic surgeons to meet with adults in whom the functional condition was good, and in view of the mortality and the anchylosis attendant upon the open operation, it was well to counsel conservatism in this class of cases.

Dr. **Sherman** said that these children were usually brought to the surgeon not because of disability or pain, but because of the ungraceful gait. Dr. Whitman's results were infinitely better than anything that had been shown him in Vienna by Lorenz four years ago, and were encouraging to the highest degree.

Dr. **Whitman** reiterated the statement that these patients did suffer pain and presented a relative disability. Intermittent force in young subjects would best bring down the head of the bone.

SYMMETRICAL ENLARGEMENT OF BOTH LEGS FROM POSSIBLE LYMPHANGITIS.

Dr. **S. Ketch**, of New York, presented a patient exhibiting this condition, which he attributed to the occlusion of the deep lymphatics.

Dr. **W. R. Townsend** exhibited a photograph of a case in which there was a similar enlargement, although confined to one side.

OSTEOMA OF THE FEMUR.

Dr. **Ketch** exhibited a radiograph of such a case.

OBSCURE INJURY TO ELBOW.

Dr. **Weigel** presented a young woman who had injured her elbow in a bicycle accident. He had at first treated her by rest of the joint, and she had done well. She had then come under the care of a physician who had insisted that there was a fracture, and had proceeded to refracture it under an anesthetic, with the very natural result of making the condition worse. A radiograph taken after the accident showed plainly that there had been no fracture.

UNUSUAL DEFORMITY FOLLOWING OPERATION FOR KNOCK-KNEE.

Dr. **W. R. Townsend** presented a girl of thirteen years having a dreadful distortion of her limbs following an osteotomy which another surgeon had done on her in childhood. This surgeon admitted that after the osteotomy the wound had become septic. A radiograph showed that the lower end of the femur had been rotated out at a right angle.

A CASE FOR MUSCLE TRANSPLANTATION.

Dr. **V. B. Gibney** exhibited a boy of six years having an extreme recurvation. He intended to try the effect of transplantation of muscle.

ENLARGEMENT OF TIBIAL TUBERCLES.

Dr. **Henry Ling Taylor**, of New York, presented two cases of this kind, one a boy of twelve, and the other a boy of sixteen years. In the first case there had been no assignable cause; in the second there had been a trauma. In both the periostitis had been relieved by the topical use of iodine.

Several of those present reported similar cases, occurring, for the most part, in athletes.

PARTIAL LUXATION OF THE HUMERUS FOLLOWING ANTERIOR POLIOMYELITIS.

Dr. **J. H. Waterman**, of New York, presented this case. The patient was a youth who had probably had an anterior poliomyelitis of the fifth cervical segment in infancy. Irritation of the pectoralis major produced dislocation of the shoulder.

SPASMODIC TORTICOLLIS.

Dr. Charles E. Thompson, of Scranton, present by invitation, reported this case, and exhibited both this patient and another whom he had cured of the same affection. In both instances several sections of nerves had been demanded before relief had been afforded.

CASES OF TUBERCULAR AND PURULENT ABSCESSES OF JOINTS TREATED WITH CARBOLIC ACID.

Dr. A. M. Phelps, of New York, made some remarks on his work in this line. The essential feature of the treatment was the utilization of Dr. Seneca D. Powell's discovery that alcohol was a perfect antidote for carbolic acid. The carbolic acid was injected into the cavity, allowed to remain for two minutes, and then the cavity washed out first with alcohol, and lastly with sterile water. In every case so treated, except those in which drainage-tubes had been used, primary union had occurred. Moreover the patients so treated had been discharged in from two to five weeks, instead of remaining several months, as they were compelled to do when treated by the more usual methods. Dr. Phelps said that the manner in which the alcohol acted was not yet known, but he suspected that it formed with the albuminates in the mucous layer of the skin a harmless compound, which was absorbed and acted as a powerful bactericide.

Dr. R. H. Sayre said that he was reminded of Callender's work some years ago, with carbolic-acid injected into joints. The method had been abandoned because of the numerous fatalities from carbolic acid poisoning. If this danger could be eliminated, the method just described by Dr. Phelps should have a great future.

MULTIPLE DEFORMITIES OF THE EXTREMITIES.

Dr. George R. Elliott, of New York, reported such a case occurring in a child of eleven years, and apparently the result of either intra-uterine traumatism, or, more probably, primitive changes in the nervous system.

Dr. Edward D. Fisher, of New York, said that this was apparently one of those rare instances of diffuse myelitis occurring during intra-uterine life.

Dr. S. B. Onuff, of New York, said that the fact that the changes in this case were spread over the whole anterior horns seemed to argue in favor of their being primary rather than secondary.

POINTERS ON THE LEATHER SPLINT.

Dr. A. J. Steele, of St. Louis, under this caption described his method of making leather corsets. He said that the ideal leather for this purpose was that which had been only half tanned, but, of course, it could not often be procured. After having softened the leather by soaking in water, he wraps it around the cast, and then by means of a mechanical device binds it on very tightly with stout cord. It is then baked in an oven at a temperature of 180° or 190° F. for two or three days.

Dr. McKenzie remarked that he had found rawhide corsets very useful and exceedingly durable; the chief drawback was that they required two or three weeks to dry.

THIRD DAY.

NEW INSTRUMENTS — AN OSTEOCLAST; A BRACE FOR FLAT-FOOT AND PARALYSIS; A BRACE FOR FORCIBLE EXTENSION AND FLEXION OF THE ELBOW.

Dr. G. G. Davis, of Philadelphia, presented these instruments. The osteoclast was designed for breaking the bone accurately after it had been partially divided by the osteotome. The elbow brace was intended, like the Stromeyer apparatus, to produce forced extension and flexion, and was an improvement on that apparatus in that by a shifting fulcrum a greatly increased degree of flexion could be obtained.

A NEW HEAD SUPPORT.

Dr. S. L. McCurdy, of Pittsburg, exhibited an X-shaped frame, made of heavy steel wire, which he devised as a head rest for cases of cervical caries. Pads were placed at the four points of support, that is, the occiput, chin, sternum and back below the vertebra prominens. Dr. McCurdy also exhibited a new additional chin support.

POCKET GONIOMETER.

Dr. W. E. Wirt showed a goniometer, having telescopic legs, which he carried around in his pocket for a number of years, and had found very useful.

Dr. Wirt also exhibited a

KNEE BRACE FOR CORRECTING DEFORMITY.

It was a simple and cheap instrument which pushed the head of the bone forward while making extension.

THE CORRECTION OF FLAT-FOOT.

Dr. H. A. Wilson exhibited a simple instrument that he had devised for correcting flat-foot by means of force applied by a screw in appropriate directions.

Dr. Weigel saw no advantage in Dr. Davis' elbow brace over the simpler one in which the same object was accomplished by levers placed at the side of the arm.

Dr. Sherman thought Dr. McCurdy's head-support would allow of too great lateral play.

Dr. Whitman advised that the correction of cases of long-standing flat-foot should be accomplished by holding the foot between the knees and subjecting it to extreme abduction.

FRACTURE OF FEMUR WITHOUT THE USUAL SIGNS.

Dr. C. L. Starr, of Toronto, reported a case occurring in a child of three years, in which, although there had been a fracture at a point just beyond the junction of the head and neck of the femur, as demonstrated at autopsy, there had been no pain or the usual signs, and a positive history of limping for only two weeks previously. After the post-mortem examination, the parents recalled the fact that only six weeks before the limp had developed the child had fallen from a high chair.

POSITION SYMPTOMS IN JOINT DISEASE.

Dr. Harry M. Sherman, of San Francisco, presented in this paper an elaborate study of these symptoms and of the various theories propounded to explain the positions assumed. He stated that so far as the theories of Hilton and of Phelps were based on one group of muscles, they must be laid aside. In tuberculosis of a joint some of the osseous trabeculæ are destroyed, and a spot of bony weakness produced, a fact which seemed to be appreciated by the person involuntarily shrinking from putting work on this spot.

SOME SALIENT POINTS IN THE TREATMENT OF HIP DISEASE.

Dr. B. E. McKenzie read a paper with this title. In his opinion no other apparatus had been so successful as the brace of Mr. Thomas and its modifications. Care should be taken to secure sufficient bending at the knee. The tendency in the later stages to abduction could be counteracted and the muscular spasm overcome by the expedient of making traction on the side opposite to the one affected. He had abandoned the idea that the splint should also act as a crutch. Constitutional treatment, as in other tuberculous affections, was indicated. After excision a perfect recovery could never occur; complete restoration of function was sometimes possible after proper mechanical and constitutional treatment.

THE CONSERVATIVE SURGICAL TREATMENT OF TUBERCULOUS DISEASES OF THE JOINTS.

Dr. C. L. Starr, of Toronto, presented, by invitation, this paper. He advised incising and curetting tuberculous cavities, swabbing with chloride of zinc or with carbolic acid, injecting iodoform emulsion and finally packing with iodoform gauze.

ADDITIONAL VIEWS ON THE TREATMENT OF HIP DISEASE.

Dr. A. B. Judson, of New York, presented a paper with this title. His method of treatment consisted essentially in educating the patient to the habitual observance of the normal rhythm of locomotion. As a result of this training, the limb which had been abducted gave up some of its abduction in order to reach the ground more conveniently, with the result that there was a decrease in the apparent shortening.

Dr. Weigel said that if the focus of disease could be definitely located — and it could be at present with the aid of the x-ray — the treatment advocated by Dr. Starr should be successful.

Dr. Judson said that he could not agree with Dr. Sherman that muscular action could be entirely eliminated, for it was this, in his opinion, which caused fixation.

Dr. Steele said that he, too, was not yet prepared to throw aside muscular spasm and the valuable experience of the past with reference to the action of traction.

Dr. Whitman thought Dr. Sherman should have paid more attention to the part played by habitual use in the final production of deformities, rather than limiting himself so closely to bone disease as an explanation of all these symptoms.

Dr. G. G. Davis said that he had tried the method of trephining the bone at the supposed site of the tubercular focus, and had found that it had apparently stopped the disease.

Dr. Judson was inclined to think that for a long time in hip disease it was inaccurate to speak of the joint as fixed.

Dr. Sherman said that when he had said that there was no muscular spasm *per se* he had meant that it did not originate in the muscle, as in the case of cramp. The muscles were implicated, but only as the servants of the bones and of the spinal cord. As at the beginning the sole lesion was in the bone, one must look to that lesion for the motive.

SOME CLINICAL FEATURES OF RHEUMATOID ARTHRITIS.

Drs. R. T. Taylor and **S. H. McKim**, of Baltimore, presented this paper. They asserted that this disease was usually bilateral, and rarely presented any abnormality in the bones or cartilages. A characteristic feature was the involvement of the cervical portion of the spinal cord.

OLD SUBCORACOID DISLOCATIONS OF THE HUMERUS.

Dr. Griffith, of Kansas City, said that he had found in operating on two such cases that even with a very long incision and prolonged and violent manipulation he had not been able to reduce the dislocation until the long head of the biceps had been severed. He had also discovered that when this had been done the replacement of the head of the bone was made quite easy by the use, as a lever, of a long and powerful periosteotome having one end sharply curved. The division of the biceps in this manner caused no subsequent trouble.

Dr. G. G. Davis said that in operating on a case of old subglenoid dislocation he had found it necessary to loosen nearly three-fourths of the attachment of the pectoralis major and divide the attachments of the supra- and infra-spinatus muscles, and finally the capsule around and below the head.

HEAT AS A THERAPEUTIC MEASURE.

Dr. S. L. McCurdy, of Pittsburg, read a paper with this title, in which he detailed some observations that he had made with a view to determining the temperature of the structures below the surface, and the effect of such heat on bacterial life. He found that the temperature of these deeper structures was practically unaffected.

Dr. Wirt said that the hot air acted chiefly on the circulation in the blood-vessels and in the lymphatics, and upon the nerves of the part.

SURGICAL INTERVENTION IN CASES OF SPASTIC PARALYSIS.

Dr. B. E. McKenzie, of Toronto, said that in the treatment of these cases he favored tenotomy of the abductors and abduction of the limb to an angle of 60° or 90°, and the retention of this position for several weeks. The results from this treatment, even in most forlorn cases, had been extremely gratifying.

Dr. S. Ketch said that he had reached about the same conclusions as had the reader of this paper. Until the time had arrived when the contracture had become less prominent it was not proper, in his opinion, to perform tenotomy. Mechanical appliances for these defective children were usually harmful.

Dr. Ridlon believed that all these children should be operated on when young because the irritation was thereby relieved and the mental condition often improved. He had obtained good results from the use of braces in such children.

Dr. Sherman said that he cut the tendons freely and separated the legs as widely as possible, and if they relapsed the operation was repeated.

Dr. Judson relied a great deal upon education in the treatment of these unfortunate cases, but used mechanical treatment where locomotion was interfered with.

Dr. N. B. Shaffer said that if these cases were carefully watched there would be found a time when the spasticity would diminish, and he learned to defer treatment until this stage had been reached.

DR. E. H. BRADFORD, of Boston, said that while much could be accomplished by patient mechanical treatment, he confessed that the cure was much more rapid and thorough when tenotomy was done.

THE STATE CARE OF INDIGENT CRIPPLED CHILDREN.

DR. ARTHUR J. GILLETTE, of St. Paul, spoke of a new State hospital for the care of such children.

THE CAUSE OF FAILURE AFTER PHELPS'S OPERATION FOR CLUB-FOOT.

DR. DANIEL LA FERTÉ, of Detroit, present by invitation, read a paper with this title. He insisted that it was essential to open the mediotarsal joint, and, in severe cases, to divide the plantar ligament. After operation the usual methods for developing the muscles should be used, and they would be made easier if it were not necessary for the patient to wear any apparatus.

DR. MCKENZIE said that he had long been of the opinion that Phelps's operation proceeded on a wrong principle, and that the cutting of the tendo Achillis should be the finishing point instead of the point of beginning. Where the equinus could not be corrected it was because the astragalus could not be pushed in between the malleoli. In such cases it seemed to him wise to remove the astragalus.

DR. W. O. PLIMPTON said that the object of cutting the tendo Achillis first was to afford better leverage for the bringing down of the heel.

PROTHESIS, A BRANCH OF ORTHOPEDIC PRACTICE.

DR. A. B. JUDSON presented in this brief paper descriptions of several of the more important mechanical devices used by him in his work.

A PRELIMINARY REPORT OF A STUDY OF SHORTENING OF THE TIBIA IN CONNECTION WITH TUBERCULOUS DISEASE OF THE HIP.

DR. RUSSELL A. HIBBS, of New York, presented by invitation this paper. A study of forty-one cases had shown that the greatest shortening had occurred in the non-suppurative cases. He concluded, from his observations, that shortening of the tibia might be expected in a large percentage of cases of hip disease where it had lasted for one year.

The following officers were elected: President, Dr. Harry M. Sherman, of San Francisco; Vice-Presidents, Drs. R. Tunstall Taylor, of Baltimore, and A. R. Shands, of Washington, D.C.; Secretary, Dr. John Ridlon, of Chicago; Treasurer, Dr. E. G. Brackett, of Boston.

Recent Literature.

Wesen, Ursache und Behandlung der Zuckerkrankheit (*Diabetes Mellitus*). By DR. ALBERT LENNÉ, in Bad Neuenahr. Berlin: Verlag von S. Karger. 1898.

Diabetes mellitus is not only more often recognized at present than heretofore, but apparently the modern ways of living are increasing its frequency.[1] There is not a disease in which time spent in the study of the treatment of the case in hand brings so prompt a reward, and correspondingly few diseases which show so plainly a lack of proper attention. For all these reasons we welcome Dr. Lenné's book, which is an octavo of 152 pages.

In the first half of the work the writer discusses in two chapters the normal metabolism of the body and its modifications in diabetes. In two more chapters the symptoms, complications, causes and the prognosis, course and diagnosis are reviewed. The remaining half of the book, which is far and away the better part, is concerned with treatment. The author's experience embraces 352 cases, which is more than twice the number occurring in the Massachusetts General Hospital in seventy-four years. Though a physician in a bath resort (Neuenahr), Dr. Lenné studiously avoids bringing this to the foreground.

The discussion of diabetes contains little that is new, yet presents the recent work in an agreeable form. The book does not pretend to be exhaustive, and its scope is ample enough for the general practitioner. The chapter on treatment is so excellent that the reviewer regrets that it is not published in English. American doctors cannot too often have the basis of a rational diet in diabetes placed before them. "The first aim in the treatment of diabetes under all circumstances and in all cases must be to overcome the glycosuria . . . yet never at the cost of the patient's general condition." In a disease in which the abnormal course certain food-stuffs take is the striking feature the study of the diet becomes the principal factor. And Lenné commences at the beginning and in a clear exposition shows the relation of calories to kilos, and the nutritive values of the various classes of foods. Just as the carbohydrates must be limited, so must the albuminous food be curtailed. Prout, in 1820, called attention to this latter fact, which Bouchardat, Cantani, Naunyn, and, in this book, Lenné so strongly emphasize. Indeed Lenné bases his prognosis to a considerable degree on the amount of proteid food it is necessary to give the patient to maintain his body weight. The book is very helpful in the suggestions it contains for ways in which fats may be inserted into the dietary,

Treatment is commenced after an examination of the twenty-four hours' amount of the urine of the patient living on his customary diet. A comparison of the sugar and urea in the urine with the carbohydrates and proteids of the food for the same period shows the amount of carbohydrates unassimilated and indicates the fate of this portion of the proteid molecule. He then endeavors to gradually make the patient "sugar free," and having accomplished this result keeps the patient on the diet required for this purpose for a few days. Small quantities of carbohydrates are then allowed and the "tolerance" of the particular individual for sugars and starches estimated.

"I am moreover of the opinion that the diabetic needs bread surrogates as little as any especial form of food. It is only the preparation and combination of the food materials which demand certain precautions — except for this the diabetic can eat, so to speak, what a healthy person enjoys." It would be a pleasure to record the many helpful little wrinkles Lenné inserts, but for these we must refer the reader to the original.

All drugs have failed the author, though opium has been of service in combating special symptoms. The administration of sodium bicarbonate continuously or for alternate weeks is recommended.

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[1] A most interesting summary of statistics bearing on this point can be found in Williamson's Diabetes Mellitus and Its Treatment. Macmillan, 1898.

THE BOSTON

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ACCIDENTS AND LAWSUITS.

THE recent trolley-car accident in Connecticut, the frequent mishaps on the electric roads in Brooklyn, N. Y., and the shocking loss of life through a defective wharf at Bar Harbor, bring once more before our minds the ever-present problem of the relations of corporations and companies to the people they are supposed to serve. From time to time our sympathies and feelings waver between the claims of those injured and the attitude of defence at all hazards of the corporations held responsible. It requires but a small measure of observation to see that the travelling public has, in general, brought itself to a frame of mind in which it is ready to grasp at merest trifles if thereby it may gain some money reward. There can be no doubt that this, in itself, is pernicious and provocative of considerable injustice both to the individual involved as regards his personal health, and also to the company as regards its money liability. That verdicts in such cases are often unjust and exorbitant is notorious, and that juries are apt to be prejudiced in favor of the individual is a no less commonplace observation.

To one of a judicial frame of mind the existing state of affairs seems not infrequently a travesty on justice, so trivial frequently are the original grounds for which suit is brought, which must at the end often, of a long period of waiting, to the plaintiff's physical detriment, be so dearly paid for by the corporation concerned.

This is one standpoint. When we contemplate the accidents of the past few weeks, all due ultimately to human carelessness, our attitude changes. The feeling is forced upon us with growing conviction that any and all means which will force upon those responsible for large numbers of lives the necessity of every conceivable precaution against accident must be taken, and if they are not, that the companies must be held responsible to the utmost limit for the injuries and death resulting. There is absolutely no question that the immanence of lawsuits has such a deterrent effect; that it inculcates precaution, and thereby increases the safety of the people at large. We know of no other means which could bring this about in like measure, and in the light of a great accident and the enormous suffering of which it is the source, we should certainly in every possible way bring those responsible to a realizing sense of the full extent of their responsibility.

We are optimistic enough to think that the present arrangement is, on the whole, conducive to the best results. If the people at large can be restrained from pressing false and insufficient claims, and if the responsible corporations can be held in wholesome restraint and continual watchfulness, through fear of the law, there will be attained, no doubt, the maximum of justice. To accomplish this we need an improved public sentiment among the claimants for damages, and an ever increasing vigilance on the part of the courts in discovering liability.

We recall on one occasion hearing a sociologist of prominence say that the questions of the relations between corporations and the people at large are assuming a vast social significance, quite apart from their medical or legal bearing. As civilization advances this must, no doubt, be more and more the case. In the meantime, it is desirable to bring about as far as may be, a just relationship between the two, by education on the one hand, and rigid legal control on the other.

A NEW HOSPITAL BUILDING FOR DEER ISLAND.

AN addition is soon to be made to the existing hospital of the Penal Institution's Department at Deer Island. As our readers no doubt know, there has for many years been in operation at Deer Island an excellently equipped hospital for the treatment of persons either sick at entrance to the institution or of those contracting disease during their stay. Naturally the demands for treatment are not great at any time, nevertheless in so large a population as the island unfortunately has, there is rarely a time when the existing wards are not more or less full.

There has up to this time been no adequate means of isolating patients suffering from venereal disease and tuberculosis from other inmates, to whom they might be a menace, nor of properly secluding patients sent to Deer Island temporarily, pending an expert opinion as to their sanity.

The projected addition to the present hospital buildings is designed to accomplish this end. It will be connected with the existing hospital by a corridor 160 feet in length, and so protected that communication between the two divisions may be absolutely controlled. The main part will consist of a central rotunda, 35 feet square, from which will radiate four wings, 25 feet wide and 68 feet long. Each wing will have ten beds in the open wards, a diet kitchen, a linen room, a toilet apartment and an isolation ward.

The wards will be single stories, with a pitch roof, the rotunda one and one-half stories high. All the rooms will have a clear story, and be heated by indirect radiation, the corridors to have the direct heating. The wards for consumptives will be at the left, each of which will have a sun-room at the extreme ends.

There will also be an observation ward somewhat separated from those just described, which will be provided with three separate rooms. This arrangement will no doubt facilitate the speedy determination of mental defects in those sent for that purpose, and add greatly to the convenience of the hospital.

The addition of such a building is a distinct step in advance. Isolation of certain cases at public institutions is at present a decided need; the fact that this step has been taken at Deer Island reflects much credit on the policy of the existing administration.

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THE DANGERS OF OVER-ENTHUSIASM.

A hobby, even if it be a so-called scientific hobby, is a dangerous thing. There is a strong tendency in the human mind, which facts often do little to controvert, to see what it wishes to see, and what most conduces to the particular end it may have in view. Examples of this are not far to seek; we see it in the enthusiasm which finds a specific virtue in a certain drug that others find inefficacious, or in devotion to a theory which only half explains, or again, in literary lines, we cannot but suspect that whatever the ultimate truth may be, the adherents of the Baconian hypothesis would see more correctly could their ardor for their theory be somewhat cooled.

On the other hand, it is through such enthusiasms that results are gained, and there are after all always enough who think differently to keep the balance fairly even. Enthusiasm which ceases to be reasonable quickly meets with as vigorous an opposition. In the field of criminal anthropology and the determination of conditions of degeneracy, the spirit of over-enthusiastic research has run riot within the last few years. Statistics here are peculiarly fallacious, inasmuch as the whole physical and mental structure of the person must be taken into account, a fact which has been too often overlooked by investigators. The so-called degenerate ear is a case in point. We would suggest to our readers that they study all ears in an electric car for example, or in their own circle of acquaintances, and then compare them with the ears of a recognized degenerate type, as of criminals or paupers. It will quickly be apparent how meaningless this sign in itself is. We were interested a few weeks since in noting what excellent and undegenerate ears the residents of a school for feeble-minded had, quite up to the average of what one sees everywhere. And yet we still find noted in medical papers details of ears as signs in themselves of degeneracy.

The work of Prof. Cesare Lombroso has long seemed to us an example of the danger of over-enthusiasm. To the frame of mind into which he has worked himself by much excellent observation, all facts which to others are indifferent, or indications, perhaps, of special fitness, are proof of the essential correctness of his standpoint. The following clipping from the *British Medical Journal* shows the type of reasoning to which we refer:

"Prof. Cesare Lombroso, who has had an opportunity of studying casts of the cerebral convolutions and microscopic preparations of the brain of Vacher, *l'eventreur*, guillotined at the end of last year, has satisfied himself that the French 'Jack the Ripper' presented all the characters of the epileptic and congenital criminal. In both hemispheres, but particularly in the left, there was a communication between the Rolandic and Sylvian fissures; on the right side the latter also communicated with the post-Rolandic fissure. On the left side, the foot of the ascending parietal convolution presented several abnormal sulci; the fissure of Rolando ended above in a bifurcation on both sides; on the left side the interparietal fissure did not communicate with the post-Rolandic fissure, and was broken by numerous folds. Histological examination by Nissl's method of a small portion of the frontal lobe revealed atrophy of both granular layers, enlargement of the pyramidal cells, which were also very scanty in number, and the existence of a certain number of nerve cells in the white matter."

To a man armed with a preconceived theory, the cerebral convolutions have always been a tempting field, but we had supposed that investigation had long since gone beyond the point of attributing significance to anomalies of the Rolandic or other fissures and gyri, or to the examination of a "small portion" of the frontal lobe. Such superficiality strikes us as beyond measure unscientific. The foregoing may, no doubt, be incorrectly reported, but it serves to illustrate our point that enthusiasm has its dangers, and that its results are always to be taken with a conservatism proportionate to the degree of the enthusiasm.

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MEDICAL NOTES.

Professor Röntgen called to Munich. — Prof. C. W. Röntgen, of Würzburg, has received a call to the University of Munich.

Small-Pox Outbreaks — Up to August 3d there had been, according to the *Medical News*, some thirty cases of small-pox in Pittsburg and neighboring towns, all of which places are on the line of the Pennsylvania Railroad. No money has been appropriated for the establishment of a quarantine, and an appeal has been made to the Westinghouse Electric Company for funds for the purchase of vaccine virus and for quarantine expenses. An epidemic of small-pox has broken out in Claiborne County, Tenn., on the Kentucky border. It is believed that the efforts of the authorities to prevent the spread of the disease will be successful.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, August 16, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 59, scarlet fever 10, measles 7, typhoid fever 18, small pox 1.

Vaccination at Everett. — No new cases of small-pox have developed at Everett, and the Board of Health has discontinued free vaccination. The infected district will, however, be quarantined for several days.

Typhoid Fever at Jamaica Plain. — The small epidemic recently reported at Jamaica Plain has subsided. No new case has been reported from the infected district for more than a week.

Quarantine against Virginia Ports. — The quarantine against vessels from Virginia ports on account of yellow fever was recently raised. Since August 2d, when the quarantine was ordered, eleven vessels have arrived from Chesapeake Bay. None of them were infected.

Cholera Infantum. — There has been a less number of cases of cholera infantum during the past week than for the corresponding week last year. the figures being twenty-seven this year, sixty-seven last year. This is no doubt due to the unusual weather conditions.

Poor Schoolhouse Plumbing. — Owing to the unusual frequency of contagious diseases in Cambridge this spring, attention has been directed to the sanitary conditions of the schools. A thorough investigation is now under way, with the result that much of the plumbing has been found to be in an extremely defective state. It is stated, for example, that in the new English High School, which was completed about eight years ago and is a very expensive building, over two hundred leaks were found in the piping.

NEW YORK.

Small-Pox at Niagara Falls. — There have been a number of cases of small-pox recently at Niagara Falls, and on August 9th three additional cases were reported. The State Board of Health has succeeded in tracing the origin of the outbreak to a patient in whose case a mistaken diagnosis of chicken-pox was made.

A New Veterinary College. — It is announced that the two veterinary colleges, the New York College of Veterinary Surgeons and the American Veterinary College, have been consolidated, and will hereafter constitute the veterinary department of the University of the City of New York. The school is to be known as the New York American Veterinary College, and it will be on a like footing with the six other schools of the University. The College of Veterinary Surgeons was chartered in 1857, and the American Veterinary College in 1875, and Prof. Alexander F. Liantard of the latter institution is to be the Dean of the Faculty of the consolidated school. Most of the Faculty have been taken from the two colleges, Dr. Liantard being professor of anatomy, clinical surgery and veterinary jurisprudence, but some of its members are new appointments. Among the latter are Dr. Edw. K. Dunham, of the University and Bellevue Hospital Medical College, professor of comparative pathology; Dr. William H. Park, of the same school, professor of bacteriology; and Dr. J. B. Stein, of the New York Dental College, professor of physiology. In a statement in regard to the consolidated school issued by Chancellor McCracken of the University, he says: "These two schools have outranked in age all other veterinary schools in the country, and have educated more than one thousand veterinary surgeons. Like the veterinary school of Harvard University and that of the University of Pennsylvania, this school is placed upon a strictly university footing. Co-ordination and co-operation with the University and Bellevue Hospital Medical College will thus be secured to the advantage of both schools and of medical science, and to the promotion of the health of the community. In order to enter the school a student must have obtained forty-eight counts in a Regent's examination, this being considered the equivalent of a high-school education. The Regents have been gradually raising the requirements for admission to the professional schools, and in this I think they have performed an important public service."

Arrest of Four Attendants at Manhattan State Hospital. — Four keepers of the Manhattan State Hospital for the Insane on Ward's Island have been arrested on the charge of killing a paretic patient in the institution on August 5th. The case was reported to the Board of Coroners by Dr. Percy Bryant, the Medical Superintendent, who stated that the patient, who was thirty-four years of age, had been a powerful man and a wrestler. On the morning of the 5th he struck one of the attendants in the neck with his fist. He was then held on the floor by three attendants, who had come to the assistance of the first, until his paroxysm subsided. He then washed his face, returned to the ward, sat down in a chair, and became very pale. A physician was immediately sent for, but the patient died in a few minutes. The official report of coroner's physician, Dr. Hamilton Williams, of the autopsy made by him declared that death resulted from hemorrhage and shock. Among the injuries noted were fracture of six ribs and bruising of the intestines, with a rupture of the peritoneum.

Fire at Fort Hamilton Hospital. — A fire which caused considerable excitement, but which was extinguished before more than a few hundred dollars' damage was done, occurred early in the morning of August 7th in the military hospital at Fort Hamilton.

There were fourteen patients in the wards at the time, but all were promptly removed as soon as the fire was discovered.

Gift of an Ambulance. — A lady of Sing Sing who desires that her name shall be withheld has presented, through Dr. W. A. Winer, a handsomely appointed ambulance, costing about $600, to the Ossining Hospital in that place.

Death rather than a Bath. — The warden of the Hudson County Jail at Jersey City is authority for the statement that Giacomo Moreda, an Italian wife murderer, who committed suicide on August 8th, killed himself to avoid taking a compulsory bath. The man had not washed his face or hands during the three months he spent in jail, and death appears to have been preferable to him to being placed in a tub and scrubbed till he was clean, a treatment that was ordered for him in order that he might be in a fit condition to put on a new suit of prison clothes which the warden had provided.

Death from Starvation. — The Rev. J. Hughes Parry, fifty-four years of age, a native of Wales and pastor of the Moriah Welsh Calvinist Methodist Church of Utica, N. Y., died on August 8th of exhaustion following a fast of forty-eight days, undertaken in the hope of curing himself of chronic intestinal catarrh, a disease of which his father is said to have died. After the first two weeks he had no desire for food, but he lost thirty-six pounds and his strength gradually failed.

Death of I. C. Schureman, M.D. — Dr. I. C. Schureman, who had practised in Toms River, N. J., for thirty years, died at his home in that place on August 6th. He was fifty-nine years of age, and was an army surgeon in the latter part of the Civil War.

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ARMY NOTES.

The Mortality in the Army. — The records of the Adjutant-General's Office show that between May, 1898, and June 30, 1899, the mortality in the army from all causes was 6,605, of whom 5,907 died of disease. The deaths from disease in the United States were 4,091. In Manila and the Philippines, where active field operations have been carried on almost constantly, the mortality from disease, with an average strength of about 24,000, was 380.

Strength of the Medical Corps in the Philippines. — The present strength of the medical and hospital corps *personnel* now in the Philippines or under orders to proceed thereto includes 227 medical officers, 1,175 members of the hospital corps and 27 female nurses. The number of the latter is to be increased at an early date, there being altogether about 200 in the service. To this strength must be added a varying number of Chinese coolies, who do nearly all the work as litter bearers as well as the heavier labor about the hospitals.

Miscellany.

SUMMER MORTALITY IN NEW YORK.

The summer mortality in the city this season compares favorably with that in past years. The deaths reported in four weeks in July represented an annual death-rate of 22.73+, against 17.98+ for four weeks in June, and 17 55+ for four weeks in May. The maximum death-rate, 24.28, was reached during the week ending July 15th, and this period of highest mortality is exactly in accordance with the average figures for many years. The lowest death-rate reported for many months was in the week ending June 17th, namely, 15.73. Excluding the week ending on the 10th, when the rate ran up to 21.49, the average death-rate for June was only 16.81. The mortality from sunstroke has been unusually low this year. Excluding the weeks ending June 10th and 17th, when the deaths from this cause numbered 85 and 30 respectively, the weekly average since the first of June has been 2.66, and in several weeks there has been but a single death from sunstroke. Notwithstanding the intense heat of the earlier portion of June, the mortality from diarrheal diseases was very much greater in July than in that month. For four weeks in June the weekly average of deaths was 67.5, and in children under five years of age, 64.25; while for four weeks of July the weekly average was 316.75, and in children under five, 294.25.

Deaths from small-pox have of late years been very rare in New York, but during the week ending May 27th three were reported, and in the month of June there were nine fatal cases. In July, however, there was but a single death. The weekly average of deaths from diphtheria in July was 35, against 36 in June, and 27.5 in May; from scarlet fever, 7.75, against 15 in June and 13.5 in May; from measles, 11.25, against 19.25 in June, and 16.5 in May. Rather curiously, the mortality from pulmonary tuberculosis was somewhat greater in July than in June, the weekly average of deaths being 149, against 134 5 in June, and 158.75 in May. In pneumonia, however, there has been a progressive decrease in the number of deaths as the summer advanced, the weekly average being 171 in May, 128.25 in June, and 102.5 in July.

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THE INTERNATIONAL CONFERENCE FOR PROPHYLAXIS OF SYPHILIS AND VENEREAL DISEASES.

We have received from Dr. Isadore Dyer, of New Orleans, who has been delegated by this Conference to investigate the conditions of prostitution in the United States, a letter calling attention to this important meeting, to be held in Brussels, September 4th and following days. Papers are to be read by Drs. Fournier, of Paris; Neisser, of Breslau; Lassar, of Berlin; Finger, of Vienna; and by a number of others prominent as students of those questions. The committee has indicated the following as delegated to investigate conditions of prostitution in their respective countries:

Argentine Republic, Dr. Baldomero Sommer, of Buenos Ayres; Austria, Dr. Finger, Vienna; Belgium, Drs. Bayet and J. Verhoogen, Brussels; Bosnia, Dr. Gluck, Savajevo; Chili, Dr. Valdes-Morel, Santiago; Denmark, Dr. Ehlers, Copenhagen; England, Dr. Geo. Ogilvie and Dr. Drysdale, London; France, Dr. Ozenne and Dr. Julien, Paris; Germany, Drs. Blaschko, Berlin, and Neisser, Breslau; Hungary, Dr. Rona, Budapest; Holland, Dr. Selhorst, The Hague; Italy, Dr. Tommasoli. Palermo, and Dr. Bertavelli, Milan; Norway, Dr. Axel-Holst. Christiania; Roumania, Dr. Petrini de Gakatz, Bucharest; Russia. Dr. Petersen, St. Petersburg; Sweden, Dr. Welander, Stockholm; Switzerland, Drs. Jodassohn and Schmid, of Berne; Turkey, Dr. Von Duhring and Dr. Zotos, Constantinople; United States, Dr. Isadore Dyer, New Orleans.

With a view to making some presentations as to the conditions of prostitution and venereal diseases in the United States Dr. Dyer has sent out a list of questions calculated to elicit the desired information to every city in the United States of 20,000 or more inhabitants.

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SMALL-POX IN GERMANY.

The antivaccinationists will find food for thought if they will investigate the latest reports concerning small-pox in Germany during the last decade and a half. For the ten years previous to 1895 the average death-rate from small pox was 116, the greater of the total number occurring in the early period of the decade. In 1895 there were 27 deaths, in 1896, 10, and in 1897, 5. In Germany the law requires vaccination and revaccination. and the law is carried out. In no other country is the value of vaccination more evident than in Germany, and in no other country is the preventive method more thoroughly carried out. — *Journal of the American Medical Association.*

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JOHN HENRY GILBERT, M.D.

RESOLUTIONS OF THE NORFOLK SOUTH DISTRICT MEDICAL SOCIETY.

The fellows of the Norfolk South District Medical Society have received with the deepest sorrow the announcement of the death of their beloved and honored associate, Dr. John Henry Gilbert, of Quincy, who died on August 2, 1899.

In his death this Society has sustained the loss of an ardent fellow-worker, a consistent member of the medical profession and a skilful physician and surgeon.

He was a faithful attendant at the meetings of the Society, and in its deliberations exhibited a mind well informed in the most advanced thought of medical science.

He filled the office of Censor-Councillor and President with ability, zeal and faithfulness, and endeared himself to all the members by his kindly disposition, courteous manner, upright conduct in medical ethics, and friendly interest in the welfare and success of his fellow-physician.

His reputation was not confined to the city of Quincy, but throughout the State he was recognized by his professional brethren as an honored and honorable physician, who in accuracy of diagnosis, clearness of statement and judicious treatment was surpassed by none.

The memory of his pure life and devotion to the profession which he loved and honored will remain as a blessed heritage and an incentive to noble work by his associates in this Society.

The fellows of this Society tender to his bereaved family their sincere sympathy in this hour of deep affliction and loss.

Resolved, That this memorial be entered upon the records of the Society, and a copy of the same be forwarded to the family of our associate, and also to the Quincy papers and the *Boston Medical and Surgical Journal* for publication.

E. G. Tinkham, M.D., *President,*
John F. Welch, M.D., *Secretary.*

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RECORD OF MORTALITY

For the Week ending Saturday, August 5, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1245	600	20.98	9.76	11.40	1.20	1.84
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	428	167	21.61	10.35	14.72	2.30	4.45
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	218	102	24.38	10.07	20.14	1.66	3.13
Baltimore	506,389	236	105	32.68	5.16	28.87	1.72	.86
Cincinnati	405,000	103	—	10.78	7.84	7.84	1.96	.98
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	—	—	—	—	—	—	—
Washington	277,000	104	35	20.19	11.64	14.55	5.82	3.54
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	67	27	28.12	5.92	25.16	1.48	—
Nashville	87,754	37	14	—	13.51	—	—	—
Charleston	65,165	53	26	24.44	1.88	22.56	1.88	—
Worcester	108,240	50	22	36.00	6.00	28.06	4.00	—
Fall River	95,919	—	—	—	—	—	—	—
Cambridge	89,724	29	19	41.40	—	27.60	3.45	—
Lowell	88,641	39	24	36.72	9.13	36.72	—	—
Lynn	66,703	31	—	26.76	—	26.76	—	—
New Bedford	66,340	34	21	38.22	5.88	35.28	2.94	—
Somerville	66,101	15	4	26.66	13.33	13.33	6.66	—
Lawrence	57,263	14	8	42.84	14.28	42.84	—	—
Springfield	56,501	10	4	40.00	20.00	40.00	—	—
Holyoke	43,424	4	3	75.00	—	75.00	—	—
Brockton	37,278	7	2	28.56	14.28	—	—	—
Salem	36,883	25	17	48.00	4.00	48.00	—	—
Malden	34,613	12	6	—	25.00	—	—	—
Chelsea	33,468	12	9	16.66	—	—	—	—
Haverhill	32,022	11	7	45.45	—	36.36	—	—
Gloucester	30,589	4	2	—	—	—	—	—
Newton	29,716	10	3	—	10.00	—	—	—
Fitchburg	29,438	15	10	59.99	6.66	46.66	6.66	6.66
Taunton	28,167	15	5	26.66	6.66	20.00	6.66	—
Everett	25,338	—	—	—	—	—	—	—
Quincy	23,549	14	9	49.98	—	35.70	—	—
Pittsfield	22,643	11	4	36.36	18.18	27.27	—	—
Waltham	22,296	3	2	33.33	33.33	33.33	—	—
North Adams	20,971	4	3	75.00	25.00	75.00	—	—
Chicopee	17,842	6	3	16.66	16.66	16.66	—	—
Medford	16,511	6	4	50.00	16.66	50.00	—	—
Newburyport	14,915	3	2	—	—	—	—	—
Melrose	14,032	4	3	25.00	—	—	—	—

Deaths reported 2,890; under five years of age 1,280; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 696, consumption 256, acute lung diseases 144, diarrheal diseases 517, diphtheria and croup 52, typhoid fever 48, cerebro-spinal meningitis 26, whooping-cough 22, scarlet fever 12, measles 10, erysipelas 9.

From cerebro-spinal meningitis New York 11, Boston, Baltimore, Washington, Worcester and Chelsea 2 each, Cambridge, Somerville, Brockton, Quincy and Pittsfield 1 each. From whooping-cough New York 15, Philadelphia, Boston and Cambridge 2 each. From scarlet fever New York and Philadelphia 5 each, Boston 2. From measles New York 8, Providence and Melrose 1 each. From erysipelas New York 5, Philadelphia and Boston 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending July 29th, the death-rate was 20.7. Deaths reported 4,529; acute diseases of the respiratory organs (London) 169, diarrhea 807, measles 119 diphtheria 76, whooping-cough 60, fever 26, scarlet fever 23, small-pox (Hull) 2.

The death-rates ranged from 11.5 in Cardiff to 29.7 in Liverpool; Birmingham 21.1, Bradford 16.3, Bristol 13.6, Gateshead 13.7, Hull 18.7, Leeds 21.2, London 21.6, Manchester 24.1, Newcastle-on-Tyne 14.8, Nottingham 20.9, Portsmouth 19.7, Salford 25.3, Sheffield 27.6, Swansea 15.6, West Ham 25.2.

METEOROLOGICAL RECORD

For the week ending August 5th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A.M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...30	29.75	72	80	63	91	45	68	W.	W.	9	11	O.	C.	.04
M..31	29.90	68	79	58	54	56	55	N.W.	E.	9	6	C.	C.	
T...1	30.06	73	84	62	56	49	52	S.W.	S.W.	6	4	O.	C.	
W...2	30.01	76	85	66	68	73	70	W.	S.	1	12	F.	F.	
T...3	29.92	68	73	63	86	90	88	S.E.	S.E.	5	4	C.	F.	
F...4	29.89	70	77	63	92	74	83	E.	S.	6	11	O.	C.	
S....5	29.79	78	89	68	86	55	70	S.W.	W.	12	8	O.	O.	.10
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S. smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 12, 1899.

J. R. **Waggener**, medical inspector, promoted to medical inspector from April 9, 1899.

T. H. **Streets**, medical inspector, promoted to medical inspector from April 16, 1899.

T. A. **Berryhill**, surgeon, promoted to surgeon from April 9, 1899.

E. P. **Stone**, surgeon, promoted to surgeon from April 16, 1899.

J. M. **Moore**, passed assistant surgeon, ordered to the "Vermont," August 10th.

B. L. **Wright**, assistant surgeon, detached from the "Vermont" and ordered to duty with the 2d Marine Battalion for Manila, P. I., and on arrival at Manila to report to the commander-in-chief of the Asiatic Station for duty.

W. F. **Arnold**, passed assistant surgeon, granted extension of sick leave for a month.

G. **Pickrell**, passed assistant surgeon, authorized to drop middle initial of name. Detached from the "Baltimore" and ordered to the "Monterey" and to the Cavite Naval Station.

H. H. **Haas**, assistant surgeon, detached from the "Oregon" and ordered to the Naval Hospital, Yokohama, Japan, for treatment.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING AUGUST 10, 1899.

Wasdin, Eugene, surgeon. To proceed to National Soldiers' Home, Va., for special temporary duty. July 29, 1899.

Magruder, G. M., passed assistant surgeon. To proceed to Hampton, Va., for special temporary duty, reporting at the Bureau en route. July 31, 1899. So much of Bureau order of July 31, 1899, directing Passed Assistant Surgeon Magruder to proceed to Hampton, Va., revoked, and directed to proceed to Richmond and Newport News, Va., for special temporary duty. August 3, 1899.

Wertenbaker, C. P., passed assistant surgeon. To proceed to Hampton, Va., and report to Surgeon J. H. **White** for special temporary duty. July 30, 1899.

Smith, A. C., passed assistant surgeon. Leave of absence granted by Bureau letter of June 20, 1899, revoked and directed to rejoin station at Norfolk, Va. July 31, 1899.

Stimpson, W. G., passed assistant surgeon. To proceed to Fort Monroe, Va., for special temporary duty, reporting at Bureau en route. August 1, 1899. So much of Bureau order of July 31, 1899, directing Passed Assistant Surgeon Stimpson to proceed to Fort Monroe, Va., revoked, and directed to proceed to Newport News, Va., and report by wire to Surgeon J. H. **White**, Hampton, Va., for orders. August 3, 1899.

Blue, Rupert, passed assistant surgeon. To proceed to Columbus City, Washington, for special temporary duty. August 3, 1899.

Sprague, E. K., passed assistant surgeon. Leave of absence granted by Bureau letter of July 27, 1899, revoked. July 31, 1899.

Wickes, W. H., passed assistant surgeon. Leave of absence granted by Bureau letter of July 27, 1899, revoked. July 31, 1899.

Von Ezdorf, R. H., assistant surgeon. To report to Surgeon J. H. **White**, at Hampton, Va., for special temporary duty. July 31, 1899.

Fricks, L. D., assistant surgeon. Relieved from duty at the South Atlantic Quarantine Station and directed to proceed to Hampton, Va., and report by wire for further orders. August 1, 1899.

Thornbury, F. J., assistant surgeon. To proceed to Cleveland, Ohio, for temporary duty. July 28, 1899. Bureau order of July 28, 1899, directing Assistant Surgeon Thornbury to proceed to Cleveland, Ohio, for temporary duty revoked. July 31, 1899. Relieved from duty at New York, N. Y., and directed to proceed to Baltimore, Md., and report to the commanding officer for duty and assignment to quarters. August 1, 1899.

Bean, L. C., acting assistant surgeon. Granted leave of absence for fourteen days from August 4, 1899. August 3, 1899.

Gibson, L. P., acting assistant surgeon. Granted leave of absence for ten days. July 29, 1899.

McGinnis, R. H., acting assistant surgeon. Granted leave of absence for three weeks from August 7, 1899. July 28, 1899.

Martin, H. McD., acting assistant surgeon. Granted leave of absence for thirty days on account of sickness. August 2, 1899.

Smith, A. W., acting assistant surgeon. To proceed to Fortress Monroe, Va., and report to Surgeon W. J. **Pettus**, for special temporary duty. August 1, 1899.

Rodman, John C., sanitary inspector. Granted leave of absence for four days. August 1, 1899.

Kolb, W. W., hospital steward. To proceed to Hampton, Va., and report to Surgeon J. H. **White** for special temporary duty. August 1, 1899.

Peck, F. H., hospital steward. To proceed to Fortress Monroe, Va., and report to Surgeon W. J. **Pettus** for special temporary duty. August 2, 1899.

Davis, H. E., hospital steward. To proceed to Baltimore, Md., and report to commanding officer for temporary duty. August 2, 1899.

Olsen, E. T., temporary hospital steward. Relieved from duty at Chicago, Ill., and directed to proceed to Wilmington, N. C., and report to commanding officer for duty and assignment to quarters. August 2, 1899.

Brooks, S. D., surgeon. To proceed to Augusta, Maine, for special temporary duty. August 5, 1899.

Blue, Rupert, passed assistant surgeon. To proceed to Columbia, Washington, for special temporary duty. August 6, 1899.

Fricks, L. D., assistant surgeon. To report to Passed Assistant Surgeon A. C. **Smith** for duty. August 5, 1899.

Todt, W. C., acting assistant surgeon. Granted leave of absence for seven days. August 6, 1899.

Richardson, S. W., hospital steward. To report at Washington, D. C., for assignment to special temporary duty. August 5, 1899. To proceed to Norfolk, Virginia, and report to Passed Assistant Surgeon A. C. **Smith** for temporary duty. August 7, 1899.

Gibson, Frank L., hospital steward. Relieved from duty at the Delaware Breakwater Quarantine Station and directed to report at Washington, D. C., for temporary duty. August 9, 1899.

Comfort, N. C., hospital steward. To proceed to Hampton, Virginia, and report to Surgeon J. H. **White** for temporary duty. August 8, 1899.

RESIGNATION.

De Krafft, S. C., acting assistant surgeon. Resignation accepted to take effect July 15, 1899. July 26, 1899.

APPOINTMENTS.

B. W. **Goldsborough**, of Maryland, appointed acting assistant surgeon, U. S. Marine-Hospital Service, for duty at Cambridge, Md.

Egil T. **Olsen**, temporary junior hospital steward, appointed junior hospital steward from May 29, 1899. August 3, 1899.

Charles A. **Warhanik**, of Illinois, to be junior hospital steward. August 5, 1899.

PROMOTIONS.

G. M. **Magruder**, passed assistant surgeon, commissioned as surgeon. August 5, 1899.

J. J. **Kinyoun**, passed assistant surgeon, commissioned as surgeon. August 5, 1899.

RECENT DEATH.

Lawrence Grafton Kemble, M.D., M.M.S.S., of Salem, died August 7, 1899, aged thirty-seven years.

Address.

ADDRESS IN SURGERY.[1]

BY ALEXANDER OGSTON, M.D.,
Surgeon-in-Ordinary to Her Majesty the Queen in Scotland; Regius Professor of Surgery, University of Aberdeen.

(Concluded from No. 7, p. 151.)

In all that pertains to surgical work, it will not be questioned by those aware of what is now required, that our military and naval surgeons have, in peace, virtually no training to fit them for what they may at any instant be called upon to undertake in war. Who that compares the conditions under which the civil surgeon is formed with those existing in the Royal Army Medical Corps or the navy will be so bold as to say that the latter furnish any adequate means of familiarizing their surgeons with the highly complicated and difficult procedures which they ought to be able to carry out with dexterity and success? Save a few connected with Netley — and perhaps Haslar — Hospitals, most officers have hardly once in their lives an opportunity of carrying out an important operation on the brain, thorax, or abdomen. How, then, can they undertake, with any prospect of a happy issue, the intricate steps of, say, a laparotomy in a gunshot wound of the abdominal contents, with all its complicated problems and perils? Under the existing system no junior officer of the Royal Army Medical Corps has any opportunity of practising modern surgery; even if an occasion offers, he is tied down by restrictions and impediments enforced by his seniors, and his natural desire to prepare himself for the highest work is disregarded and repressed, so that few, if any, are capable of the class of surgical work which will be expected of them by the country, and for the non-performance of which they will be unjustly blamed when the test of war is imposed upon their performances. So long as the medical services afford their surgeons no proper facilities for acquiring and maintaining a competent knowledge of these highly-important and necessary matters; so long as the junior medical officers have neither the chance nor the encouragement to perfect themselves in their science, and especially in what would lie before them in the event of a war, it can hardly be wondered at that a service entailing on those who enter it what is, from a professional point of view, almost an intellectual sterility, should be a mode of life our best graduates recoil from, and which few of them can be persuaded to adopt.

THE WANT OF ADEQUATE TRAINING.

Moreover, the destitution of the army and navy of institutions where surgery can be practised is very great. Netley Hospital, limited as it is to the treatment of soldiers, and Haslar to that of sailors, do not offer such varied material as is required by surgeons and physicians to cultivate the practical branches of their art. And there is an almost total absence of hospitals and lazarettos throughout the stations where medical officers are serving of a kind fitted to afford them any of the facilities they have a right to expect. The provision of places of study and practice is imperatively called for, where the younger and middle-aged officers, provided with all the appliances found in civil institutions, and with every class of patients on whom they may be used, may fit themselves for their duties of attending the wounded during action or in field or base hospitals. And until such provision is made, we may be assured the services will not secure the number and quality of officers they require; for graduates will not nowadays, after being fashioned by years of high mental training, consent to exchange an intellectual profession for a life of stagnation. The services must either adapt themselves to the altered spirit of the times, or remain undermanned and officered by a class of graduates inferior to those who would otherwise enter them.

Had custom not dimmed our eyes, the position of matters in the army and navy would ere now have excited indignant surprise. While the calls of modern science have been heard in the surgery and medicine of civil life, and effected the changes to which I have alluded, and while they have been taken to heart in the medical services of foreign armies and navies, they have fallen on unheeding ears among those responsible for the efficiency of our own. The contrast between the medical and other departments makes the matter more astonishing. Such scientific corps as, for instance, artillery, engineering, and telegraphy have undergone extensive improvements and reforms in the last few decades. No means of enhancing their efficiency is neglected. For them all the inventions of modern science are studied, adopted, and improved. Elaborate care is taken that every one whose duties in war time will necessitate his familiarity with appliances or knowledge of any kind is trained in them, so that when the call of war is heard, perfect efficiency shall have been attained. The lives of the officers and men of the navy, of the royal engineers and artillery, of the cavalry and infantry, are devoted to the daily acquirement of a knowledge of and familiarity with what they must use in war, attainable only by constant practice under conditions resembling as nearly as may be those of a real campaign. Tactics are studied, manœuvres held, officers and men practised and drilled, fleets and bodies of men are put in motion, and any unreadiness is observed and remedied. Yet the Royal Army Medical Corps and the Naval Medical Service, which demands an even higher and more varied culture, a more profound knowledge, and a greater degree of practice and experience than either artillery or engineering ere their delicate machinery can be brought into salutary use, are left in a condition which may have answered well enough fifty years ago, when rough-and-ready surgeons could do the rough-and-ready work then required, but which is out of harmony with the revolutionized conditions of modern surgery and the state of the medical service of the armies and navies of rival military powers. Even the care that has been bestowed on the development of ambulance will only result in wounded men being now brought, on the best surgical principles, to surgeons rendered as unfit to treat them as it is possible for a bad system to make them.

CAUSES OF DISCONTENT IN THE SERVICES.

The present system has had a sufficient trial, and, in spite of all attempts to amend it, has yielded unsatisfactory results, mainly owing to the deficiencies indicated. The Royal Army Medical Corps and Navy

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[1] Read at the annual meeting of the British Medical Association at Portsmouth, August, 1899. — Abstract from advanced proof-sheets sent by the courtesy of the editor of the British Medical Journal.

Medical Department, indeed, are at present existing under impossible conditions; they cannot be subjected to such impediments without their effects being felt in a hundred ways. They are in a state of internal discontent from the consciousness of being seriously defective somewhere. Their members realize that they do not possess the same privileges of professional occupation as their civil *confrères*, and are sensible that they are not equipped as they ought to be in following out the intellectual problems to which they have dedicated their lives. This is perceived not only by themselves but by others, especially by the other scientific branches, and naturally they do not enjoy the same appreciative esteem as is accorded to departments engaged in the constant healthful exercise of all their due activity, and possessing the internal vitality and self-respect resulting from conscious advance in the exhilarating race of intellectual progress which forms the very life of the leading professions in the world's foremost nations. It is certain, too, that the same cause underlies what has often been complained of, namely, the cold regard paid by the military and naval authorities to the medical services, their lack of appreciation of them, the way in which they are starved in their pecuniary requirements, and the fashion in which their exercise and training during peace are overlooked and neglected. They would seem to be considered as less deserving of development than even such departments as the commissariat and transport — the contemptuous belief being apparently held that trained surgeons to attend the wounded in war can be summoned into the field at a moment's notice by the expenditure of so much money, like the horses, mules and camels that an army requires.

THE ARMY MEDICAL SERVICE UNDERMANNED.

This condition of things is one from which there must some day be a rude awakening. It may be true that in former days an army medical service could be so extemporized, but it is so no longer. The Army Medical Corps ought to be made, what it at present is not, a complete and perfect entity, fully equipped with everything needful, and regularly trained like any other department. If it is to furnish the priceless service for which it exists, it must be fully manned, the members composing each of its units must be accustomed to work together, so that their duties are familiar and can be promptly performed, and the whole of its equipment must be prepared in time of peace for instant employment in war. Instead of this we have a department so starved and undermanned that, as the Under Secretary for War recently admitted, in the event of a war breaking out requiring the employment of two army corps, we could not supply them with the requisite medical contingent.

So complex an organization as the Royal Army Medical Corps ought to be kept in a high state of efficiency, and be vitalized by continual practice. It ought to consist of separate units, each complete in itself and familiar with its equipment and work. Each field hospital should be completely furnished and frequently practised in its duties. Every corps should be ready to act, as in other departments, the moment it takes the field, and not have to learn its duties there when the day of trial comes in a campaign. Whether stationed at home or abroad, the officers should be provided with all the proper means of keeping themselves informed regarding the advances that are for ever being introduced into their science. The literature bearing on every new progress should be supplied to them at remote stations where scientific periodicals and books are not found; for no medical officer can, from his pay, purchase and transport a library of the newest medical works, even if he were aware, which he often cannot be, of what he ought to procure. The want of all these things prevents the due development of the services, and there can be no reasonable hope of a better state of matters until they are remedied. But were the reforms that naturally suggest themselves carried out, who can hesitate to believe that new life would be infused into them? The best graduates would once more flock to and remain in them; and the country would not be placed in the dreadful position of having to pay with the lives of its bravest and best for the state into which its medical services have been allowed to drift.

THE INDIAN MEDICAL SERVICE.

It is not necessary to enter into many details concerning the Indian Medical Service. To some extent it shares in the defects of the Queen's; but opportunities of professional work are more frequent, two-thirds of its officers being engaged in civil work; and it therefore affords a professional training that places it in a much better position, and approximates it in some degree to the condition of Continental army medical services. Its comparative popularity is a strong corroboration of the remarks I have just made, for it attracts the best graduates of our medical schools, so that the weakest men who enter its ranks are of a class superior to the best who enter the Royal Army Medical Corps.

THE MEDICAL DEPARTMENT OF THE NAVY.

The medical department of the navy, on which I have already partly touched, has no more than the army kept pace with the advance of the times; it still preserves an organization that may have answered its purpose well enough in the first half of the present century, but is inadequate to meet the requirements of to-day.

In it, as in the army, the fundamental error is perpetuated of adhering to a system whereby its officers, shut out from practising their profession as civil surgeons have to do, fall year by year more out of touch with the advancing requirements of science, and necessarily fail to familiarize themselves with what will be their great duties in the event of a naval war. Treating none but the healthy and strong in time of peace, their opportunities of dealing with wounds, and especially with the higher branches of surgery, are as good as non-existent; and they cannot by any possibility, as things are, acquire the skill everywhere possessed by surgeons engaged in civil work, but which would in war be equally demanded of them. Such as it is, their work has to be carried out under arrangements that seem deliberately calculated to render the practice of antiseptic or aseptic surgery impossible in rooms without antiseptic materials, irrigators, or sterilizers, and with a limited armamentarium of instruments provided, even at the present time, at their own expense. Proper diagnostic instruments and apparatus do not exist among them; even the surgeons in the best equipped vessels and stations are left destitute of the facilities that are wanting in hardly a single civil hospital or dispensary for the poor throughout the length and breadth of the land.

Nearly all that has already been stated regarding the Royal Army Medical Corps is at least equally true of the Naval Medical Service; but to enter *seriatim* into these matters again would be an unjustifiable waste of time. More than the army the navy requires the touch of a reformer's hand. I should be sorry to use any word that may give needless offence, but I am forced to say that even on board the most modern ships of war a comparison of their surgical outfit and arrangements with the varied armamentarium and the conditions of work of the civil surgeon tends to evoke a vision of the knight of La Mancha equipped in his great-great-grandfather's suit of armor.

When we consider what the medical officers of the navy may at any moment be called upon to do, and their vast importance to the country, we feel that they, of all others, ought to be almost lavishly supplied with the best facilities for work, with instruments and apparatus of all kinds, instruments for special diagnosis, instruments for special operative procedures, endoscopes, electrical instruments, radioscopic apparatus, sterilizers, and apartments where antiseptic and aseptic surgery can be practised, and have reasonable opportunity in time of peace of familiarizing themselves with their use. The highest care should be bestowed on fostering the British of all the naval medical services in the world, and we can scarcely believe that this is not done.

THE WOUNDED IN NAVAL WARFARE.

In the event of a naval engagement of any magnitude the wounded on board our ships of war would have to be attended to in a small dark room, unprovided with any save the rudest appliances and a few cots, where at most half a dozen men could be handled, and which is moreover in many vessels as much exposed as any other part of the ship to the fire of the enemy. Were such a fighting-bay rendered untenable, the wounded, however great their need, could be attended to only by being lowered, slung in a vertical posture, down the narrow hatchways, where the shot is brought up from the magazines to the guns, and even these would not be available during the heat of an action. Everything on board ship that can destroy life is in the highest perfection, everything that can save it is of the rudest description and behind the age. In the case of a gunshot wound through the abdomen the only chance of recovery is laparotomy performed within twelve hours, but on board none of Her Majesty's fleet is there any possibility of performing such an operation; there are neither accommodation, instruments, nor accessories. Or were 20 per cent. of the men of one of her battleships or cruisers killed and disabled in action, the wounded among them could not, in the present state of things, receive the attention that ought to be given them.

Yet there is no reason why the constructors of the navy should not arrange under the water line, shielded from the enemy's fire by the turtle-back armor-deck of the vessel, a sufficiently large and well-lit space, fitted with all that is required for wounds, compound fractures, and operations on the main cavities of the body. Into these the wounded could be lowered through hatchways made capable of transmitting men on stretchers or litters even in the midst of an engagement, so that all emergency operations could be satisfactorily performed.

Matters are even worse on board the smaller vessels, which have no surgeon and few surgical appliances. On torpedo-boat destroyers there are no materials for making splints, only a box of antiquated remedies like those supplied in the vessels of the mercantile marine, where the sailing-master acts as the doctor. It would not sensibly retard the speed of such a boat to carry a surgeon,— or at least several men specially and fully instructed in first aid, and really capable of efficiently affording it,— and to furnish such appliances as would enable them to deal with wounds and compound fractures.

The requirements of naval warfare must always, more or less, impede the carrying on of surgical work on shipboard during naval actions. No person will impugn the principle that the efficiency of war vessels as fighting machines has first to be considered, and as much accommodation as possible allotted to their fighting armament. It is inevitable that this should be the chief consideration in fitting out the navy. To keep the communicating doors of water-tight sections open during action, in order to convey the wounded to the surgeons, might cost the lives of all on board. It may also be that in naval warfare, especially in some vessels, success may occasionally best be purchased by throwing aside for the time being all considerations of dealing with the wounded. But the principle may be, and is being, carried too far: for it is a duty to see that, short of interfering with the perfection of the fighting machine, no suffering is left unrelieved or life needlessly sacrificed, and no means neglected of bringing wounded men the earliest and best attention that can be given. No questions of economy should be allowed to prevent officers and sailors wounded in naval warfare receiving such early and effectual help as their condition so urgently demands. The cost of a couple of twelve-pounder guns would probably cover all that is required for each ship. We must lead rather than follow in all naval matters, as foreign ships of war are constructed according to the example England sets. And our navy, being the most perfect and greatest destroying force of all the war-fleets of the world, we should be the foremost in introducing into it the best-planned methods of relieving suffering and saving life that can be devised.

LINES OF REMEDY.

Criticisms without suggestions are usually better unmade, and to call attention to defects in the services without indicating the lines of remedy would be almost unpatriotic. I have already ventured to some extent to indicate how I think defects may be made good, though some of the suggestions have been more of detail than principle. It would be out of place to dwell at length upon minor suggestions, but it may now be desirable to state generally the lines on which the services can be brought into harmony with the requirements of modern science, so as to insure the wounded in war the most enlightened treatment, and for the medical officers the means and training for carrying on their work in a manner that will bear comparison with that of their civil compeers.

It would be easier to do if we possessed universal military service, as we might then look for guidance from Continental examples. In countries where this obtains, the most eminent civil surgeons are at the disposal of the authorities in time of war, and in peace hold rank in the army, receiving promotion like those actively serving. They are soldiers in reserve, and can be made use of wherever their eminence and special qualifications make them most useful in war. The idea of adopting this system among ourselves, but on voluntary lines, is no new one; although it has recently been brought prominently into notice by Lord Lansdowne's creation of the Central British Red Cross Committee. If the committee make an endeavor to attach a number of our most capable civil surgeons to the Royal Army Medical Corps, by conferring on them military rank and titles, with special privileges and emoluments, on condition that their services be at the disposal of Government in time of war, some good may be done. There are obvious difficulties, but they do not seem altogether insuperable, and, at any rate, such a plan is worthy of the attention of the War Office. But anything short of this, as, for instance, the old desultory method of inviting civil practitioners to volunteer their aid when war breaks out, and so supply the defects of the service, is doomed to failure; because, though capable young graduates are thus obtainable in considerable numbers, they are not the class of experienced surgeons who are wanted; they cannot replace the military or naval medical officers, and are at best but a species of superior dressers. Few, if any, of the men who would be of real value will come forward, save perhaps in the event of an impending national calamity. The system was tried in the Crimea, and has since occasionally been carried out by the National Aid Society, but I am sure those who have seen it in operation must admit that it is at least a comparative failure.

Neither of these methods, nor indeed any other, will, however, compensate for an inefficient army or navy medical service, and should the War Office or Admiralty be induced by any such expectation to defer the necessary improvements in their medical departments, they will find when the day of trial comes that they have made a fatal mistake. But I shall have to return to this question farther on.

MEDICAL SERVICES OF GERMANY.

Although the arrangements of foreign services cannot be directly adopted in our own, they may teach us how to improve them, for we find most of them imbued with a recognition of the altered conditions of the surgery and medicine of to-day, and making progress in adapting themselves to these changes in a fashion that is not found among ourselves. Much that is instructive may be learned from the medical services of Germany, where, of course, compulsory service exists. In that empire every medical man who has served possesses a fixed military rank, even if engaged in civil practice, and is liable to be called upon to serve where and when required. Those who have not served in the regular army but are in private practice receive annually an inquiry addressed to them by the War Office as to whether they are prepared to serve their fatherland in case of war. Every German medical man who has served in the army at all is maintained for nineteen years under military orders — that is, he possesses a fixed rank, and is allotted, even in time of peace, a known military post which he would occupy if war broke out. Thus the university professors hold high military rank, corresponding with their eminent civil position and scientific attainments, and are required to give annual courses of instruction to the medical officers serving in the army or navy. Such well-known surgeons as Bergmann, Bruns, Trendelenburg and Mikulicz have to teach these classes during the Easter holidays, so as not to interfere with the winter and summer sessions of the universities. Each professor has his fixed military rank assigned to him in case of war; most of them rank as lieutenant-generals, some as generals, and even higher, and in the event of war they act as consulting surgeons to the medical officers of the army in the field or base hospitals. They receive the same pay as the military surgeons, as do also the other surgeons who are liable to be called out in case of war; and some of the latter have places assigned them in the sanitary corps, etc., so that their skill and experience are utilized in every department of the service.

In time of peace German army surgeons have the development of their professional culture ensured by the following measures: The most promising surgeons and assistant surgeons are sent to do duty for a year at a time in the medical, surgical and gynecological departments of the hospitals connected with the universities, and in other large public hospitals unconnected with them. The junior and assistant surgeons are also annually sent to attend the special courses of instruction in anatomy, surgery and operative surgery mentioned above. The senior medical officers nearly corresponding with our surgeons-major, at least the most competent and promising of them, have to serve in rotation in the large military hospitals, in which are treated not merely soldiers but all kinds of ordinary patients; there they have to act as teachers and attend and take a share of the tutorial work among the pupils in the classes of the various professors; or they may be sent to do duty for a year in the general hospitals, not only in the surgical but also in the medical and gynecological wards. They have also to attend, as they may be ordered, annual courses of bacteriology; or they may be furnished with funds for travelling in other countries and studying their medical and sanitation arrangements.

All surgical instruments and appliances in the German army are provided by the State, and in their navy this is likewise the case; every hospital in which the medical officers serve has its complete armamentarium provided for it, so that no unwise economy hampers the most thorough and modern practice of the healing art; and the same thing is true in regard to their naval medical service.

MEDICAL SERVICES OF RUSSIA.

In the Russian army and navy similar care is taken of the professional culture of the medical officers. Russia possesses 6 large and 300 small hospitals connected with the army, besides smaller lazarettos; and in some of these the equipment is far in advance of anything the services possess in this country. Thus the military hospital of St. Petersburg, wherein are treated all medical, surgical, gynecological, ophthalmic and other diseases, consists of five separate clinics or infirmaries, each of which is complete in itself, and possesses departments for every class of disease, and even wards for paying patients. The wards are excellent, and replete with appliances of every kind, and there are bandage-rooms, purifying-rooms, operation theatres, bacteriological departments, rooms for physical research, laboratories for teachers, and laboratories for students, all excellent and complete. Each clinic possesses 850 beds, 120 of which are for women's diseases, and 20 for children's; and about 45,000 patients are treated per annum. In these clinics the students and assistants have to work in the most thorough manner, and study every kind of case.

The hospital possesses a staff of 34 professors, 70 *privatim docentes* and 47 assistants. Each department is furnished with an ample annual allowance for instruments and apparatus, and can apply for and obtain additional grants for anything more that is required, or for anything new and expensive. They have liberal provision of everything calculated to assist the most advanced work and investigation: x-ray rooms, photographic-rooms, electrical-rooms, immersion lenses, centrifuges, etc., to an extent that excites the marvel and envy of British visitors. The work in the wards, such as case taking, temperature recording, and every sort of examination and study of the cases, is of the very highest character, and the operations and dressings are carried out by the surgeons and qualified assistants in a fashion that is above praise.

Russia has 3,000 surgeons in her army, and any of these may, if he show ability and powers of work, apply for and be ordered to return to study in the hospitals for a period of two years. There he has to work as a regular assistant, and on proving his capacity may attain a place among the teachers of the institution; or he may be transferred to the hospital of some provincial city, and there continue to perfect himself in his profession, and further qualify himself for his duties in time of war.

The Russian naval hospitals are arranged like their army hospitals; they exist in many parts of the empire, there being five large ones at different ports, besides one or two smaller ones; they admit civil cases of all kinds; and in them the medical officers possess opportunities of training themselves in all manner of high-class professional work. In the Russian navy the medical officers who show ability can obtain permission to return for two years to the hospitals, and can there advance by merit, ten every year, to become *privatim docentes*, and so proceed to the position of professor. And they have the same privilege as those of the army of obtaining, after ten years' service, two years of study-leave in the hospitals and schools, during which time they are granted extra pay.

The Russian State supplies its army, its navy, and their hospitals with instruments of the newest construction, embracing appliances for special diagnosis and treatment; the operation instruments, and even the boxes that contain them, are arranged so that they may be readily sterilized by heat or otherwise, and Schimmelbusch's sterilizers and apparatus specially constructed for carrying out antiseptic and aseptic treatment under the difficulties of a campaign are supplied with them. The drugs are prepared for the services in the form of tabloids, with the active principles accurately dosed and made up by the newest machinery. Dressings, bandages, and such like are prepared, sorted, made up, sterilized, and sent out from factories which are ideals of purity, ingenuity and care, in a way that is an example to the world.

MEDICAL SERVICES OF FRANCE.

In the French army, post-graduate courses expressly for medical officers are conducted by professors at the different universities throughout the Republic, and the cost is borne by the Army Medical Department; while a certain number of the medical officers of the active and reserve army are every year ordered to attend them, extra pay being drawn by those who do so.

A SCHEME OF REFORM.

But enough has been said to show that we have much to learn from foreign countries; that, unless we follow their example, our officers, soldiers, and sailors who may be wounded in war will be attended to in a very imperfect fashion compared with those of other European Powers, and that our services stand in need of great reforms, which must be more or less of the following nature.

It would, first, be a great advantage to the services were a section created for military and naval surgery at the annual meetings of this Association, in which all professional matters connected with them could be discussed, and where all communications should be privileged. There can be little doubt that the responsibility for the defects of the services chiefly lies in the apathy and ignorance of the civil part of our profession regarding them, and this is the first thing that should be remedied. Such a section would furnish instruction as to the actual state of matters and what amendments are required, and by its agency the profession and public would be educated to obtain them. Reforms so initiated and urged on the authorities by the Association could not fail to be quickly introduced. In such a section also questions of ambulance, transport, equipment, wounds, and subjects of a kindred nature would be perennially dealt with. And special work by medical officers would secure due publicity and appreciation.

Information as to the condition of the services should be laid before the War Office and Admiralty, and the necessary reforms urged upon them in all proper ways, in order that their organization and equipment may be modernized. The War Office in particular should be induced to carry into complete effect the system initiated when the regimental system was abolished. Medical provision should be made for three complete army corps. This, if it exists at present, is a mere framework on paper, of no real use in so complex a machine as the Royal Army Medical Corps. The number of those who are to serve when war breaks out should be completed; the equipment and materials should be ready and at hand, and men and officers frequently trained in their use.

Field hospitals should have their equipment complete, and their staff ought to be attached to them.

The whole service should be organized as a body of independent units, capable of acting alone or being combined or brigaded as required. Everything belonging to each unit, even to its transport, should be complete and under the command of its medical officers. This would give the military authorities a medical corps on which they could always depend, out of which they could be supplied with such a proportion of units as the particular exigency required, to be distributed where and when they were called for. Such a system would throw responsibility for the adequacy of medical arrangements on those in command, and we should no longer have the Army Medical Corps bearing on its shoulders a vicarious load of sins whenever a general,— to use a terse vulgarism,— miscalculates the size of his butcher's bill.

INSTRUCTION OF OFFICERS.

The most clamant of all reforms is provision for the proper instruction of officers in their war duties. It is the climax of unwisdom to deny them this, and not until it is fully conceded can the services regain their lost popularity and attract such graduates as will provide the number and quality of medical officers the country requires. The principle of study-leave has been conceded, but cannot be carried out in a service too undermanned to do its work. And the amount conceded is, in my opinion, far too little to enable medical officers to keep pace with the advances of science. I cannot put too strongly the absolute necessity for at least one out of every five years of service being devoted to this. Were every meritorious officer, especially if he have been stationed abroad, set free to devote every fifth year or its equivalent during the first twenty years of his service, or up to forty-five years of age, to visiting and participating in the work of military, naval, and above all, civil hospitals and schools of medicine, much would be done to ensure his possessing the skill in the higher methods of surgery and medicine to which he and those under his charge are entitled to lay claim. In this we should be but adopting what has been found indispensable by other European Powers. Officers receiving study-leave should be sent to act as assistants, residents, and house-surgeons and physicians to our hospitals and schools of medicine, in the same way as our younger graduates who are in training for the highest places in the civil profession. Officers from the services would be cordially welcomed in such institutions, where men of their stamp are continually in demand. There exist, besides, numberless infirmaries throughout the country unconnected with schools of medicine, where most excellent surgery is being daily done, in which they would be received with open arms and welcomed to take a share in the work. It is often most pitiful to see our graduates in the services returning to the schools where they were trained, longing for and acutely feeling the need of such work and practice, who, under existing arrangements, can only hang about for a few days and look wistfully on under every discouragement of their natural aspirations, till they have to turn away, hopeless of obtaining the privilege of mixing among the workers and training themselves in the refined surgery of to-day.

DEVELOPMENT OF HOSPITALS.

It is of the most vital importance that the development of military and naval hospitals should at once receive the attention of the authorities. The services can never be what they should until their hospitals and lazarettos, both at home and abroad, are multiplied, improved, and cherished into new life and activity. They should, wherever it can by any possiblity be done, be thrown open for the reception of ordinary patients from the civil population, and for the admission of diseases of all kinds. The number of medical officers in charge of or serving in them should be largely increased, and they ought to be provided in them with fully the same opportunities as are enjoyed by their civil brethren. No more deadly injury has ever been done to the medical services than by starving and neglecting their hospitals. They are the heart of the services, and it is necessary that the authorities should be brought to recognize that this is so, and follow the wise example set by foreign nations.

HOSPITAL SHIPS.

I cannot believe it possible that the medical arrangements on board our ships of war should be permitted to continue in their present state. The succor of the wounded in a naval action is, no doubt, a question of very great difficulty on board ship, and no considerable alteration of the existing distribution of space can be claimed with any hope of its being conceded. But, without going so far as this, it is the duty of the State to provide those who shed their blood in its defence with suitable special accommodation in as safe a situation as possible, and to see that those in charge of them are furnished with every material, appliance or instrument that can lessen suffering, or confer an additional chance of saving life. Other Powers are more generous and wise, and a nation depending on its navy as we do cannot be pardoned for such suicidal economy.

New discoveries may possibly some day alter the conditions of naval warfare; but in the meantime it seems unlikely that any great change can take place in the general character of our fleets and warships, and a considerable naval action would certainly at present furnish such a mass of wounded men as might defeat the best efforts of the Naval Medical Service to cope with. The only means of doing so, and one so obvious that it is a marvel our country has not long since adopted it, is to provide every fleet with a certain proportion of fast steamers, without armor or armament, flying the Red Cross flag, fitted up with wards, operation theatres and dressing rooms, anesthetic, sterilizing and apparatus rooms, officered by a staff of surgeons and attendants, and in every way imitating the arrangements of the best civil hospitals. These should form as essential a part of every squadron as do the bearer companies and field hospitals of an army. Their duty should be to dash to the aid of ships disabled or out of action, or the moment the conflict was over; and with the help of their trained attendants and the best forms of slings, litters and barges remove the wounded to the protection of the Red Cross, and render them the same attentions as those given in like straits to the injured and wounded in the army or in civil life. The cost of such vesselswould be small compared with ships of war, and the good they would achieve in great naval engagements, and even in ordinary times, would be unspeakable.

I am glad, since this was written, to perceive that the Peace Conference at the Hague has occupied itself with this question, and is endeavoring to secure such vessels being treated as neutrals. But, even if the Conference fail to procure their neutrality, it will not make it the less our duty to provide such vessels in the navy.

CIVIL AID A BROKEN REED.

It is necessary, also, to make strenuous war on one of the most serious obstacles in the way of obtaining the reforms required for perfecting the services — namely, the tendency on the part of the military authorities to believe that deficiencies in them can at any time, by the power of money, be compensated by engaging civil aid. No more erroneous idea could possibly exist, as those who are acquainted with its working well know. The civil aid at present employed in various stations throughout the country is of an inferior quality, and could not, even such as it is, be made use of in war to any extent. The medical men who fill these substitutive posts, as well as those who would volunteer to aid in active service, are not the skilled and trained class who could be entrusted with the difficult surgery of gunshot wounds. The urgency of the situation has driven some to suggest that should need arise, the duty of attending part of the wounded and convalescents could be discharged by existing civil institutions. This could never be the case to any extent; neither their accommodation nor funds could be made applicable to such purposes, save in the event of a dangerous national crisis. The country and the heads of the services must be brought to recognize voluntary aid, even such as that proposed to be organized by the Central British Red Cross Committee, cannot provide the class of medical officers required, unless that organization were to be developed at great cost into a second army medical department, which would crush the present one out of existence without being itself fitted to take its place. The fatal error of imagining that the Army Medical Corps can be supplemented by civil aid is one that has already done infinite harm; it has been made a constant pretext for hindering the due development of the services and producing the defects of which I have spoken, and is a mischievous delusion that cannot be too strongly combated. Were such a proposal made regarding any other scientific department, such as, say, the royal engineers, its absurdity would be at once perceived; but so little is the peculiar position of military surgery known to the laity that it passes as being reasonable among many without, and some even within, the limits of the medical profession. At its best it is but a poor palliative, but can never be a cure.

FALLACIES AND FACTS.

It is conceivable that some may be found, even in the services themselves, who contend that they are not in so unsatisfactory a condition as I have painted. They can point to good work done in them but yesterday, to individuals in them whose admirable labors or brilliant achievements are well known to us all, and to evidence that special institutions or special expeditions are provided with many of the latest appliances for scientific diagnosis, treatment or research. It would be wrong to deny, or grudgingly and unfreely to admit, these facts; to overlook the enlightened, devoted and admirable work, or the talents and valor of numbers of our brethren in the services; or to minimize the efforts of those highly placed in them to maintain and elevate their standard. I should be be very sorry to seem to do so. But let those who hold that all is well with the services visit the hospitals, depots, ships and stations of the army and navy, and see with their own eyes the circumstances under which the surgeons have to work now, and would have to work in war. Let them contrast their equipment with that of our civil hospitals, even of our minor country infirmaries. Especially let them study the military and naval arrangements of other countries, and realize the full and energetic professional life enjoyed by the medical officers of the best European Powers. They will then find no escape from the conviction that our present system is most seriously at fault, and that without recognition of this and its timely amendment our country will have its eyes rudely opened when the strain of war shall arrive, and the test of facts unfolds the lamentable revelation of how unfitted the services are for their great and real work. I have given sufficing reasons why I and many civil surgeons feel unable to agree with those who take a hopeful view of the condition of the services, and have striven to show that there lies before us a struggle of no small magnitude to be gone through ere we can expect to do so.

I trust it is not necessary for me to say that, under what I have stated regarding them, there lurks no hostile undervaluing of the services, or of those who are in their ranks. I have been moved by a sincere respect for them, and regard for their interests, and by the conviction that the present is a suitable time for one in the civil part of the profession to speak boldly what is in the minds of many civil surgeons, and is known to still more who are in the services themselves. "Better are wounds from one who loves than fraudful kisses from an enemy." It has been far from my intention to reflect on the medical officers of the army and navy, numbers of whom are my own intimate and valued friends. Should I seem to have done so in any degree, then:

> Sir, in this audience,
> Let my disclaiming from a purposed evil
> Free me so far in your most generous thoughts,
> That I have shot mine arrow o'er the house
> And hurt my brother.

I know well that though in the services good work gets little reward, and bad work as a rule no punishment, yet in truth there is much good work done and little bad. I have been privileged to witness those in them doing all that men can do under the most discouraging circumstances, where everything seemed to conspire against success, and have admired and wondered how well things were done. The system is at fault, not the men, and no body of men can quite overcome the impossible conditions in which the services are placed, or make bricks without straw.

But I hope my motives will not be misjudged, and that what has been said may contribute in some degree to stir the profession generally, and this powerful Association in particular, to increased efforts to open the eyes of the British nation to the real state of matters, regarding which it is at present blind; so that when the Temple of Janus once more opens in our midst, the services may be found in such a state of preparation and efficiency as is demanded by the honor and well-being of our country and the interests of humanity.

Illegitimate Births in Munich. — Of the 16,234 births in Munich last year, 28.6% were "out of wedlock." And yet the German papers glory in the fact that one-third of the births in Paris are illegitimate. — *Philadelphia Medical Journal.*

Original Articles.

POTT'S PARAPLEGIA AS AFFECTED BY THE CORRECTION OF THE SPINAL DEFORMITY: A REPORT OF CASES.[1]

BY JOEL E. GOLDTHWAIT, M.D., BOSTON.

Until the past two or three years the commonly accepted treatment of Pott's paraplegia consisted of rest in bed with as thorough fixation of the spine as was possible, together with the less common but frequent use of traction and counter traction.

The duration of the paralysis varied with the location of the disease and the age of the patient. Rarely did it disappear before six months and that in children, while in adults few recovered in less than eighteen months or two years. In a certain number of cases, even after a longer period of time, and even under the most careful treatment, the power failed to return. This has formerly been considered to be due to degeneration of the cord, and consequently it was supposed that the condition was hopeless.

Various theories have been offered in explanation of the paralysis, such as abscess; direct pressure of the softened vertebra upon the cord; pressure due to a tuberculosis of the meninges; the tubercular process extending into the cord itself, involving the interstitial tissue surrounding the nerve fibres; an edema of the cord due to imperfect circulation at the seat of the disease, and probably others which have escaped my notice or memory.

As the result of the work which has been done during the past three or four years in connection with the correction of the spinal deformities, the course of the paralysis has been changed in so striking a degree that it becomes necessary for us to reconsider some of our former views, and it may be possible by studying a group of such cases to speculate more definitely upon the exact etiology of the symptoms.

The most striking fact in treating these cases is that whatever the etiological factor may be, the correction of the spinal deformity, or only a partial correction of the deformity, has been followed by a very rapid and at times an instant relief from the paralysis. This result has been so universal in my own experience and so common in the hands of others who have pursued the same method that, while at first the disappearance of the paralysis was supposed to be only a coincidence coming in connection with the correction of the deformity, at present the correction of the deformity has come to be of secondary importance to relief of the paralysis which is to be accomplished in this way.

In my own experience of the eleven cases which have been treated in this way all have shown a marked improvement in the motor control of the legs within a few days of the time of treatment. In some of the cases, either because of the location of the disease and the inability to hold the spine in the corrected position, or because of inability to control the after-treatment, it has not been possible to make the improvement permanent, and relapse has occurred. The fact, however, that the paralysis has been relieved by the change in the position of the spine has been demonstrated, and the demonstration repeated several times in one of the cases.

Of the eleven cases, five were reported at the last meeting of this Association in the paper entitled "Forcible Straightening of Spinal Deformities resulting from Pott's Disease," and they are again mentioned because the subsequent history of the cases is of fully as much interest as the immediate result.

Of the eleven cases three were children; of these one with disease in the upper lumbar region was entirely and almost immediately relieved by hyperextending the spine. Ether was not used, and after one year, during which the position of the hyperextension has been maintained, there has been no return of the paralysis. In another child, with disease of the first and second dorsal vertebra, the weight of the head alone was not enough to correct the deformity, so that ether was used for this purpose. This was followed by marked improvement in the control of the legs, but the improvement lasted but a few days only. The treatment was repeated once or twice with the same result. Each time the paralysis was relieved, but the improvement lasted for only a few days, the relapse being due undoubtedly to the inability to maintain the corrected position because of the location of the disease. The child is none the worse for the treatment, and is now being treated as formerly in bed with immobilization of the spine. The third child, with a large deformity in the mid-dorsal region, and with complete paraplegia, was considerably improved by the improved position of the spine, but the improvement has not been permanent.

Of the eight adult cases five were men. The oldest patient was a man of forty-three years of age. In only one of the cases was ether used, and this was one of the cases before the apparatus which is now in use had been perfected. At the present time I feel sure that even in this case ether would not have been necessary.

Of this group of adult cases, one of the most suggestive and interesting from a physiological as well as a pathological point of view is the case of the man of forty-three years of age. In this case the disease of the spine had been present for about six years. During the first part of the time he was under my care at the Carney Hospital, but paralysis developing, and having no home, he was sent to the Almshouse Hospital at Long Island, and there he had lain for four years previous to the commencement of the present treatment. While at Long Island he was under the care of Dr. E. W. Taylor, and it was through his kindness that it was possible for me to see him. The knuckle was in the mid-dorsal region, and there was, with the exception of as light tremor in the three middle toes of the right foot, absolute paralysis of everything below the waist, together with a partial paralysis of the bowel. The knees and ankles were stiff, while the feet were not only stiff but were fully extended so as to be in a straight line with the legs instead of at a right angle to them.

The patient was transferred to the Carney Hospital in July of last year, and a plaster-of-Paris jacket applied, with the spine in the hyperextended position. In a few days he could move the toes of both feet, but because of the long disuse the cerebration was uncertain for some time, and when asked to move the right foot, the left one was perhaps the one moved, and *vice versa*. This gradually improved, however, so that later the cerebration was in no respect peculiar.

Since July jackets have been applied about every six weeks, so that the spine has been kept constantly hyperextended. Ether has been used but once, and that not for the spine but to free the contractions and adhesions about the knees and at the ankles. There has been a gradual improvement in the voluntary control of the muscles of the legs, so that at the present time there is a response in practically all. The improvement has naturally been slow, as after four years of absolute disuse the muscles had undergone the most extreme atrophy. The rectus femoris, for example, was at first represented under contraction by a small band not wider than one's finger and not as thick, while at present, even though it is still very small, it has developed sufficiently, so that when the knee is raised, flexing the joint thirty or forty degrees, the patient is able voluntarily to lift the leg from the bed and straighten the knee.

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[1] Read at the meeting of the American Orthopedic Association, held in New York, May 31, 1899.

At the present time the patient is able to stand with the aid of crutches, and by being steadied can swing himself along the length of the ward.

The case is of interest even though there be no further improvement, which is possible, as he has recently developed tuberculosis of the genito-urinary tract, as it demonstrates that the function of the spinal cord can be wholly arrested for at least four years and still retain a portion, at least, of its power of transmitting impulses.

Of the other cases, one of especial interest is Case IV., a young woman twenty-one years of age. Paralysis had been present for about eighteen months, and the disease for four years. The patient was first treated in January, 1898, with almost instant relief from the paralysis, so that in one month she was walking about. She then became and has since remained an out-patient, reporting about once in six weeks to have the jacket reapplied. The point of special interest is that during the extreme heat of last summer her request to have a removable jacket was granted, the understanding being that the jacket was to be opened only when lying down. One week from that day the patient was brought to the hospital with paraplegia. She was sent to the ward, and a fixed jacket applied the following morning. As soon as she was put in position on the frame, no force being used other than her own weight, she remarked, "Now my legs are all right." The jacket was applied and that afternoon she left the hospital walking as well as ever. There has been no trouble since except once when the jacket had softened considerably the legs were said to feel weak and unsteady. The new jacket entirely reli-ved this sensation.

In two of the other cases there has been a temporary return of the paralysis due to the softening of the jacket, and in both cases the condition has been relieved at once by the correction of the position of the spine in applying a new jacket.

The following case is mentioned rather more in detail, as it represents a somewhat different condition, and the marked improvement which followed the treatment was more unexpected than in the other cases. With this one exception the cases which are here reported had developed the paralysis in connection with the acute or active stage of the disease. In this case, however, the active disease in the spine had occurred many years before, the spine probably having become anchylosed in the position of extreme deformity. In such a condition naturally very little was expected as the result of any attempt to correct the position of the back, the paralysis presumably being due to a late suppurative process developing in the rigid canal and thus causing pressure. The actual result, however, in this case was equally as striking as that obtained in the others. The paraplegia was much lessened by the application of the first jacket, and after the last one, which represented the third jacket, she was able to be up and move about. In this case the sensory paralysis which was present was likewise relieved.

The cases in detail are as follow:

CHILDREN.

Case I. W. A., a boy eight years of age, with disease of the upper lumbar spine of two years' duration. Paraplegia developed one year ago and was entirely relieved by hyperextending the spine without ether. Plaster-of-Paris jackets have been worn since then, the same position of the spine being continued. There has been no return of the paralysis as far as the motor central is concerned, but the knee reflexes are more lively than normal. There is no ankle clonus or noticeable weakness of the legs.

Case II. J. F., a boy six years of age, with high dorsal caries of one year's duration and during that time he had been under treatment with the usual braces. A few months previous to the time of the examination the patient developed complete paraplegia. Ether was used and the spine straightened, with marked relief, so that the child was able to move the legs about quite freely. In a few days, however, the paralysis returned, owing probably to the location of the disease and the inability to hold the spine hyperextended. The same manipulation was attempted two or three other times, and each time there was the same improvement, but also the same relapse in a few days. The child is none the worse for the treatment, and at present is being treated by recumbency with as thorough fixation as is possible.

Case III. R. L., a girl eight years of age, with Pott's disease of three years' standing, and quite a marked knuckle. She was treated at the Good Samaritan Hospital. Several attempts were made without ether to hyperextend the spine by both Dr. Thorndike and myself, and while two of the attempts at least were followed by improvement, it was of but short duration. At present the paralysis is the same as before the treatment was begun.

ADULTS.

Case IV. K. St. J., a young woman twenty-one years of age, with Pott's disease of four or five years' duration. There was a marked deformity, and paraplegia had been present for nearly two years previous to the time of the correction of the position of the spine. Ether was used and after the correction a plaster-of-Paris jacket was applied. The paralysis was relieved at once and there has been no return, except once when the jacket was partially removed at home, and once or twice when the jacket has softened. At each time the correction of the position and a new jacket has relieved the trouble. The knee jerks have remained much exaggerated. There is no ankle clonus and the voluntary motor control is normal.

Case V. T. D., a man twenty-one years of age, with disease in the mid-dorsal region of two years' duration. Paraplegia, in which the bowel also was involved, developed twelve months ago. The position of the spine was corrected without ether with instant relief of the paralysis. An abscess has developed since the treatment was commenced, but there has been no further trouble from paralysis either of the legs or bowel, except once when there was a slight temporary return due to the softened jacket. A new jacket entirely relieved the difficulty. The knee reflexes are still exaggerated.

Case VI. H. G., a man twenty-eight years of age, with disease in the lower dorsal region of two and one-half years' duration. Paralysis had been present with the bowel also involved for six months prior to the treatment. The correction of the position relieved the paralysis at once and there has been no trouble during the past year, except slight temporary trouble when the jackets have softened.

Case VII. A man thirty-six years of age, with mid-dorsal Pott's disease of comparatively short duration previous to the time of the first examination in April, 1898. At that time there was also disease of one knee-joint. The treatment for the spine was imperfectly carried out, owing to the fact that the patient lived at a distance from the city, but with the one jacket with an improvised apparatus there was a marked improvement in the motor control of the legs. The treatment was discontinued and the paralysis returned.

Case VIII. T. M., a man twenty-nine years of age, with disease of the mid-dorsal spine of five years' duration. At the time of the first visit at the Carney Hospital in January, 1899, there was well-marked paraplegia. This was entirely relieved by the application of a jacket in the hyperextended position, and there has been no trouble but once when the jacket had softened.

Case IX. T. D., a woman thirty-two years of age, with disease in the upper lumbar region of two years' duration. Paralysis had been present for about three months previous to her admission to the Carney Hospital four weeks ago. A jacket was applied in the hyperextended position and there has been a steady improvement, so that the patient is now able to walk about.

Case X. P. M., a man forty-three years of age, with disease in the mid-dorsal region of six years' duration. For four years previous to beginning the present treatment he had lain on his back in the Almshouse Hospital at Long Island (Boston) with absolute paralysis of both legs from the waist down, together with paralysis of the bowel. It was through the kindness of Dr. E. W. Taylor that I was able to see the patient. Nine months ago he was transferred to the Carney Hospital. At that time there was absolutely no voluntary muscular movement below the waist except a slight tremor in the three middle toes on the right foot, and this was so slight as to escape notice unless carefully looked for. Both feet were fully extended at the ankle and were rigid, partly due to joint adhesions, and partly to muscular stiffness. The knees or hips also could not be bent. The legs were edematous, and the circulation as shown by the condition of the skin was very poor.

Without ether the spine was hyperextended and a jacket applied. Within a week there was distinct voluntary movements in both legs. A few weeks later, under ether, the tendo Achillis were cut and the joints of the legs manipulated.

Until four months ago the patient made a steady gain, so that there was a voluntary reponse in practically all of the muscles of the legs. At that time a tubercular process developed in one testicle, necessitating surgical interference with a temporary discontinuance of the treatment for the back.

For the past three months the spinal treatment has been continued, together with the manipulation of the legs, and even though there are some signs of tubercular process higher up in the genito-urinary tract, the improvement has gone on so that there is strength enough in the anterior thigh muscles to raise the foot from the bed and straighten the leg, when the knee had first been flexed and supported. With the aid of crutches and an assistant to steady him he is able to walk the length of the ward. The improvement has been so steady that were it not for the manifestation of the disease in the other organs I feel very sure that he would be able ultimately to go about independently.

Case IX. Miss E., a woman forty years of age, with a large rounded kyphosis involving the mid-dorsal region, which had developed over twenty years before. In 1892 there was an attack of paraplegia lasting for three months. In September of last year the paraplegia again developed with sensory disturbances. The reflexes were extremely exaggerated and the voluntary motor control entirely lost. The patient was seen in consultation with Drs. S. A. Lord and C. F. Painter.

A jacket was applied with the spine hyperextended as much as possible, and since then three or four other jackets have been used. With each the paralysis has lessened, so that at present the patient is able to walk about freely.

The apparatus which was used to obtain the desired position of the spine was described and pictured in a paper read by me before this Association at the meeting held last year, and afterwards published in the *Boston Medical and Surgical Journal*, July 28, 1898.

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A HOSPITAL CLEARING HOUSE.[1]

BY CLARENCE J. BLAKE, M.D., BOSTON.

With the aggregation of population in cities, the multiplication of facilities for suburban transportation and the growth of urban hospitals, there comes more and more urgently to the administrators of trusts for medical relief the question of making such provisional classification of applicants, in out-patient departments especially, as shall assure to the worthy poor, for whom these institutions are principally maintained, the full meed of time and attention which is their due.

From a business standpoint the hospital may be defined as an institution in which capital and skilled labor combine to provide such members of the community as are temporarily disabled and without means of support with the maintenance and care which shall fit them to become again self-supporting and active community factors.

The hospital is a free repair shop for human machines and the capitalist who contributes to its support does so with the basal, though perhaps not with the defined, understanding that his contribution is returned to him through the community in the lesser number of incapacitated and dependent machines; while the doctor, who furnishes the skilled labor contribution, finds his return not only in the same manner as the capitalist citizen, but also in many other ways which need not be enumerated before this Society and which enure greatly to his own well-being and usefulness.

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[1] Read before the Massachusetts Medical Society June 14, 1899, and recommended for publication by the Society.

It is incumbent upon both these contributors to see that their contributions are justly disposed.

The ability to contribute in itself constitutes a trust.

It will be seen that the foregoing statement leaves out of consideration many of the motives which have led to the foundation of and continuance of contributions to the support of our hospitals; not that these motives, or the sentiment underlying them, which is the vital stimulus of all human brotherhood, is decried, but that the care of and provision for the needy sick is so serious a business as to demand the best judgment we are able to bring to bear upon it, and often the fittest use that we can make of a cherished sentiment is to split it into kindling-wood and with it start the fire in the harder fuel of our best endeavor.

Setting aside the emergency cases, whose urgent need of help is paramount to every other consideration, the applicants for hospital relief whose pecuniary fitness has to be considered are broadly divisible into two classes: (1) Those taken into the wards for more or less continued treatment as inmates; (2) ambulant cases; patients who, residing in their own homes, come to the hospital for occasional or for daily treatment. The latter make by far the greater number, and it is in response to their needs that the so-called out-patient departments of our hospitals have grown to their present dimensions, and have come to require administrative effort in classification far beyond anything that would be needed in a hospital receiving house cases alone, for with a patient admitted to the house there is usually ample opportunity for leisurely investigation.

That the sifting-out process in the admitting room of the out-patient department of a large hospital, however, is one which must be done with precision and celerity is shown not only by the large number of ambulant patients applying for relief but by the number of sub-divisions which must be made in order to secure to the eligible patient in the waiting-room protection not only from the presence of contagious diseases but from the encroachments of those pecuniarily unfit applicants, who, either through ignorance or guile, rob not so much the institution and the doctor as the really needy.

The "pecuniarily unfit" cases in out-patient departments in large cities may be generally estimated to constitute from five to ten per cent. of all patients applying for treatment and they may usually be classified as follows: (1) Persons ignorant of hospital usage and both able and willing to pay for professional services rendered; (2) persons who by a pretense of poverty seek to procure medical services for which they are able to pay; (3) the class of persons known in institutions' departments as "rounders," people who go from one hospital to another seeking advice and treatment, a species of medical mendicants; (4) persons who are able to pay a small fee but who are sent to the hospital by their family physician instead of being referred to an individual practitioner.

That the people who come under these four classes should be allowed to share indiscriminately with the proper objects of charity the hospital bounty is a lapse of justice in two directions, justice to those who support the hospital for a definite charitable purpose and justice to the doctor and the patient, for, with the large number of truly worthy patients, the time which the doctor can afford to give to the hospital is none too much to be divided among the many, and with the increasing difficulty of gaining a remunerative foothold in private practice the doctor, and especially the younger doctor, should have the fee, however small it may be, which the patient is able to pay for service rendered.

Various suggestions have been made as to the best method of dealing with the "pecuniarily unfit;" one, that an already existing institution like the Associated Charities should be asked to establish a department or to use some of its already operative machinery for the investigation and detection of these cases; another, that the doctor who treats the patient in the hospital out-patient clinic should himself question the patient as to his pecuniary condition.

To this latter proposition there are two very evident objections, namely, that the process of questioning takes time which properly and under the rules of the hospital belongs to the worthy patient, and also that there should be no connection whatever between the private practice of the physician for which he is paid and the practice in which he gives his services under the auspices of the hospital of which he is one of the recognized staff.

Against the first proposition it may be urged that while the Associated Charities organization and its records may be occasionally availed of, the duty of protecting their dependents and patients belongs properly to the hospitals themselves, either individually or both individually and through the medium of some organization in which they shall all have part and to the support of which they shall all contribute.

The extent to which individual supervision is exercised in this city and the opinions in this matter of those having hospital administration in charge are perhaps best set forth in the following communications.

The first is a letter from Dr. Farrar Cobb, Superintendent of the Massachusetts Charitable Eye and Ear Infirmary:

Dear Dr. Blake: — You asked me to write you in regard to the system in use at the Infirmary with respect to weeding out unfit cases. Allow me to say in the first place that it is very exceptional for any but poor and needy patients to obtain admittance to the wards of the Infirmary. The questioning and investigation of all the cases recommended for admission to the hospital is especially thorough, and after careful observation of the inmates of our wards for a long space of time, I am convinced that it is rare to find a patient who is not deserving of the charity of the Institution. There have been, however, occasional instances of deliberate misrepresentation, and consequent admission to the hospital, but such cases are very rare.

In regard to the attendance in the Out-patient Department, we have for three years carried out the following method: The registrars in the Out-patient Department are instructed to question any case which they think from appearance, or address, or occupation is able to pay a physician two or three dollars, and call attention to the fact that the Institution is only for the needy poor. In some instances each day it is necessary to send troublesome cases to the executive offices, and have them more carefully questioned. The limit of our questioning is to ask a suspected case whether he is willing to sign an affidavit that he is an object of charity. If the answer is yes, no further questioning is done. The registration slips of each case that has been questioned at the office are stamped with one of the two rubber stamps which I enclose, [2] and put on file in the records. The system as it is now working is not very successful. I have no doubt that a considerable number of unfit cases receive treatment each day in our Out-patient Clinics. It is my wish within a week or two to put one of my best and most responsible clerks in charge of a *special inquiry* room in the Out-patient Department for two hours each day, and to have all cases suspected to be able to pay sent to him for thorough questioning.

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[2] "This case was unfit and therefore was refused treatment;" "This case has been questioned at the office and is a suitable case."

One thing that I especially object to on theoretical grounds is the questioning of the patients by the doctors themselves, especially in the presence of other patients. I am decidedly of the opinion that such practice is wrong, and liable to misinterpretation. Investigation and questioning should be done by the executive department through some responsible agent. As I said above, now that our new Infirmary is running successfully I hope within a week or two to make a radical departure in the line suggested. Yours very truly,

Farrar Cobb.

At the Boston City Hospital, the out-patients are refused treatment by the physician in charge of the department at which the patient applies if the physician thinks the case in question unsuitable for charity.

If the patient insists upon being treated after being refused treatment upon the grounds of pecuniary unfitness the question may be referred to the Superintendent for futher investigation and decision. In the eye department there is a rule that the patient asking for a prescription for gold-rimmed glasses shall be refused treatment on the ground that the ability to afford this luxury implies ability to pay a physician. Dr. Rowe may be quoted as saying: "I do not believe that abuse can be stopped until all hospitals in all cities agree on some simple rational system and live up to it."

At the Massachusetts General Hospital all new out-patients are seen by the admitting physician and questioned as to their ability to pay for medical treatment, unless their appearance evidently indicates that they are suitable cases for charity; patients who admit their ability to pay something are refused treatment; those in regard to whom the admitting physician is in doubt are referred to the superintendent for further questioning and final decision.

Patients known to have been treated in other hospitals for the trouble for which they come to the Massachusetts General Hospital are referred back to the original clinic for treatment unless there seems to be a good reason for retaining them.

At the Boston Dispensary all new patients, except such as are evidently charity cases, are questioned as to their ability to pay for treatment. Doubtful cases which it seems best to admit are reported to the physician who is to have charge of the case for supplementary questioning.

In one way or another, therefore, the hospital administrations seek to winnow their applicants at the gate, but the winnowing process is one which lacks uniformity and co-operation and hence fails of the best execution.

The use of the term clearing house in this connection is not inadvisedly made, for in addition to its limited application in the banking system as early as the year 1856 in this country, a clearing house in other lines of business has come to be a central bureau not only for the establishment and maintenance of balances but for such co-operative investigation as may constitute it a bureau of information as well; and it is readily conceivable that the establishment and maintenance by hospitals in a large city of an officer to whom, or a bureau to which, there could be referred, for more leisurely investigation, pecuniarily doubtful cases, would not only relieve the individual administrator of a part of a most unwelcome task, but would in time become a channel through which there should flow interchange of ideas, and from which there should emanate to the public instructive information as to the rights as well as the obligations of hospitals.

Such an officer or bureau constituting a clearing house should be under the direction of a board of control, said board of control being not as is proposed in the new Dispensary Bill of New York, the State Board of Charities, or other alien organization to which is given a dominant power, but a board of control made up primarily of the medical superintendents of the hospitals themselves. A board thus formed and backed if possible by legislative enactment, making fraudulent abuse of medical charity a misdemeanor, would be likely to be an efficient piece of machinery for the attainment of the desired end.

The attention given to this question of the abuse of medical charities in the meetings of the National Association of Charities and Correction in recent years and the agitation accompanying the framing of the Dispensary Bill in New York are among many evidences that this subject is attracting the thoughtful consideration of the public at large, and the conclusion that any carefully-considered remedial measure emanating from medical sources is likely to receive cordial support, is based upon the fact that while the abuse is one which concerns the well-being of the community as a whole, its correction is properly one of the responsibilities of the medical profession.

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VOLUNTEER AID WORK IN FOREIGN TERRITORY.[1]

BY ELLIOTT G. BRACKETT, M.D., BOSTON.

In responding to the request of your committee to make a few remarks on the volunteer aid work of last summer, it seemed best to restrict such to some of the general considerations which would suggest themselves from an opportunity of seeing this work conducted under unusual conditions. From this standpoint the position of bodies of volunteer relief, particularly in these days of well-equipped facilities for meeting emergencies, is a question of great interest.

The work of the Massachusetts Volunteer Aid Association of last summer is so well known to you all, — probably the majority of those present were more or less intimately connected with its affairs, — that I do not intend to take your time with the details of any special department. It came into existence with the urgent demand at the time, filled its mission, and then was over. But now that it is a thing of the past, and yet is not too far distant for us to lose the active interest in its affairs and what it accomplished, there is much we can learn from the retrospect of the experiences during this time, and it is my object to briefly consider from this point of view the results of my connection with this Association in its work in Santiago.

Toward the latter part of July the officers of the Volunteer Aid saw the need of having in Cuba a representative of the Association, who should have charge of the distribution of the supplies, determine from personal observation what needs of the men at the front could be reached by this society, and act as the representative in its work out of the country. Many supplies which were fast collecting here had already been sent, but they were not in charge of any one, either on the way or after their arrival, and it was doubtful if they would reach their intended destination or receive the proper distribution; and these doubts proved to be well founded, for in the condition of affairs at that period every one had more than enough of his own work to do, and could not be expected to give attention to other affairs requiring so much time and attention. It was this position it became my privilege to take.

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[1] Read before the Massachusetts Medical Society, June 14, 1899, and recommended for publication by the Society.

The plan was to send such supplies as were at hand to Santiago, to have them distributed directly to the regiments according to the special needs, and to personally determine what might be the special requirements of the men at the time, which could be met by an independent organization. The real state of affairs at this time was, as you all know, much a matter of conjecture. Information was meagre and unreliable, but that there was distress and suffering, and particularly among the men who were not hardened by long training, was certain. It was known that sickness had appeared, and was on the increase, that it was approaching the rainy season, the worst of the year, in a province which had always been infected with contagious disease, and these conditions, combined with the fierce heat of the tropics, and the presence of so many troops crowded together, left no room for doubt of the need of aid in a general way. With these as facts were rumors of scarcity of so many necessary supplies, and although the probable exaggeration was recognized by all, the indication of the need of aid was plain. Until further information could be obtained it was proposed to send such supplies as would be needed by the sick and convalescent in the camps and in hospitals, both in the way of foods and clothing, while the special needs could be determined after arrival, and procured if such were possible.

The problem of reaching Santiago, and in the shortest time possible, was met by the officers of the Association in a fortunate way. At this time the province was closed to ordinary travel, no steamers except a few of the government transports were in this part of Cuba, and quarantine had been declared against the port; therefore it became necessary to reach the destination by an indirect route. Through the courtesy of the Boston Fruit Company the supplies were sent, and I took passage to Port Antonio, Jamaica, one hundred miles south of this part of Cuba, and from thence a small sailing vessel was chartered to complete the journey to Santiago. In this way the errand reached its destination early in August, a little over ten days from the time it was first considered as a plan.

Here, the conditions under which the men had been placed during the previous two months gives one the best idea of the position of an organization such as the Volunteer Aid in its effort to render assistance so far from home, and this applied particularly to the men of the volunteer troops, for whom the work was originally but not solely intended, who had not the opportunity to learn from experience or from training how to save their energy and avoid many dangers under conditions so unusual and trying even to veterans, and who would in consequence suffer more from the results of their exposures.

Without time for acclimation, these men had landed, after nearly two weeks' confinement on a crowded transport, had marched through an unusually rough and hard country, were two days in the fight, and for three weeks immediately following lived in the trenches for most of the time with no shelter either from the sun or the almost deadly rains. During this period they were on the short rations which their difficult position necessitated, and exposed during the day to the intense heat of a tropical midsummer, and at night to the damp chill found in these latitudes. From the time of the surrender of the city they remained camped in the small shelter tents under practically the same conditions. By the early part of August the prolonged exposures, heat, and unusual living had begun to show itself extensively in the very great debility among the men in general, and the breaking out of diseases. Fortunately the most prevalent were the forms of the climatic disorders rather than the contagious diseases, but the effect of this severe type of malaria on the men, already much weakened by the conditions of the previous two months, was much more disastrous than it would have been under any other conditions. There was no provision for the convalescents either as regards place or food, and since the fever usually produced digestive disorders, the recovery was extremely slow and subject to relapses, and this long absence from the ranks threw additional burdens on those remaining well. Added to this physical debility was the uncertainty of their detention on the island and this, with the knowledge that their work as troops was practically over, that they were merely waiting their turn to be taken home, and with the increasing disease which daily thinned the ranks of the men in active service, made the condition seem still more anxious, when the question of prolonging the stay was considered, and this in a city where the usual epidemic of yellow fever was thought by all to have already begun, and with conditions ripe for its development. It was in such a situation, the result of the sudden culmination of events, that properly-directed aid from an independent organization could be of great material help to tide over the emergency, although whatever one branch might accomplish could be but a comparative mite in the presence of such general need. The emergency which the officers in that city had to meet was an unusual one, both in character and proportion. The amount to be done was enormous, the conditions both of place and season difficult to combat, the facilities meagre, and the corps of workers small and already weakened by their hardships. It can be truly said that the improvement which took place, and the low mortality which finally resulted, was due alone to the strenuous efforts of the officials left in charge, in spite of their handicapped position, and of the lack of early aid in the way of suitable supplies and means from headquarters in this country.

In such an emergency the most important needs must receive first consideration, for something must give preference. So far as the troops are concerned, the sick must be attended to as best facilities will allow, the body of troops which make the working force must be cared for, and the convalescent sick must receive later attention. This is not neglect, but the only solution of the difficulty, and in times like this the independent organizations find their work waiting for them. It is to fill in the gaps which in the sudden emergency cannot be or are not provided for, and from the position far away from home cannot be filled without disastrous delay. The work naturally has but little to do with the well; such is not necessary, and would interfere with the system so necessary to maintain proper discipline.

I shall not enter into the detail of the work of the relief of this department during last summer. It would be enumeration of days of tiresome routine. The character of the work to be done and the direction in which to put it forth was only too evident. It remained only to do what was possible with the limited material and the conflicting circumstances of place and facilities, trusting that the effort would meet with success. Fortunately the stay of the volunteer troops in this section was not prolonged.

The relief work in a territory so remote from any base of supplies must consist in using material at hand to the best advantage; the supply will be short, and economy is necessary. The difficult problem is that of the means of transportation, and the method of distribution, for one ought not depend upon aid from those whom the object of the errand is to help, and who are already overburdened with their own duties of daily routine. The situation shows definitely along what lines the working of an organization of this kind should be carried on without conflicting in any way with the regular service, but rendering its aid where it is needed and welcomed.

The position of relief bodies has occasionally had criticism from various sources, too often, I fear, by those who in the time of stress have received their bounty. The criticism without a doubt confuses the question of the need of the existence of such bodies with the time that their work is needed, for so long as such campaigns as that of the past year are instituted, and so long as volunteer troops are used, there will be a time in campaigns when the work of such bodies will be welcomed to prevent avoidable suffering, and such loss of life as is not an incident to the active part of a campaign, for during campaigns of recent years the usefulness of such work has been shown too clearly, and although now with the advance in the departments of science, which shortens time and space, allowing emergencies to be met with greater ease and promptness, its work becomes more defined but none the less important.

The general operation of an organization of volunteer work in a campaign in foreign territory must be considered from a different point of view, from the distribution of relief at home within easy access of supervision, and of supplies of all kinds. An expedition of invasion would naturally have its own provision for the prevention and relief of these same conditions, and with time for preparation in these days, such would undoubtedly be done, and we may consider that there is a time when there will be the demand for volunteer aid, and such is in the early part of a campaign, particularly if begun as most are, with insufficient time for complete preparation, when the attention of the service is directed to providing for the certain requirements, and the possibilities which pertain to comforts of sick and requirements of convalescents, and of affairs which do not affect the regular service, which cannot receive the same attention, especially when arising from a condition of so complete unexpectedness.

Therefore, the work of such organizations is needed to supply the emergency needs, which take time to collect, and individual attention to properly distribute, and particularly during this early period, when there are conditions to be met which would not be found at a later time, and such was so clearly illustrated in the latter part of last summer. To new men, unused to the hardships, and in the waiting part of a campaign, and of whom it is not asked to become regulars or veterans, the advisability of mitigating some of the rigors of campaign life is evident, rather than sacrifice men to the hardening process, for the sake of the training alone. The situation calls for requirements not provided for in the haste of departure, or perhaps not belonging to the regular service, and in no way is this shown so distinctly as in the case of convalescents. There are some kinds of work, notably among such are those of humanitarian nature, which require individualism, and when carried on by too large organizations lose this essential by too much of detailed duties. Volunteer work also has the advantage of being unrestricted by the slow-acting and cumbersome regulations which are the necessity of a large organization, and is able in consequence to insure that relief may reach its destination promptly, and without the otherwise certain delay. It is necessary that a relief expedition should be complete in itself, that an independent source of relief supply should be maintained, with such provision for its distribution that demands on it can be met without delay. The particular need for this period and for this kind of work is for not only what may be classed as comforts of the sick, but for the more general care of the convalescents.

The method of procedure must vary with the different instances, but the safe rule is to reach the men through official lines, and in the direction indicated by them. In positions like those of last summer, the maintenance of army organization and system is unquestionably essential; the greater the emergency and the difficulties, the more important this becomes. By working in this way all possible conflict with personalities or with regulations are avoided, and the danger of preference is not to be feared. Aid offered in this way was always willingly accepted and appreciated, and gave the assurance of reaching where it was most needed, rather than to the most apparent distress, which too often would be the nearest at hand.

An official in charge knowing the conditions and the needs of the whole has the best opportunity of pointing out the place of greatest demand. A commissary who is daily searching for the required stores for the camp knows better than any one the kind of foods most needed and where; and the surgeon knows the requirements of his hospital outfit, whether medicine or foods or special hospital supplies. In this distribution of supplies, when from the distance from home and the hurry of departure, economy is most essential, this care in distribution becomes most important to a successful undertaking.

Viewed from the experience of last summer, in order that this work should be carried on successfully, it is necessary that:

(*a*) It should be directed toward supplying such needs as have resulted from the confusion and hurry in the initiating of a large campaign.

(*b*) It must be carried on with deference to the judgment of the regular officers in the command, and should be particularly directed to supply the needs which have been found lacking, and which they better than any others are in a position to appreciate.

(*c*) The work must be accomplished without call on the regular service for aid, either in transportation or distribution; that is, it must be a stream of supply from an independent source, and one whose presence is felt only by the relief it brings.

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Clinical Department.

THE REPORT OF A CASE OF PUERPERAL ECLAMPSIA WITH COMPLICATIONS.

BY EDMUND E. HILL, M.D., SUNCOOK, N.H.

I PRESENT for your consideration the report of a case which occurred in my practice about a year ago, and which I deem interesting and worthy of note, not so much for the case *per se* as for the complication which arose during patient's illness. The history is as follows:

Mrs. K., age twenty-seven, American, of medium height and well nourished, called at my office April 2, 1898, and engaged me to attend her during confinement, which, she said would be about the first of June; she was then seven months pregnant. She has during this time suffered no inconvenience whatever, except some slight nausea and vomiting the second and third months.

For a week previous to consulting me she had had slight pains in the lumbar region, and for this reason, together with increased frequency in micturition, she thought she must have some kidney trouble. I make it a rule, if possible, to examine the urine of every pregnant woman engaging my services at some time during the latter months of pregnancy. I did so in this case not only for my own satisfaction but for the soothing influence it might exert upon the nervous system. Result of analysis negative, or, in other words, normal. I did not think it necessary to examine it microscopically. A few days later I made known to her the result of the analysis and noted its pleasing effect.

I heard nothing more from her until Sunday afternoon, May 1st, just about four weeks from the time of her former visit. She was now eight months along, complained of a severe headache located near base of brain with darting pains in neck; five days before had had a similar headache lasting two or three hours; had not felt quite as well since first attack. Prescribed Antikamnia in five-grain doses and a solution of bromide of potassium to be taken at bedtime. Was aroused from slumber the next morning at 2.45 by Mr. K., husband of my patient, who stated that he had been awakened from sleep about one o'clock to find his wife sitting up in bed grasping her head with both hands and complaining bitterly of a severe pain in the back of her neck. In a few seconds she threw up her hands and fell back in a spasm; he wished I would go and see her as soon as possible. I went with fear and trembling. Upon my arrival found she had had in all three convulsions, each lasting for a few seconds; had not had any during last half hour; was feeling quite well but very excitable. No dilation of os uteri found upon examination gave 30 grains each of bromide of potassium and chloral hydrate per rectum, which produced a quiet sleep; left a solution of the six bromides, one teaspoonful to be given every two hours, directing them to call me at once should she have another spasm. I left for a few hours. For unavoidable reasons it was 3 P. M. before I saw the case again; had had one more convulsion during my absence, making four in all; was now in a semi-stupor. I informed the husband of the true condition of affairs, and that I desired a consultation. Dr. Walker, of Concord, was summoned by telephone, and in less than an hour was upon the spot. It was decided that patient was suffering from eclampsia, and the first and only thing to do was to empty the uterus as soon as possible. Patient was etherized, manual dilation performed, and a dead child extracted after some difficulty, by version; during the whole time all necessary antiseptic precautions were observed. Called at 9 P. M., patient had recovered from ether fairly well; was quite comfortable. Temperature was 99°, pulse 100, and respiration 18.

May 3d. Rested easy during night; could pass no urine; catheterized and drew away eight ounces. Temperature 101°, pulse 115, respiration 20.

May 4th, third day. Taking nourishment well; lochia normal; temperature 101½°, pulse 115, respiration 20. Ordered magnesium sulphate, one drachm every hour until bowels moved freely, hoping it might also reduce the fever.

May 5th. Bowels moved three times from salts given the preceding day. Temperature 102½°, pulse 120, respiration 24. Ordered a vaginal douche of corrosive sublimate 1-3000 to be given morning and evening.

May 6th, fifth day. Temperature 102½°, pulse 120. Odor from lochia quite disagreeable; complained of pain in the left iliac region, although no localized point of tenderness could be found.

May 7th. Temperature 102¾°, pulse 122; pain over region of bladder; urine loaded with albumen; pain on left side more severe; lochia very offensive. Introduced a Sim's speculum into vagina and scraped out uterus with a dull curette, following this with a uterine douche (corrosive sublimate 1-5000).

May 8th. Is resting fairly well nights; urine high colored and concentrated. Left a solution of sweet spirits of nitre and citrate of potassium.

May 9th. Temperature 102°, pulse 120. Gave another uterine douche; seems a little weak this morning. Ordered a teaspoonful of brandy in milk every two hours. Left calomel, five grains, and bicarbonate of soda, twenty grains, to be followed in a few hours by a rectal enema.

May 10th. Summoned this morning by telephone; patient had had a secondary hemorrhage, lost considerable blood and was quite pallid when I arrived. Complained of not being able to see very well. Temperature 102°, pulse 124. Ordered brandy every hour in drachm doses, small doses of ergot, and enough morphia to ensure rest; pain in side not as severe.

May 11th. For the first time since May 1st had a natural movement of the bowels; troubled a good deal by gas; tongue moist. Temperature 103½°, pulse 132. Ordered tincture of nux vomica, five drops every three hours; nourishment every two hours.

May 12th. Temperature 100¾°, pulse 100. Tongue moist; gas less troublesome; bowels not as distended; vaginal douche every six hours. Discharge from uterus more abundant when lying on right side.

May 13th. Temperature 100°, pulse 108; restless; complains of shooting pains in right lumbar region and both sides of chest. Codeine, one-quarter grain every three hours, kept patient easy.

May 14th. Temperature 99°, pulse 108; complains of pain in left groin. Left thigh and leg swollen, pearly-white and extremely tender; wrapped the limb in cotton batting and covered with oiled silk.

May 21st. Just one week from last report. During this time there has been very little change of temperature. Tongue dry and hard; neuralgia troublesome; swelling in limb has diminished. Discharge from uterus very abundant. Examination by vagina revealed nothing of importance. Examination of abdomen. From a point corresponding to the left ovary and extending upward into the left lumbar region and to within about two inches of the median line could be felt the elongated outline of a tumor-like mass about the size of a large cocoanut. On palpation a gurgling sound could be heard followed immediately by a profuse discharge from the vagina, and patient would complain of feeling faint.

May 22d. Temperature 102°, pulse 120. For the first time in three weeks passed a very little urine without the use of catheter. Have washed out bladder with plain water every morning and night for a week.

May 24th. Nurse informed me patient had had a bad spell at 5 A.M.; came near fainting while being douched; recovered under two drachms of brandy. Ordered ten minims of digitalis every four hours. Temperature 102°, pulse 120.

May 26th. Swelling in left leg very nearly gone; discharge from uterus profuse as ever, and very offensive; taking nourishment well, consisting of egg-nog, milk and brandy, malted milk, Mellin's food, etc. Sat up ten minutes to-day.

May 28th. Temperature 99°, pulse 120. Complains of a good deal of pain in left side of abdomen; is getting deaf; complains of ringing and buzzing in ears, particularly the right.

June 1st. Is taking nourishment well but is daily growing thinner; sits up five or ten minutes a day; restlessness is controlled in a measure by quarter-grain doses of codeine given every three hours.

From June 1st until June 12th, (time of patient's death) the temperature ranged from 99° to 102°, pulse 108 to 128, respiration from 30 to 40. In the meantime Dr. Walker was consulted as to the advisability of operating upon this abscess, but, as it was discharging freely of itself, it was not thought best. Patient continued to grow weaker day by day and finally succumbed June 12th.

With your permission we will take a brief *résumé* of the case: As near as I can learn from those who were intimately acquainted with our patient, she had suffered from more or less pain in her left groin during the entire period embraced in the eleven months of her married life. From an authentic source we also learn that a few months before marriage husband had contracted gonorrhea, and during winter and spring preceding birth of child had been a great sufferer from articular rheumatism so called, presumably gonorrheal arthristis. At the beginning of the ninth month of gestation was seized with puerperal eclampsia, after delivery. She developed a cystitis which refused to yield to either local or general treatment, and the use of the catheter could not be dispensed with during the entire six weeks of sickness. Had a secondary hemorrhage on the tenth day, which weakened patient much. First complained of pain in left groin, which afterwards extended up into left lumbar region about the sixth day, the discharge began at this time; this pyosalpinx or pyoöphron will be referred to later on. The neuralgic pains were first noticed on the thirteenth day and continued first in one place, then in another, until the end. Phlegmasia alba dolens was first noticed the fourteenth day, beginning in the left thigh and working downward. I look upon this as a secondary phlegmasia due to septic absorption.

During illness temperature ranged between 90° and 103°, pulse between 108 and 132, respiration between 20 and 40. I have noticed that when the pulse remains above 100 for any length of time in an obstetrical case, trouble may be looked for before the case is discharged.

Treatment. — Although all antiseptic precautions were taken in regard to catheter and soft parts, yet a cystitis developed about the ninth day. Washed out bladder in morning with plain water and at night used a saturated solution of borax, and opium in suppository form for relief of pain, gave internally diuretics and demulcent drinks, such as elixir buchu and acetate of potassium, twenty-grain doses of acetate of potash in half a tumbler of water, lithia and apollinaris water, for gas in stomach and bowels, five drops of tincture nux vomica every three hours, as a tonic, tincture chloride of iron, ten drops every four hours; for the heart, tincture digitalis and cactina pellets.

Nourishment. — Egg-nog, malted milk, Mellin's food, beef tea and plain milk, nourishment to be taken every two hours during day and every three hours during night, with very few exceptions; amount taken each time, one cupful; brandy, whiskey and wine administered the last three weeks.

In conclusion, I will say that in my opinion this pyosalpinx did not originate at time of patient's illness but rather nine or ten months before. You will recall to mind my previous statement that she had suffered from more or less pain in the left ovarian region since marriage, and that at or about this time her husband was reported as having gonorrhea. Might it not be possible that the gonococci entered the uterus at this time, found lodgment in the Fallopian tube, kindling a smouldering fire from which originated a chronic salpingitis, accounting for the pain, and which was finally fanned into a blaze which swept everything before it. The result of this salpingitis closely resembles in its effect the destruction which follows a stroke of lightning, differing only in its mode of onset. We have all watched a thunder-shower during the summer months, have seen the flash of lightning and immediately after heard the thunder-clap; in this case the flash was perceded and not followed by the clap.

The oft repeated question, "Is marriage a failure," can, I think, in this case be answered in the affirmative.

A NEW ASSOCIATION. — We learn from the *Journal of the American Medical Association* that an association for the promotion of public hygiene has been organized in Germany by V. Leyden, Rübner and other prominent members of the profession, and officials. Lectures, meetings, circulars, everything tending to educate the people in matters of hygiene is included in its scope.

Medical Progress.

REPORT ON MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D.

(Concluded from No. 7, p. 166.)

Marandon de Montyel[10] has studied the condition of the knee-jerk in the three periods of general paralysis in the same patients and has come to the following conclusions: In general paralysis the knee-jerk is much more frequently abnormal than normal; it is much more frequently exaggerated than diminished, and moderate exaggerations are more frequent than marked. It is more frequently altered in the first than the second and in the second than in the third period. It is most often exaggerated in the depressive form of general paralysis. Frequency of exaggeration of the knee-jerk is in inverse ratio to the frequency of troubles of speech. The exaggeration is not due to the suppression of cerebral influences, since it has its minimum frequency in the last period, where the suppression is, on the contrary, at its maximum. The degree or form of the alterations of the knee-jerk has no prognostic value. It is not correct to say that the preservation of the knee-jerk is associated with a minimum of physical signs, since this preservation is more frequent in the third period than in the other two. It is not uncommon that, in remissions, the alterations of the knee-jerk persist when the physical signs have so far improved as to pass unperceived. This is an important element to investigate in determining whether the cure is only apparent. In alcoholic patients as compared with syphilitic the knee-jerk is more often altered, either exaggerated or diminished. It is impossible to establish any relation between the alterations of the knee-jerk and the disturbances of sensibility to pain or touch.

The same writer[11] has also studied the condition of the tactile sensibility in the same patients in different periods of general paralysis, and has come to the following conclusions: In 70 per cent. of the investigations he succeeded in confirming the condition of the sensibility, the failures being more numerous in the more advanced stages of the disease. In 12 per cent. of the cases he found the tactile sense altered, exaggerated, diminished, lost or delayed, but in uncomplicated cases there was no form of paresthesia. The changes were always general and never localized. The rarest change was exaggeration, the commonest, diminution. The sensibility seemed to be more involved with the greater progress of the disease but the tactile sensibility was always found normal in remissions. It was more affected in states of agitation than in calm states and it was always normal in depressive forms with hypochondriacal ideas. The exaggeration or loss of sensibility was never observed in periods of calm, but diminution was observed in any state of the disease. The disturbances of touch are commonest in the expansive form and least common in the demented form. It was impossible to note any relation between the condition of touch and the habit, which many paralytics have, of pulling off the clothing. The alterations in the sense of touch in the first two periods of the disease were most often seen in patients with more marked motor troubles. Disturbances of touch have been found only in connection with alcoholism and syphilis, and were more frequent in alcoholic subjects than in syphilitic. A transitory anesthesia, preceding motor troubles, is the only alteration of sensibility of aid in the early diagnosis of general paralysis. Disturbances of touch seem to indicate, in the first period, that the progress of the disease will be neither hyperacute nor very long.

CONGENITAL PREDISPOSITION IN SEXUAL PERVERSIONS.

Féré[12] insists upon the importance of a congenital predisposition in the causation of perversions, and while he admits that accidental circumstances play an important rôle in the determination of the character that the perversion assumes, he believes that usually, when an accidental exciting cause alone seems to have given rise to the condition, there is probably a congenital predisposition. He states that every one is subjected repeatedly to the same causes that give rise to perversions in some individuals, or to precisely similar and quite as active causes, but that perversions arise only in those who are predisposed, and in whom the causes, therefore, become active. Féré reports a number of cases of perversion in which he was able to trace a distinct abnormal tendency in early infancy and childhood, even before actual perversions were manifest; and although the perversion seemed to follow a cause that was purely accidental and acquired, nevertheless, the history of these cases shows that the cause acted upon abnormally receptive individuals. As to the treatment of this condition, he says that anything that tends to cure it is allowable, whatever it may be; but that heterosexuality is abnormal in these individuals and not physiologic, and that the substitution of heterosexuality for homosexuality does not fulfil a physiologic function. He closes by saying that the ideal to be achieved in these anomalies is not to give pleasure from normal functions, but to lead the subjects to become continent.

MORAL INSANITY.

Müller,[13] after a very thorough review of the literature, attempts to give a clinical description of moral insanity. It is probably a congenital mental disturbance, the characteristic of which is the absence or diminution of the intellectual feelings and aims. In some cases the intellect is disturbed, and the patient is more or less of an imbecile; in others this does not appear to be the case, the patients having a high intellectual development. The symptoms appear in childhood, and are characterized by a peculiar lack of affection and obedience, a tendency to cruelty, a failure to perceive those elements of life which are commonly regarded as noble or beautiful. The patients have neither conscience in their conduct nor repentance for their misdeeds. They are egotistic, selfish and irritable. They often show in early life various forms of perversion, which do not disappear, but rather become more complex with growth. Often these patients have most fantastic ideas or fail to perceive error in their normal relations. Sometimes they are extremely credulous, nearly always showing marked tendency to mendacity and swindling. A curious feature is the skill with which they frequently defend or excuse their misdeeds. Left to themselves, they usually lead the life of vagabonds or tramps. Their crimes are often apparently aimless; they steal not so much for the object stolen as for the perpetration of the act. Stigmata of degeneration are frequently present. The cause is generally supposed to be a tendency inherited from parents of neuropathic characteristics. It is possible, however, that diseases of the brain occurring in early childhood may be responsible for some instances. The diagnosis is to be made (1) by the fact that the changes are present in early youth; (2) the existence of a neuropathic ancestral condition; (3) the presence of certain characteristics that belong to the so-called hereditary degenerative insanities; (4) the existence of psychic or nervous anomalies; (5) the existence of certain deviations from the normal structure of the body; and (6) intellectual abnormalities. Physiologically, Müller concludes, with an approval of Berze's belief, that the condition is due either to an abnormally facile movement of the associations that interferes with the fixation of perceptions and ideas and is associated with imbecility, or an early development of the critical faculty that leads its possessors to deny authority, and, thereby, to lose the feeling of gratitude, filial affection, etc. The prognosis is usually unfavorable. The treatment consists essentially in the removal of such cases to suitable institutions, where they may be watched, and, as far as possible, improved by education. It must be remembered that when, under such circumstances, the patient apparently improves in character restoration to society is almost invariably followed by a relapse. The prophylaxis must begin with the parents. In general it may be said that if these are alcoholic, there is greater reason to expect moral insanity in the offspring.

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[10] Annales Med., Psych., April, 1898.

[11] Arch. de Neurol., Nov., 1898., March, 1899.

[12] Revue de Médecine, Nov., 1898.

[13] Archiv für Psychiat., xxxi, 325.

THE MEDICO-LEGAL ASPECTS OF HYPNOTISM.

It is generally conceded that hypnotism is a pathological and not a physiological condition. When resorted to too frequently it is liable to bring on mental deterioration. It may lead to chronic headache and hysteria; it may induce an outbreak of insanity; in a few cases it has been directly or indirectly responsible for the death of the patient. The question whether the physician is justified in using a remedy that presents so many dangers to life in cases of diseases that are so little dangerous as are hysteria and neurasthenia, Kuh[14] answers emphatically in the negative. His experience has been that suggestion in the waking state is almost equally efficient. Hypnotism should be used as a therapeutic agent only when other methods of treatment and suggestion have failed. The question, Can the hypnotized fall victim to crime? has been answered affirmatively by those whose experiments were made in the laboratory, but forensically cases confirming this assertion are exceedingly rare. That the hypnotized can be used as a tool in the service of crime has been positively stated by those who have made experiments in the laboratory. From practical life, however, Kuh could find only one case in substantiation. The reasons why hypnotism is so rarely used for criminal purposes are that: (1) Not every person can be hypnotized even when willing; (2) not all suggestions are acceptable to the hypnotized, and those that are particularly distasteful to him or foreign to his habits and character are often rejected. Thus, Richet has published the following rather amusing example: One of his subjects, who allowed himself to be metamorphosed without difficulty into an officer, a sailor, etc., refused on the contrary, with tears in his eyes, to be changed into a priest, a refusal that the character and habits of the subject and the environment in which he had lived sufficiently explained. (3) There is in the majority of cases no blind, absolute obedience. The hypnotized may awake at any moment during the proceedings, and this is particularly liable to occur when his suspicions are aroused by anything that is going on around him, or if an inconvenient suggestion be given just before the time arrives at which the suggestion is to be executed; (4) complete loss of memory for what has been going on during hypnosis is not by any means a rule lacking exceptions; (5) finally, if all of these difficulties have been overcome, the way in which the criminal act would be executed would immediately suggest the existence of hypnotic influence. It would be an automaton that commits the crime, unconscious of antecedent and surrounding circumstances, and uninfluenced by the presence of witnesses or by any unforeseen event. The tool being supposedly devoid of all reasoning power in this state, it would be necessary to give such suggestions as would cover all possible contingencies that might arise during the commission of the crime; otherwise the deed would necessarily be done in a clumsy and impulsive manner. These are the principal reasons why hypnotism is so rarely used by the criminal classes. As to the responsibility of the hypnotized, if the possibility that the person was caused to commit the crime by hypnotism is acknowledged, then such a person must be considered irresponsible for his action, for hypnotism is a pathologic state in which the will-power of the subject is affected to a greater or less extent.

FAMILY CARE OF THE INSANE IN RUSSIA.

Sparsky[15] has made an inquiry into the condition of the insane boarded out into the care of peasants in certain villages of Russia. The number thus boarded out has been 363 in three years, and at the end of that time 255 remained in the villages. The reasons for the return of a certain number of the patients to the asylum are very numerous. The commonest is a period of excitement, during which time it is impossible for peasants in poor circumstances to care for the patients in winter, where they have sometimes only a single habitable room. It is wholly exceptionable to send them back because of ill-treatment while under the care of the peasants or for abuse of alcohol. The diet was almost wholly vegetable, meat being served only once or twice during a fortnight, yet three-fourths of the patients were in an excellent state of nutrition and most of the rest were old persons. Two-fifths of the patients presented cases of terminal dementia; epilepsy, idiocy and other forms of dementia coming next in frequency. Most of the patients worked, aiding the peasants in the fields; they worked without being forced to do so, and their labor is so satisfactory to them that they do not desire to return to the asylum. Many patients are attached to their hosts, and *vice versa*. The patients are closely watched by a supervisor, who lives in the village; the physician comes once a week, the asylum being seven kilometres from one village and three from another. The sexual conditions are carefully watched. In three years there has been only one case of pregnancy in a patient and one attempt at rape on the part of a patient.

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[14] American Journal of Medical Sciences, December, 1898.

[15] Questions de Neurol. et de Psych. Med., vol. ii, p. 513, 1897.

THE ROLE OF AID SOCIETIES FOR THE INSANE.

Morel,[16] after commenting on the increasing and rapid development of public opinion regarding this question, and on the consequent activity of organized work in connection with it, divides his subject into the following heads: (1) What can be done for the lunatic *before* his removal to an institution? (2) *during* his period of seclusion? (3) the assistance of the family deprived of his support; (4) what ought to be done for a patient so far recovered that seclusion in an asylum is no longer necessary? (5) the development of public assistance; (6) the special education of children who have inherited tendencies to mental disease; (7) provision of special asylums for children of defective development and idiots; and (8) means of diminishing the causes which might predispose to insanity.

Dr. Morel considers that it is the duty of all charitable organizations to extend their patronage to the insane and their families; that suitable members should be set apart for visiting reported cases, and as far as possible for treating those for whom enforced seclusion is deemed unnecessary. In the case where seclusion is absolutely inevitable, the patient ought to be guided and watched over to the very doors of the asylum, and his family protected, helped, and, if need be, supported during the period of absence of the bread-winner out of the funds of the society or societies undertaking such work. Thus, keeping each patient well in sight during his seclusion, the society must be ready to take him by the hand immediately on his release, whether entirely or partially recovered, and to continue its good offices until he is once more able to resume his place as bread-winner and responsible member of the social community.

As necessary side issues of the main question, Dr. Morel advocates the establishment of special asylums for the development and education of those innocent victims of parental weaknesses who are yet capable of moral and mental training, and for the protection and care of such as are too hopelessly sunk in imbecility to need other than the usual bodily attention which their condition demands.

In conclusion, Dr. Morel sketches out a plan for the formation, organization and administration of a society having for chief object the duties marked out above, impressing on his readers the growing necessity for such societies in view of the steadily increasing attention given throughout all the countries of Europe to mental disease and its victims.

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Reports of Societies.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, held at the Academy of Medicine, in New York City, May 9, 10 and 11, 1899.

FIRST DAY.

The opening address was made by the President, Dr. Beverley Robinson, of New York, the title of which was

THE IDEAL PHYSICIAN — HIS CHARACTER AND ATTAINMENTS.

He referred to the noble example of the men whose portraits adorned the hall of the Academy of Medicine, in which the meeting was held. Their lofty character and superior attainments made them the leaders of men and medicine in their day and generation. He inveighed against the spirit of commercialism, and charged much of this to the invasion of specialism, for the general practitioner was and is ever cast in a different mold and has other purposes. Even though only few, comparatively, may have a sordid spirit, it should be discountenanced and banished. He exhorted his hearers to do their utmost, both individually and collectively, to elevate the social and scientific plane of their profession. They must be leaders in reform, not alone in sanitary and hygienic matters, but in everything that concerns the public good, whether in politics, morals or education. Their education must include the heart as well as the mind, and while not intruding on the domain of theology, the physician could and should minister to the soul as well as the body and cultivate sympathy with his patients. He cautioned against the undue influence of supposed scientific advances as against the results of one's own experience, and cautioned the physician not to allow his practical judgment to be overruled. He must direct the specialists' work and carefully provide that no narrow view be taken of the patient's ailments. In this way he will be of the greatest benefit to the patient and advance practical medicine. Laboratory work should be fostered, but the province of the clinician should not be ignored.

Dr. Vincent Y. Bowditch, of Boston, read a paper entitled

THE SUBSEQUENT HISTORIES OF "ARRESTED CASES" OF PHTHISIS TREATED AT THE SHARON SANITARIUM.

Dr. J. Edward Stubbert, of Liberty, N. Y.: I was very much interested in the paper of Dr. Bowditch, bearing, as it does, upon the curability of incipient cases of phthisis, and emphasizing the remarks made by another member of the Association in regard to the importance of nourishment *versus* climatic influence. I think the results obtained by Dr. Bowditch are very encouraging, especially when we bear in mind the fact that the work was carried on in a climate which is not considered particularly salubrious.

The temporary absence of bacilli in the sputum of tuberculous patients is well known. I have in mind at present a patient of Dr. Janeway's who has a large cavity in the upper portion of the left lung and a fibrous condition of the lower portion of the lung, in whose sputum the bacilli were absent for five weeks, although they were frequently searched for by three different examiners. It is not uncommon in my experience in incipient cases to get physical signs without being able to detect the presence of bacilli.

Even in sanitariums, special attention must be given to the complications of pulmonary tuberculosis: otherwise, such complications will handicap the patient and interfere with his recovery, even in the best of climates.

Dr. Newton: About half a year ago, my friend Dr. Stubbert sent a girl from the Loomis Sanitarium to her home at Montclair to die. She was suffering from advanced pulmonary tuberculosis. Since her return home, in spite of the fact that she has been living in very unhygienic surroundings in a tenement house, she has gained twelve pounds in weight and apparently is going to get well in spite of us.

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[16] Pamphlet entitled, Quel doit être la Rôle du Patronage à l'égard des Aliénés? by Dr. Jules Morel.

Dr. Francis H. Williams, of Boston: I would like to ask Dr. Bowditch what his experience has been with the treatment of cases of pulmonary tuberculosis in the wards of a general hospital, during the limited time they are kept there, compared with the sanitarium cases. I have often been gratified to see such patients improve in a general hospital in a remarkable manner simply on the food and care such a hospital affords.

Dr. Bowditch: Poorly nourished patients suffering from pulmonary tuberculosis who are admitted to a general hospital often improve temporarily, which is doubtless due to the better food and care they receive, but they cannot get the treatment there that they receive in a special hospital. They cannot get the same amount of fresh air that they would in a properly regulated sanitarium. If we could treat this class of patients by themselves in hospitals especially constructed for their use, we could do more for them even in the city.

Dr. Edward R. Baldwin, of Saranac Lake: I would like to say that the authorities at the Adirondack Sanitarium are in constant correspondence with 115 patients who have been discharged during the past ten years. Most of these are in fairly good health. Some have relapsed slightly, but the majority are able to reside at their old homes and resume their usual occupations.

Dr. Stubbert: I would like to ask what distinction Dr. Bowditch makes between arrested cases and apparently cured cases.

Dr. Bowditch: I simply adopted the term "arrested" because I regarded it as a more appropriate term to apply to these cases than "cured," unless a long period has elapsed without a return of the symptoms. I apply it to every case where definite tuberculous symptoms have existed when cough, expectoration and fever have ceased and the general condition signifies a return to normal conditions, even though abnormal physical signs may persist indefinitely.

Dr. Francis H. Williams, of Boston, read a paper on

RÖNTGEN RAY EXAMINATIONS IN INCIPIENT PULMONARY TUBERCULOSIS.

He had examined about 165 cases of pulmonary tuberculosis with the x-rays. His static machine had four revolving plates, six feet in diameter, and four fixed plates, six feet, four inches in diameter. The author considered (1) cases with slight physical signs, but no râles; (2) those without physical signs, that is, whose lungs had been found normal by auscultation and percussion. It was shown in the second group of cases, five examinations with histories having been cited, that the x-ray examination gave warning of tuberculosis before any departure from the normal was obtained by auscultation and percussion. One reason for this is that if the density is much below the surface of the lung as in central pneumonia, its presence is not recognized by auscultation and percussion, but a shadow of the consolidated portion of the lung is cast on the fluorescent screen. The shadow is also cast by a slighter degree of congestion than can be revealed by auscultation and percussion. Dr. Williams has proven experimentally by shadow tests that a lung in pneumonia or tuberculosis if sufficiently diseased will offer ten times or more resistance to the x-rays than the healthy lung.

The x-ray examination enables the physician also to recognize some old or latent areas of tuberculosis which might otherwise be overlooked. Tuberculosis may be associated with bronchitis or emphysema and thus be more quickly recognized. Dr. Williams had had eight cases of the former and nine of the latter combination in which the diagnosis was corroborated by the discovery of tubercle bacilli.

Dr. Williams rightly claimed that we have in the fluorescent screen a more ready, convenient and delicate method of recognizing an abnormal condition of the lung than we have in x-ray photographs, and the screen has the advantage of revealing the mobility of the diaphragm and the heart.

Dr. Knight: I have had the opportunity of examining quite a number of Dr. Williams's cases, and in many of them, although I could find no physical signs by auscultation or percussion, the rays revealed signs of incipient tuberculosis. The fact should be borne in mind that physical signs of consolidation should not be looked for at a very early stage of the disease. I see patients for months in whom I can find distinct localized catarrhal signs without any signs of consolidation or any change in the percussion note. I hope that men who have had practical experience with the Röntgen rays in this connection will continue the discussion.

Dr. Stubbert: I was interested in listening to Dr. Williams's paper and comparing his remarks with those made last year. This comparison shows conclusively that satisfactory progress is being made from month to month in this field of research, and it is apparent that nothing in the treatment or diagnosis of pulmonary tuberculosis has made such great strides recently as the use of the x-rays, especially in diagnosing incipient cases. Another point of interest is the relative value of the fluoroscope and the fluorescent screen. Last year I stated that I had abandoned almost entirely the use of the former for the latter; since then I have not used the fluoroscope in more than three or four cases, as a screen gives a much better picture.

Dr. Williams's remarks have strengthened me in my belief that radiographs are not satisfactory. I have never been able to successfully photograph an incipient infiltration in the lung, and others have had the same experience.

I am fully in accord with the statement which has been made that the use of the x-rays should be invoked in every doubtful case of pulmonary tuberculosis. As Dr. Otis has said, we cannot depend absolutely upon tuberculin. The peculiarities of the patient may mask the diagnosis. I have yet to see an incipient case that could not be accurately diagnosed by means of x-rays. We may sometimes be misled by a slight thickening of the pleura at the apex, but this occurs very rarely, and such a condition probably cannot exist without some slight underlying morbid process of the lung. The x-rays are also valuable in cases where there are scattered foci throughout the lung, which on account of their smallness do not yield physical signs. These cases can be very accurately diagnosed and the area definitely mapped out by means of the fluorescent screen.

I was also interested in what has been said regarding the use of the x-rays in emphysema and bronchitis. In the former, very definite physical signs have been obtained, but in bronchitis we have not been able to do anything with them.

Dr. Langmaid: I am astonished at the limitation of the movement of the diaphragm with such slight abnormal conditions of the lung. I never suspected it before.

Dr. Williams: In nearly, if not quite, all of the cases to which I referred in my paper there were no râles. As regards the value of x-ray photographs in comparison with the fluorescent screen, thus far, in my experience, the latter will detect many abnormal conditions earlier and better than the former. I also regard the fluorescent screen as superior to the fluoroscope.

Dr. S. G. Bonney, of Denver, read a paper entitled

SUGGESTIONS CONCERNING EARLY DIAGNOSIS IN PULMONARY TUBERCULOSIS.

He analyzed his recorded cases, numbering 546, seen in private practice and continued under observation for a considerable period in Colorado, although contracted elsewhere. Seventy-one per cent. of these arrived in that State with distinct evidences of tubercular infection in each lung; 19.2 per cent. had well defined cavities. The average time of delay in the cases was a little over eighteen months; 20.2 per cent. presented the history of a sudden hemorrhage as the first symptom distinctly referable to the disease.

The thorough and painstaking examination of the chest immediately upon the development of suspicious symptoms, and its frequent repetition if necessary, will usually suffice through the detailed application of the principles of auscultation and percussion, in establishing for clinical purposes a sufficiently early diagnosis. As a matter of fact, such an examination is seldom made until a provisional diagnosis has become apparent from the rational symptoms, and the consultant at once recognizes physical evidences of advanced infection. Is it not, then, of practical importance, prefatory to a consideration of the more recent aids to the recognition of consumption, to continue to emphasize a more strict and conscientious adherence to the principles of physical diagnosis now admittedly ignored in so many instances? Apropos of this I would especially condemn:

(1) Delay in instituting any physical examination whatever until long after the development of pronounced constitutional and pulmonary impairment.

(2) Failure to examine on the bare skin, the presence of clothing effectually preventing any approach to accurate results.

(3) Neglect to examine the entire chest, the bases, interscapular spaces, and axillary regions being frequently overlooked.

I would deplore particularly the existence of:

(1) Erroneous conceptions concerning the significance of the absence of percussion-dulness at the apices, an active process often being capable of recognition by ausculation considerably before the evidences of consolidation are apparent.

(2) The non-recognition, in the absence of râles, of the various modifications in disease of the normal respiratory sounds.

(3) Inaccurate interpretation of localized diminished intensity of auscultatory sounds, elevation of pitch, harshness of quality, and prolongation of expiration.

I would severely criticise:

(1) Failure to utilize cough preceding forced inspiration in eliciting the presence of slight moisture in the finer tubes.

(2) The non-appreciation of the almost pathognomonic significance of a circumscribed bronchiolitis, even in the absence of dulness or other auscultatory signs.

Dr. Frederick I. Knight, of Boston: I wish to repeat here the statement which I made in my remarks on this subject last year, namely, that the early diagnosis of pulmonary tuberculosis should not be made for the sake of sending your patient to Colorado or anywhere else, but that it should be made in order that the proper treatment may be instituted at once.

In regard to the presence of bacilli in the sputum in the earlier stages of the disease, I must say that my experience rather differs from that of Dr. Bonney. I have very rarely failed to find the bacilli in the sputum of patients who present themselves to me, and I see many cases early in the course of the disease. It is true that they are patients with cough, and usually with a little expectoration. The tubercular disease that develops without cough naturally falls into the hands of the general practitioner.

According to Dr. Bonney's statistics, the hemorrhagic cases are the ones which delay longest before going to Colorado. This is interesting, and is in line with the pretty generally admitted fact that those cases pursue a longer and usually a more favorable course than the other types of the disease. They for a long time may complain of very little cough or expectoration, and the disturbances of their general condition is not severe enough, in their opinion, to oblige them to consult a physician or adopt any radical measures of treatment.

Dr. John O. Roe, of Rochester: There is one diagnostic feature in connection with this subject which I consider one of the most important and which has been overlooked. I refer to a laryngoscopic examination, which I think should be made in every case of suspected incipient pulmonary tuberculosis. I quite agree with Dr. Knight that the bacilli may usually be found at a very early stage of the disease; in fact long before you can detect any marked physical signs, and even prior to this the laryngoscope will reveal a condition of the larynx which, to the skilled laryngologist, will indicate the presence of incipient pulmonary tuberculosis. The changes in the larynx are characterized by an anemic condition of the mucous membrane, due to interference with the circulation of the parts, and indicating pulmonary involvement.

Dr. R. H. Babcock, of Chicago: Dr. Bonney's paper was so complete that it would seem as if there was hardly room for anything more than favorable comment upon it. Nevertheless, I should like to speak of what struck me particularly, and that is the very large percentage of his cases, namely, 71 per cent., who had been kept at home for varying periods before they were sent away for climatic treatment. The doctor's conclusions were that these cases remained at home chiefly or largely because of delayed diagnosis. That unquestionably is a correct conclusion in many of them, but is it a legitimate one in regard to all of them? Is it not true that a very large number of patients are kept at home in the care of the family physician for some ulterior motive than the patient's good? Is it not true that many are kept at home because the family practitioner does not wish to lose sight of the case? This perhaps is a very pessimistic view of the matter, and attributes to the rank and file of the profession methods which are unworthy, and perhaps I should apologize to the profession for even insinuating so much, but I believe it is impossible for the rank and file of the profession, no matter how ignorant they are about physical diagnosis, to keep those patients under their care for eighteen months without recognizing their true condition.

Another motive, which is not an unworthy one, is the belief on the part of the attending physician that his patient will improve at home under proper treatment, and that it is unnecessary to send him away. If that is the reason for the delay, then the 388 cases mentioned by Dr. Bonney furnish a striking commentary on the incorrectness of such an opinion. For my part, I insist upon the importance of an early diagnosis for the very purpose of sending the patient away to Colorado. I believe so sincerely that a change of climate will restore such patients in the incipiency of the disease that as soon as I recognize a case in its beginning, I promptly advise such patients to go away. If that advice cannot be followed, then some other advice is given.

In the early diagnosis of pulmonary tuberculosis, I should like to dwell on the importance of temperature. A study of the temperature should never be neglected. We all see cases where the early diagnosis of the disease is difficult on account of the vagueness of the physical signs. There may not be a rise of temperature in all cases, but there is so apt to be a slight rise, perhaps only of one degree, that if the temperature is studied carefully for a week or more, the physician can usually come to a correct conclusion.

I am not a laryngologist, but I must say that I am sceptical about the statement just made that a careful laryngoscopic examination will anticipate a diagnosis of pulmonary disease before it can be detected in the lungs. I have friends at home whom I know are skilful laryngologists, and I have so often called on them to help me out that I cannot believe their failure to recognize a change in the larynx was due to ignorance, but rather that such changes were not there. I have sent patients with incipient disease of one or both apices to laryngologists, and the statement came back that the larynx was practically healthy.

In regard to the significance of hemoptyses, I should like to say that I believe they are nearly always the precursors of pulmonary disease or due to it.

Dr. R. G. Curtin, of Philadelphia: — I believe that ofttimes the main reason why patients are not sent away from home is that they are not ready to go. They may not at first have the means to go away; later on, when the symptoms become more aggravated, the necessary funds may be supplied by their relatives or friends. Other patients are not disposed to leave home, or are afraid of getting homesick. Often it requires six months or a year before such a patient can make up his mind to leave his home.

Dr. Richard C. Newton, of Montclair: — In confirmation of what Dr. Babcock has just said about laryngeal phthisis, I believe the fact is generally admitted — for which we should thank heaven — that it is a comparatively rare, although a distressing, intractable and, in fact, a well-nigh hopeless phase of consumption.

Dr. Roe: — The examiner must make the distinction between a tuberculous laryngitis and the laryngitis of tuberculosis.

Dr. E. Fletcher Ingals, of Chicago: — I agree with the statement made by Dr. Roe that even in the very early stages of pulmonary tuberculosis the larynx often presents an appearance which the man who frequently examines that organ will recognize as tubercular. There is a pallor or an atrophic condition of the larynx which leads him to believe that the patient is tuberculous.

I think that the plan of telling your patient to go away as soon as you find out that he has tuberculosis is a mistake. The first thing is to find out is he can go away; if he has money or if his friends can send him. It is cruel to tell him that he must go away before you know that he is able to do so.

Dr. C. F. McGahan, of Aiken, S. C.: — I agree with Dr. Roe that an examination of the larynx if often of great value in the early diagnosis of these cases. It is my custom to examine the larynx in all of my cases, and I have now a patient under observation where the larynx is suggestive of tuberculosis, although I can find nothing in the lungs.

Dr. E. O. Otis, of Boston: — Dr. Bonney, in his paper, emphasized the importance of the inherited susceptibility of the patient in the acquirement of pulmonary tuberculosis. In connection with that, I think the question of exposure to the disease should be carefully investigated in each case. Last year, Dr. Loomis, in a valuable paper before this Association, spoke of two other factors in making an early diagnosis, namely, the vital capacity of the individual, as determined by the spirometer, and the lowered arterial tension. These I believe, will often give us valuable indications in making an early diagnosis.

Dr. Phillips: — I would like to inquire whether any of the members have noticed a sub-normal temperature in tuberculous patients? In the incipient stage of the disease it seems to me that is almost of as common occurrence as a slight rise in temperature.

Dr. Knight: — There is one point in regard to the larynx which should be brought out. I think all laryngologists agree that in incipient pulmonary tuberculosis the larynx may have a suspicious appearance — not an ulcerated condition, but a certain indefinite appearance which has hitherto been not fully described and which Dr. Roe can perhaps describe to us more in detail.

Dr. Babcock: — I was only expressing some scepticism concerning the doctor's statement that the appearance of the larnyx sometimes indicated pulmonary tuberculosis before an examination of the lungs would show it. I do not question for a moment that the appearance of the larnyx is significant when pulmonary changes are present, but I was surprised that the larynx should indicate pulmonary tuberculosis at so early a stage that careful examination of the lungs would not reveal the presence of the disease.

Dr. Roe: — I did not say it was indicative of pulmonary tuberculosis, or at least, what I meant to say was that it was indicative of approaching trouble in the lungs.

Dr. Robert H. Babcock, of Chicago, read a paper on

HIGH ALTITUDE AND HEART DISEASE WITH REPORT OF CASES.

The author reported nine cases in full. Case I was an instance of mitral stenosis, and Case VII of aortic constriction. In both an unyielding barrier to the blood-flow existed, and time had to be allowed for the stream to pass the point of obstruction. In stenosis, systole is slow and forcible so long as compensation is adequate. Acceleration of the circulation at high altitudes would quicken cardiac contractions; with the shortening of systole time would not be allowed for complete emptying of the chambers back of the constriction; stasis in the pulmonary vessels would be promoted, with corresponding dyspnea that might readily grow urgent on exercise.

Conclusions — (1) All forms of cardiac disease do not contraindicate sojourn at a high altitude.

(2) The ill-effects of low atmospheric pressure in some forms of cardiac disease are explicable on the hypothesis of acceleration of venous flow and corresponding quickening of the heart beats.

(3) Consequently those forms with which high altitude is likely to prove incompatible are pronounced aortic or mitral stenosis, and regurgitant disease when complicated by pleural and pericardial adhesions.

(4) On the other hand, patients with uncomplicated regurgitant lesions, or arterio-sclerosis, with or without myocardial changes, may endure low atmospheric pressure without injury.

(To be continued.)

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Recent Literature.

The Philosophy of Memory and other Essays. By D. T. Smith, M.D., Lecturer on Medical Jurisprudence in the University of Louisville. Pp. 203. Louisville: Press of John P. Morton & Company. 1899.

This small volume, admirably printed on excellent paper, is a series of essays, only one of which, that on Memory, has any claim to consideration from a medical point of view. The book is merely an expression of the thought and the theories of its author. The Essay on Memory deals with anatomy and psychology, but with neither in a fundamental way. To certain readers, the book will, no doubt, prove suggestive, but it is hardly to be regarded as a significant addition to our knowledge of the subjects of which it treats.

Hay-Fever and its Successful Treatment. By W. C. Hollopeter, A.M., M.D. Second edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1899.

In this second edition the author has enlarged the special treatment for the various types of cases, and brought the bibliography up to date. The great difference in opinion on the etiology of hay-fever is briefly outlined by well-selected short references. The author's local treatment consists essentially in thorough cleansing of the nares with Dobell's and similar solutions, followed by drying and applications of oily solutions, which when necessary is supplemented by careful general treatment.

Compulsory Vaccination in Japan. — The Japanese government has recently decreed that vaccination and revaccination be compulsory. Children must be vaccinated before the tenth month, and revaccinated at six, and again at twelve years of age.

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PROF. ROBERT W. E. BUNSEN.

The death of Professor Bunsen, which occurred August 16th, at Heidelberg, has removed another of the master-minds of Germany. Original scientific investigation has suffered severely in the last few years through the deaths of Pasteur, Helmholz, Du Bois Reymond, and now of Bunsen. Such men cannot be replaced, nor, fortunately for the world, can their work be destroyed.

Although Bunsen was not primarily interested in medicine, yet his special fields of research, physics and, notably, chemistry, are coming into closer and closer relation with medical science. We may, in the near future, surely look to chemistry for some of the most striking advances in medical knowledge. It is of interest also to note that like Helmholz, in the invention of the opthalmoscope, so Bunsen has done an inestimable service to medicine in his work on electricity, the properties of certain metallic compounds, and spectrum analysis. His first chemical work was the discovery of an antidote for arsenic. This he accomplished in his twenty-third year. Born in 1811, he spent about twenty years after receiving his degree in various German universities as tutor and professor, and finally, in 1852, went to Heidelberg, where he remained until his death. While at Heidelberg he had built a chemical laboratory, which became, under his direction, one of the most celebrated schools of chemistry in the world. He was a prolific writer on scientific subjects, chiefly connected with chemistry; particularly original was his work on spectrum analysis, which, though indirectly, is coming to have a closer and closer bearing upon certain branches of medicine, in connection, for example, with microphotography. In the course of his life he invented some of the most valuable adjuncts of a laboratory, the Bunsen burner being still probably the most indispensable in the hands of a chemist. The battery, photometer and pump known by his name are hardly less useful. It is always interesting to observe how, with all the modern tendency toward specialism, there is likewise a growing appreciation of the interrelation of the great fundamental sciences. As medicine becomes more of a science as a branch of biology we may look for a constantly increasing dependence of the peculiar problems which medicine offers for solution, upon the allied sciences, and, conspicuously, upon chemistry. Men like Bunsen do much to hasten this hoped-for day.

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A STATISTICAL STUDY OF THE RELATION BETWEEN WEATHER AND CRIME.

That climate has a certain bearing upon the character of individuals and races has long been appreciated. We recognize, for example, as a race characteristic the active, hardy, unemotional attributes of the northern peoples, as contrasted with the easy-going, sentimental traits of those living in countries further south. These bare facts might suggest to the lover of the statistical method a possible prolific field for research in the study of effects of varying climatic conditions on the characters of persons living in the same locality. Such an investigation has been undertaken by Edwin G. Dexter, and the results of his work published in a recent number of *Science*.

Dexter has attempted to ascertain what bearing certain misdemeanors and other data of conduct have in relation to definite weather conditions. To accomplish this end, through the New York Branch of the United States Weather Bureau, 3,650 days were tabulated as to their prevailing characteristics, whether fair, partly cloudy, rainy or clear, and also as regards temperature, humidity and wind. Armed with these data, Dexter has collected for the same period of time, from records available in New York City, upwards of 400,000 facts; misdemeanors, ranging from assault and battery and suicide to errors made by bank clerks and strength tests in Columbia University. Comparing the characters of the day with the nature of the crime or physical state of the individual, conclusions of interest are reached, affording at least the basis for a valuable sociological study. The following are some of the points learned from a reduction of the double set of data to percentages: "Moderately high temperatures were found to be accompanied by excess in all the misdemeanors considered; low temperatures by deficiencies. The temperature group 80–85° showing an excess of 68 per cent. for assault by males and 100 per cent. for those by females. The next higher group, however, shows a drop to 33 per cent. excess for the former, and an efficiency of 33 per cent. for the latter. This sudden falling off for conditions of intense heat is shown for nearly all classes of data, and is undoubtedly due to the fact that under such temperature there is little energy available for offensive conduct. Death, suicide and the recorded errors in banks alone remain excessive under such conditions.

"The study of humidity in its effect upon the data of conduct gave some interesting results, since it demonstrated beyond a doubt that conditions of low humidity are those most productive of misdemeanor. When we consider that the muggy, sticky days on which we feel it our natural prerogative to be 'out of sorts' are of the opposite character this is quite surprising. The deficiency of disorders on such days is, however, undoubtedly due to the fact that although they are emotionally depressing they are also physically weakening, and however 'ugly' a man might feel, if energy were lacking to be offensively active, the police-court is none the wiser, and the fact is lost to our study."

Further study of the statistics shows that misdemeanors are more frequent upon days we are accustomed to consider agreeable. Suicide is found, contrary to the generally accepted idea, to be more frequent upon pleasant days in May and June.

"Perhaps the most interesting general conclusion to be drawn from the study is that during those meteorological states which are physically exhilarating, excesses in deportment, in the ordinarily accepted sense of the word, prevail to an abnormal extent, while death and irregularities in mental processes (errors in banks) are below expectancy. During such weather conditions, without doubt the quality of the emotional state is more positive than under the reverse conditions, but the results seem to show that in the long run an excess of energy is a more dangerous thing, at least from the standpoint of the police-court, than the worst sort of a temper with no energy."

The value of such work as the foregoing is unquestioned; still we cannot but feel that it is a statistical problem of very unusual difficulty, and one requiring more data than here presented to be convincing. For example, the questions of environment and race, together with the whole category of personal characteristics, seem to have been left unregarded, excepting for a general classification into groups. Places where crimes are committed must also be a source of error in such statistics. Weather conditions would hardly have the same effect in the city as in the country, or in a dark tenement as in the open air. Evidently, therefore, there are numerous sources of error, if only the crime and the weather conditions are considered; nevertheless, the general results are of value, and no doubt will prove the starting point for other and more detailed investigations.

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RAINSFORD ISLAND.

The recent fires at Rainsford Island, which the evidence goes to show were of incendiary origin, must force upon us both the dangers and the difficulties in the administration of an institution of that character. It is a reformatory for boys, which means that its inmates are of a class to be regarded with suspicion and watched with care. If they may be reformed, so much the better, but in the meantime they must be regarded as an abnormal class whose best interests demand the closest surveillance. The wholesale destruction of property which was intended and partly accomplished is a danger to which such an institution must always be exposed, and against which it must be most rigidly guarded. Recent events go to show that some of our boldest and most desperate criminals are boys under twenty; call them pathological, or degenerate, or the victims of circumstances as you will, the fact remains. This attempt at Rainsford Island, if it prove to be a deliberate plan on the part of certain inmates, means that discipline and not sentiment should prevail, and that everything should be done to uphold the present administration of the island in its efforts to establish a firm rule over its troublesome wards. This the city owes to itself and to its appointed guardians of this particular city institution.

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MEDICAL NOTES.

Centennial Celebration at Leipsic. — The surgical clinic at Leipsic will have a centennial celebration in October, when a bust of Professor Thiersch will be unveiled.

Professor Sanarelli not to visit America. — It has been generally reported that Prof. Sanarelli was about to visit America, for the purpose of continuing his investigations on yellow fever. We learn from the *Medical News* that this rumor has no foundation in fact, and that he has no present intention of visiting America.

Yellow Fever at Santiago and Havana. — It is reported that a case of yellow fever has occurred at Christo, whither headquarters have been removed, in the neighborhood of Santiago and is the first at that place. Of late the quarantine rules have been relaxed, owing to the fact that there have been no new cases in the city, and officers from headquarters have been in the habit of coming to Santiago daily, returning to headquarters at night. There are no cases among the troops at Havana.

An Expensive Criminal Family. — We learn from the *Medical News* that Ada Zurke, who was born in Germany in 1740 and died in 1800, was a confirmed drunkard. Prof. Pellmann, of the University of Bonn, discovered and identified 709 of her descendants. Seven of these were convicted of assassination and 76 others of different crimes, while 144 were professional beggars, 61 lived on public charity, and 181 were prostitutes. Altogether, the cost to the German government of watching, pursuing, trying, and boarding the members of this family has been more than a million and a quarter dollars.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, August 23, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 44, scarlet fever 16, measles 3, typhoid fever 32, small pox 1.

Fires at Rainsford Island. — Within ten days two fires have occurred at the reformatory for boys on Rainsford Island. Through vigorous effort on the part of the officers of the island and others, the fire was quickly extinguished with slight loss. The second fire, a few days later, originating in the same place, proved more stubborn, and was not brought under control until a large part of one building had been destroyed, entailing a considerable money-loss. The fires are supposed to have been of incendiary origin, started by inmates.

NEW YORK.

Public Funds for Support of Private Charities. — In a communication to Controller Coler, expressing approval of the latter's determination to cut down the appropriation of public funds for the support of private charities, the State Charities Aid Association points out that a number of these institutions are almost wholly maintained by the city, and that the appropriations tend to discourage private benevolence. The statement is made that there are now 282 institutions, which receive annually no less than $3,249,623. The Association advises that the custom of appropriating money for such institutions should be entirely abolished, and that all appropriations for charitable purposes should be devoted to the development and support of the municipal charities. Inasmuch, however, as the present system cannot be discontinued at once without causing considerable disturbance and hardship, it is recommended that a gradual reduction in the amounts given to private institutions be carried out, and that this reform be first applied to the per capita payments for inmates, the expense of whose maintenance in all instances, it is declared, is much greater than for the inmates of the city institutions. It is furthermore recommended that the city should in no case make payment to private institutions until after a thorough investigation, and that expenditures for private charities be provided for in the regular budget, and not out of the excise moneys.

A Baby Farm Condemned. — On information furnished by the Society for the Prevention of Cruelty to Children, a woman was, on August 15th, found guilty of maintaining an authorized "baby farm," and sentenced in the Court of Special Sessions to a year's imprisonment. It was shown that three infants had died within a period of three weeks, and Dr Sinclair, of Lexington Avenue, testified that the children in her establishment were in a very bad state of filth and neglect.

A Crematory for Nyack. — The Nyack rural cemetery, twenty-three acres in extent and situated a mile and a half back of Nyack, on the Hudson, has been purchased by a New York syndicate, which purposes to establish a crematory in which liquefied air is to be utilized to furnish a supply of oxygen much greater than is possible by any process hitherto employed. The furnace used will be an electric one, and it is claimed that by this new process the incineration of a body can be accomplished in a few minutes by the intense heat evolved. One of the principal objections to cremation, the long time required for the process, will thus be removed.

Death while under Treatment of a Christian Scientist. — John Allan Campbell, who is represented as having been a Christian Scientist of the highest sphere, died recently, after having been treated until within a few hours of dissolution by members of his sect. When it became evident that death was near a physician was called in, no doubt for the purpose of signing the certificate for the health department, but the physician very properly placed the case in the coroner's hands. The autopsy made by the coroner's physician, Dr. Donlin, showed that the patient was affected with acute pleurisy, with effusion, cerebral congestion and cardiac hypertrophy and dilatation.

A Fatal Case of Poliomyelitis. — A child four years and nine months old died on August 15th at Poughkeepsie, of infantile paralysis, after a very brief illness. This is the first fatal case that has occurred there, and the attack is said to have been ushered in by convulsions which appeared to be due to a large quantity of watermelon which the child had taken.

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Miscellany.

A PROGRESSIVE OPINION.

The *Medical News* heads the following excerpt from a recent editorial in the *Medical Times*, a homeopathic journal, "A Step in the Right Direction," an opinion which we would most cordially endorse:

"However valid may have been the reason in the early days of the homeopathic school for identifying its institutions with a distinctive sectarian name, it is a matter worthy of the most careful consideration, if, in the present advanced and ever-advancing state of medical thought, when the most accurate scientific tests are being applied honestly and faithfully to every principle in medicine, and to every new thought developed in the wide range of studies connected with our profession, the retention of that name in our colleges and hospitals does not retard their influence and create in the minds of scores of students in after years a feeling of regret that in a profession ever broadening in its scope and becoming more and more a unit in its work, their diploma, in name at least, is a distinct sectarian one, and out of tune with that broader liberty which looks upon the whole world as its own. There is no disputing the fact, for the records are open to all, that every year many, very many physicians on whose diplomas the name eclectic or homeopathic appears seek and obtain from other colleges a non-sectarian degree, in which no pledge is required or implied of adherence to any one dogma, and giving perfect liberty for that freedom of action based upon a careful education and mature thought. At the commencement of the Cleveland College of Physicians and Surgeons last month, no less than fifteen homeopathic physicians secured the diploma of the college after having spent the winter in study."

THE DETERMINATION OF SOUND DIRECTION.

The function attributed to the semicircular canals in respect of the determination of the direction of sound has been gradually undermined, and is now more or less discredited. The nature of the mechanism by which the source of origin of a given sound is perceived, therefore, still remains to be explained. There is reason to believe that the appreciation of direction is, *mutatis mutandis*, very analogous to the phenomenon of stereoscopic vision, that is to say, it is in virtue of certain subtle modifications of sound as perceived by both ears that we learn to diagnose direction, just as the slightly inaccurate superposition of two visual images gives the sensation of projection. In the course of a long series of observations carried out at the Yale laboratory it was found that as a matter of fact the sense of direction is remarkably accurate, a blindfolded subject making only 113 out of 656 possible errors. It was noted that the sounds of the right hemisphere were more accurately perceived than those of the left, those from the front more than those from the rear, and those from below more than those from above, variations which are probably due to the shape and direction of the pinna, and to the difference in the functional acuity of the two ears. Distance is estimated merely by the absolute intensity of the sound, but direction is gauged, according to Matsumato, by the relative difference between the intensities of the component sounds as heard by the two ears. This is such a delicate process that a ventriloquist can, by directing the attention of his audience to a given spot other than the actual source of the sound, and by certain studied modifications of the sound emitted, mislead the judgment into overruling the impressions on the sensorium of the observer and give rise to an absolutely false perception. There remains the fact that in certain atmospheric conditions, notably in fog, the sense of direction is greatly modified, and even lost, as sailors know to their cost. This fact would tend to show that senses other than hearing are concerned in completing the impression or at any rate in confirming or disproving the deductions based thereupon. — *Medical Press and Circular.*

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SANITARY CONDITIONS IN THE CAMPS AT SAN FRANCISCO.

In view of the scandals circulated about the condition and management of Camp Wykoff, Long Island, where the troops which took part in the Santiago campaign were taken at the close of the Spanish war, the report of Colonel Greenleaf, Medical Inspector of the Army, in regard to the camp established at the Presidio of San Francisco for the reception of the volunteer troops returning from the Philippines, is of more than ordinary interest and importance. The report, in part, is as follows:

> This camp is now occupied by three regiments, the 2d Oregon, 1st Nebraska and 10th Pennsylvania, and the Utah Battery, aggregating about 3,500 men, the infantry regiments being in the section on the north side of the railway track and the artillery on the south side. The general health of the men is excellent, the sick report, exclusive of cases that were placed in the hospital immediately after arrival being 4.6 per cent. of the effective force and made up of such trivial ailments as mild affections of the air passages, indigestion, rheumatism, etc.

The fears that were entertained of serious illness owing to the climate and the scantily clad condition of the men have not been realized. Many of the men had thick clothing on arrival, and those who had none borrowed from their more fortunate comrades. Nearly all have observed the precautionary directions against exposure, and the comfortably heated quarters have given them shelter and lounging places when off duty.

The sanitary corps (civilian employés) has kept the latrine troughs, garbage and waste cans in excellent order, and the urine tubs, placed each night in the company streets have freed the camp-ground from defilement of this nature. The trough system for latrines is a perfect success, and these places, instead of being noisome sights, are now the show-places of the camps, the houses and their surroundings being neat and clean in appearance and entirely free from bad odor. Indeed, there is nothing about them that can offend the senses of sight or smell. The interior police of the camp of the 2d Oregon is not good. Kitchens, dining-rooms, bath-houses and lavatories are not kept tidy or clean, in spite of the orders reiterated each day by the colonel of the regiment.

The contrast between the work of the scavengers at the latrines and about the garbage cans with that of the soldier police in the quarters, kitchens and dining-rooms is very marked and fully sustains the opinion previously expressed in my reports, that the untrained soldier cannot be made to do the work of a scavenger, to which I must add, nor can he be made to keep himself or his surroundings clean. The food supply is abundant, well prepared, cooked and served. There is added to each one hundred of the regular rations twelve and one-half gallons of milk, ten pounds of butter and ten dozen eggs; this is furnished by the subsistence department under the act of Congress approved March 3, 1899, for "issues to enlisted men in camp during the periods of recovery from low conditions of health consequent upon service in unhealthy regions or in debilitating climates." It may truthfully be said that the food in this camp is much better in variety, quality and preparation than is found in the average hotel anywhere in this country. The medical records of the 2d Oregon Volunteer Regiment are in excellent condition; better, in fact, than any other volunteer regiment I have seen at muster out. I have not yet examined the records of the other regiments here. The medical and hospital property of this regiment has been transferred to the supply depot in San Francisco, and the regimental hospital furnished from the general camp supply I had furnished provided for the troops.

The detention camp at Angel Island is so far completed that one regiment can be accommodated at any time. The hospitals for contagious and non-contagious diseases are in position and equipped, a medical officer and detail of hospital corps men is on the ground, and a common dispensary is ready for service. Fortunately up to this date there has been no occasion to place any of the incoming transports in quarantine, and therefore the camp has not been used.

These camps of recruits have an occupancy of about 4,000 men, although this number changes from day to day, as transports leave for the Philippines and recruits come in from the east; the general health of the men is excellent, the sick report showing an average percentage of 5.8, of which 33 per cent. is vaccinia, 10 per cent. malarial in men who have had previous service in Cuba, and the remainder rheumatism, indigestion, venereal, etc. Boards of medical officers are in session for re-examination of the physical condition of the men who arrive, and many have been rejected; the exact percentage I have not been able to ascertain, but it is large enough to show that sufficient care is not yet exercised in the selection of recruits, especially for service in the tropics.

Four cases of typhoid fever have been taken from the general hospital from these camps, the history of each one of which I studied carefully as soon as it was reported, and all gave evidence of importation. Precautionary disinfection in the camp latrines has, however, been thoroughly practised, and I think there is no danger of this disease gaining any foothold. In order that errors in diagnosis may be avoided, medical officers are instructed to make careful study of all fever cases. Advantage was taken of the occurrence of these cases to introduce the trough system of latrines, and to do away with the dry earth-box system previously in use. The change will be completed in a short time. The urine tubs are in use in these camps also.

Complaint having been made of the presence of vermin in the bedding and clothing of some of the men, I had large caldrons for boiling water put up in the camps into which material so infected was ordered to be placed; these caldrons when not so used supply hot water for the laundering of the clothing of the men, galvanized iron wash-tubs having been furnished for this purpose. The food of the recruits is ample in quantity, but has little variety beyond the regular ration; it is fairly well cooked but indifferently served; mess tables had to be made from any lumber that was available in the two older camps, but in the new camp they were furnished with buildings. The latrines, garbage cans, etc., are emptied by men of the sanitary corps, and the kitchens, tents, etc., are policed by soldiers. There is a great difference in the cleanliness of these and the volunteer camps; here the police work of the recruits, under direction of regular officers, is well and thoroughly done, the kitchens and cooking utensils, the tents and the company streets being kept in excellent order.

All outgoing transports while in dock preparing for the voyage are carefully inspected by the medical superintendent, and immediately before sailing I also inspect them. In every instance they have been found in good condition. Before loading, estimates of troop capacity are made, with a view of securing proper air space, and assignments of troops are made in accordance with these estimates; the facilities for latrines, urinals, lavatories and baths are ample, and all are in good working order before starting. The capacity of the ships' galleys for cooking is determined, and when necessary extra galleys for troop service are put in. Fresh air is introduced between decks by wind sails, and electric fans keep it in motion. Ample ice-chest and cold-storage room is furnished, and the water supply and apparatus for replenishing it is tested. The question of substituting troughs for water-closets is being considered, since it has been found that the latter get out of order easily and do not work satisfactorily on long voyages with troops.

Correspondence.

AN INTERESTING TESTIMONIAL.

Brookline, Mass., August 16, 1899.

Mr. Editor: Among some papers of my grandfather I have come across a testimonial written, I think, by Dr. Waterhouse for one Martha Battles, expressing thanks for care received by her at the Massachusetts General Hospital as long ago as the year 1836.

It possesses some interest from its quaint phraseology and also historically as an early endorsement of the hospital, and therefore I send a copy of it to you for publication, if you think best.

Walter Channing.

Following is the testimonial:

"Dr. and Mrs. Waterhouse with Martha Battles thus express their thanks to Dr. Channing for his considerate, and successful attention to her, while under his care in the Hospital: — nor ought she to with hold the like expression of gratitude from Dr. Wyman, and the faithful Nurses.

"The extreme neatness-order-quiet and decorum of the noble establishment have corrected her former ideas of a public, charitable Hospital, which, instead of an odious Lazar-house, is, in truth a *Temple of Health*, dedicated to the honor of the good & glorious *Samaritan.*"

Sunday 28 of August 1836.

To Dr. Walter Channing.

METEOROLOGICAL RECORD

For the week ending August 12th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....6	29.82	75	82	68	54	4-	51	N.W.	E.	10		O.		
M...7	29.87	68	75	61	55	44	50	N.	N.W.	8		C.		
T....8	29.91	66	74	57	44	40	42	N.W.	N.	12		C.		
W...9	30.00	64	75	53	45	61	53	N.W.	S.E.	13		C.		
T...10	29.98	64	71	56	69	95	82	S.	E.	4		O.		.90
F...11	29.95	62	63	60	94	94	94	E.	N.E.	14		O.		.06
S...12	29.93	62	66	58	96	95	96	N.	E.	4		O.		.02
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, August 12, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1318	568	18.27	11.83	12.67	.84	2.17
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	231	106	25.80	17.50	17.63	3.01	2.58
Baltimore . .	506,389	203	86	32.34	10.78	24.99	2.94	2.94
Cincinnati . .	405,000	79	—	11.34	12.60	8.82	1.26	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	104	53	47.53	5.82	33.95	9 70	1.94
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee. .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	68	32	39.69	11.76	33.81	2.94	1.47
Nashville . .	87,754	32	12	18 78	18.78	12.52	—	—
Charleston . .	65,165	34	18	20.58	5.83	11.76	2.94	—
Worcester . .	108,240	30	17	33.33	16.66	33.33	—	—
Fall River . .	95,919	51	38	50.96	3.92	50.96	—	—
Cambridge . .	89,724	39	21	25.60	12.80	20.48	—	—
Lowell . . .	88,641	45	28	28.88	6.66	22.22	—	2.22
Lynn	66,703	—	—	—	—	—	—	—
New Bedford .	66,340	38	—	44.71	10.52	42.08	—	2.63
Somerville . .	66,101	12	7	41.65	16.66	41.65	—	—
Lawrence . .	57,263	26	19	26.95	19.25	22.10	—	—
Springfield . .	56,501	25	5	32.00	12.00	12.00	8.00	12.00
Holyoke . . .	43,424	22	10	12.45	4.15	8.30	—	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem. . . .	36,883	—	—	—	—	—	—	—
Malden . . .	34,613	8	3	37.50	12.50	37.50	—	—
Chelsea . . .	33,468	13	9	24.07	—	7.69	7.69	—
Haverhill . .	32,022	11	7	18.18	9.09	18.18	—	—
Gloucester . .	30,589	8	3	37.50	—	25.00	12.50	—
Newton . . .	29,716	—	—	—	—	—	—	—
Fitchburg . .	29,438	—	—	—	—	—	—	—
Taunton . . .	28,167	8	4	37.50	12.50	25.00	12.50	—
Everett . . .	25,338	9	6	—	—	—	—	—
Quincy . . .	23,549	6	1	33.33	50.00	16.66	—	16.66
Pittsfield . .	22,643	16	7	50.00	—	50.00	—	—
Waltham . .	22,296	7	2	14.28	14.28	14.28	—	—
North Adams .	20,971	9	3	55.55	—	55.55	—	—
Chicopee . .	17,842	10	7	50.00	—	30.00	—	10.00
Medford . . .	16,511	5	3	20.00	20.00	20.00	—	—
Newburyport .	14,915	—	—	—	—	—	—	—
Melrose . . .	14,032	1	—	—	—	—	—	—

Deaths reported 2,482; under five years of age 1,100; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 629, consumption 287, acute lung diseases 145, diarrheal diseases 466, diphtheria and croup 53, typhoid fever 46, whooping-cough 27, measles 15, cerebro-spinal meningitis 14, scarlet fever 5, erysipelas 3.

From whooping-cough New York 15, Boston, Nashville and Charleston 2 each, Baltimore, Cambridge, Lowell, Lawrence, Chelsea and Chicopee 1 each. From measles New York 11, Boston, Pittsburg and Providence 1 each. From cerebro-spinal meningitis New York 6, Baltimore 2, Boston, Cincinnati, Cambridge, Lowell and Holyoke 1 each From scarlet fever New York and Boston 2 each, Pittsburg 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending August 5th, the death-rate was 24.6. Deaths reported 5,379; acute diseases of the respiratory organs (London) 159, diarrhea 1,182, measles 128, diphtheria 91, whooping-cough 82, fever 35, scarlet fever 20.

The death-rates ranged from 12.7 in Croydon to 37.4 in Sheffield; Birmingham 24.6, Bradford 18.8, Cardiff 16.3, Gateshead 12.7, Huddersfield 19.2, Hull 18.3, Leeds 24.5, Liverpool 31.5, London 25.2, Manchester 29.0, Newastle-on-Tyne 27.6, Nottingham 28.1, Portsmouth 28.2, Salford 29.6, Swansea 21.1.

RECENT DEATHS.

Andrew K. Smith, M.D., an old army surgeon residing in New York, died suddenly of apoplexy, at Cranston's Hotel, near West Point, on August 14th. Dr. Smith entered the medical service of the U. S. Army in 1853, and was retired with the rank of Colonel in 1890. He was in the seventy-fourth year of his age.

Nathaniel W. Leighton, M.D., a prominent physician of the Borough of Brooklyn, New York, died August 12th, in the sixty-seventh year of age. Not long since he was President of the Fifth District Branch of the New York State Medical Association and one of the Vice-Presidents of the Association.

Tunis L. Shenck M.D., died at his residence at Van Pelt Manor, Borough of Brooklyn, New York, on August 15th, of Bright's disease. He was born in Flatbush, where he practised until ten years ago, and was fifty-eight years of age. At one time he was chief physician of the Kings County Hospital. He was a graduate of the Medical Department of the Syracuse University.

BOOKS AND PAMPHLETS RECEIVED.

Golden Rules of Obstetric Practice. By W. E. Fothergill, M.A., B.Sc., M.D., author of "A Manual of Midwifery," etc. "Golden Rules" Series, No. III. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1898.

Hay Fever and Its Successful Treatment. By W. C. Hollopeter, A.M., M.D., Clinical Professor of Pediatrics in the Medico-Chirurgical College of Philadelphia; Physician to the Methodist-Episcopal Hospital, etc. Second edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1899.

Defective Eyesight: The Principles of Its Relief by Glasses. By D. B. St. John Roosa, M.D., LL.D., Professor Emeritus of the Diseases of the Eye, New York Post-Graduate Medical School and Hospital; Surgeon to the Manhattan Eye and Ear Hospital, etc. New York: The MacMillan Co. Ltd. 1899.

The Hygiene of the Mouth: A Guide to the Prevention and Control of Dental Diseases. By R. Denison Pedley, F.R.C.S. (Edin.), L.D.S. (Eng.), Dental Surgeon to the Evelina Hospital for Sick Children, Southwark, London. With numerous illustrations. London: J. P. Gregg & Co. Philadelphia: S. S. White Dental Mfg. Co. 1899.

Selected Papers on Stone, Prostate and Other Uriuary Disorders. By Reginald Harrison, F.R.C.S., Surgeon to St. Peter's Hospital; Member of Council, Royal College of Surgeons; formerly Senior Surgeon to the Liverpool Royal Infirmary and Lecturer on Clinical Surgery in the Victoria University. London: J. & A. Churchill. 1899.

International Directory of Laryngologists and Otologists, Containing Names and Addresses of Practitioners engaged in the Study and Practice of Laryngology and Otology. Compiled by Richard Leeke, F.R.C.S. Published under the auspices of the *Journal of Laryngology, Rhinology and Otology*. London: The Rebman Publishing Co. 1899.

Text-book of Ophthalmology. By Ernest Fuchs, Professor of Ophthalmology in the University of Vienna. Authorized translation, revised from the seventh enlarged and improved German edition by A. Duane, M.D., Assistant Surgeon, Ophthalmic and Aural Institute of New York. With 277 illustrations. Second American edition. New York; D. Appleton & Co. 1899.

Saunders' Medical Hand Atlases: Atlas of the External Diseases of the Eye, including a Brief Treatise on the Pathology and Treatment. By Prof. Dr. O. Haab, of Zürich. Authorized translation from the German edition by G. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College, Philadelphia, etc. With 76 colored plates and 6 engravings. Philadelphia: W. B. Saunders. 1899.

The Gross and Minute Anatomy of the Central Nervous System. By H. C. Gardiner, A.M., M.D., Professor of Physiology and of the Anatomy of the Nervous System in the Albany Medical College; Member American Neurological Association. With 48 full-page and 213 other illustrations, many of which are printed in colors, a large number being from original sources. Philadelphia: P. Blakiston, Son & Co. 1899.

Original Articles.

THE EFFECTS OF TRAINING.

A Study of the Harvard University Crews.

BY EUGENE A. DARLING, M.D., CAMBRIDGE.

This investigation was undertaken at the suggestion of the Harvard Athletic Committee, by whom it was felt that a knowledge of the physiological changes occurring during severe training would be of value, and that incidentally data might be obtained throwing light on the obscure subject of overtraining. It is intended to make a similar study of the effects of training for several other forms of athletic contests besides rowing, especially foot-ball and running. Since no similar research had, as far as known, been attempted, this first series of observations on the effect of rowing was regarded as tentative. It was doubtful how far the subject would lend itself to study and hence it was thought best not to attempt too much until the more promising lines on which to work had been determined. Much of the work has been somewhat barren of result, while in other directions unexpected facts have been learned and the necessity for further study revealed. For example, it early became apparent that one of the most important parts of the investigation would concern the nutrition and tissue metabolism, but for want of suitable apparatus and in the absence of a chemist to analyze the food and excreta, this part of the work was done only in the most superficial way. It is hoped that a subsequent investigation will include a much more complete study of these important points. The greater part of the work which was thought to be feasible this year was a study of the changes taking place in the heart and kidneys, and a series of observations on the weight and temperature and their relation to the general condition of the men. The observations covered the months of May and June, and hence included only the more strenuous part of the training period, for which all the men had been prepared by long preliminary work, as detailed below.

There were certain difficulties which limited the scope of the inquiry and which must be borne in mind in estimating the results obtained. The chief one was the impossibility of maintaining constant supervision over the men, and the consequent loss of much valuable information. This was not true, however, during the two weeks at New London, where the opportunities for observation were excellent. A second difficulty was that circumstances sometimes compelled the use of cruder methods of examination than would be necessary for the most accurate work. For instance, the most accurate method of determining the size of the heart and the method least liable to error from the "personal equation" is by means of the fluoroscope, but owing to the impossibility of setting up an elaborate x-ray machine at New London, one had to fall back on the less certain method of combined auscultation and percussion aided by the phonendoscope. A third limitation to the inquiry was the obvious one that all the observations had to be arranged so as not to interfere in any way with the main objects of the training, which were to learn to row and to get into the best possible condition. Consequently, nothing in the way of experiment could be attempted nor any examination which would fatigue the men or distract their attention from their rowing.

These limitations were unavoidable, but were counterbalanced in a way by the active co-operation of the coach and of the individual members of the crews. Their courtesy and interest were unfailing and alone made it possible to carry on the observations, involving as they did a considerable expenditure of time and a certain amount of irksomeness.

Preliminary training. — The large number of candidates who began training in the winter were gradually weeded out by a process of natural selection, based on numerous trial races, until but sixteen remained. These men were organized into two crews late in April, and practised daily until early in June. Shortly before going to New London a new man was taken from one of the Weld crews, and five of the squad were dropped. The remaining twelve comprised the two crews — the eight-oar and the four-oar — which took part in the races, and most of the statistics of this paper refer to them. The observations on the five who stopped training early in June were eliminated, so that more accurate comparison could be made.

Of these twelve men all had done considerable previous rowing in their class crews or in the Weld crews. Four had rowed on former Varsity crews and one had been a substitute. Several had begun rowing in preparatory schools. Six out of the twelve had played football and two had practised running. The period of active training for these sports had been from two to six years, so that all the men may fairly be called trained athletes, and the changes effected by training would not be expected to be as marked as in the case of inexperienced men.

The previous health of all the men had been good with one exception, who gave a history of typhoid six years ago and rheumatism a year later.

General statistics. — The following table gives in brief the ages, weights, heights, chest and abdominal measurements and vital capacities of the lungs of the individual members, with averages for the eight and four, and, finally, the averages for the entire squad:

Table I.

No.	Age.	Weight May 8–17.	Height.	Chest measurements.			Circum. of abdomen.	Vital capacity. Cu. ins.
				Inspiration.	Expiration.	Expansion.		
1	20	165	5′ 9″	41″	35″	6″	31″	335
2	20	158½	5′ 11½″	38″	34″	4″	29″	290
3	20	175½	5′ 9½″	41″	37″	4″	33″	330
4	20	180	6′ 1½″	39¼″	35″	4¼″	31½″	330
5	21	177½	6′ 2″	40¾″	37¼″	3½″	32¾″	380
6	19	178	6′ 2½″	39¼″	33¾″	5½″	31″	330
7	24	167½	6′ 1½″	37¾″	33¾″	4″	30″	330
8	21	163	6′ 1″	39¾″	34½″	5¼″	31″	350
Average of eight.	20⅝	170⅝	6′ 0¼″	39⅝″	35″	4⅝″	31⅛″	334
9	20	159½	5′ 8½″	38″	34¾″	3¼″	31¼″	295
10	21	176	6′	42″	37″	5″	33″	380
11	21	170	5′ 10½″	38¼″	31¼″	4″	32″	260
12	22	157	6′	39¼″	31¾″	4½″	31″	290
Average of four.	21	165⅝	5′ 10¾″	39⅜″	35 3 16	4 3-16	31⅞″	306
Average of squad.	20¾	169	5′11¾″	39½″	35″	4½″	31½″	325

I. GENERAL SKETCH OF THE TRAINING.

Daily rowing. — During May and the first ten days of June the daily exercise consisted of rowing on the Charles in the latter part of the afternoon. The distance covered varied according to circumstances from five to eight miles, occasionally more. At New London there was added a short morning row of two to four miles. Between the middle of May and the race there were five time-rows — three on the Charles of three and three-eighths miles each, and two on the Thames over the four-mile course. These time-rows were designed to accustom the men to rowing long distances at high speed and to enable the coach to judge of their form and endurance, but incidentally they afforded excellent opportunities to study the effects of long-continued exertion, and were, moreover, striking demonstrations of the effects of training. The earlier time-rows, though shorter than the later ones, were much more exhausting, and their effects on the hearts and kidneys — the organs showing most evidence of strain — were considerably greater.

For the purposes of this inquiry, however, the time-rows had to be regarded as factors disturbing the regular process of development which might be expected were the daily exercise uniform or slowly increased, and hence it became necessary to divide the observations into two parts, the first directed to the changes in the daily condition, eliminating the effects of the time-rows as far as possible, and the second directed to the immediate effects of the time-rows.

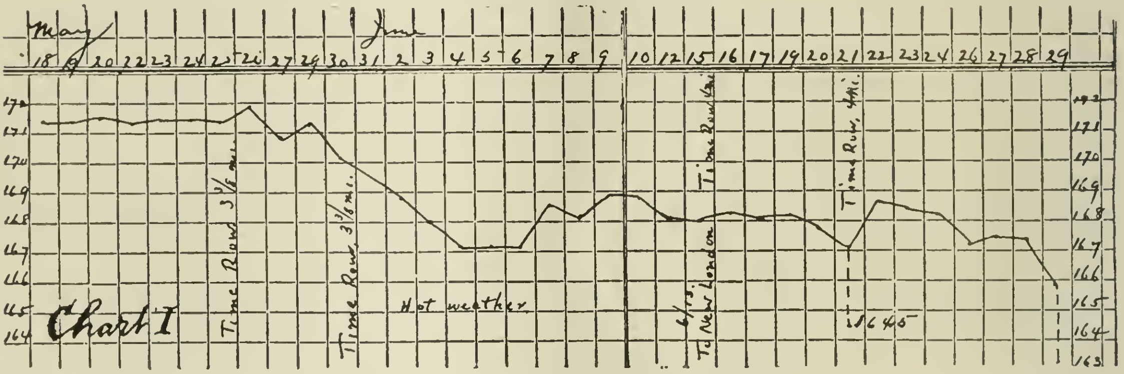

CHART I. Average Daily Weight of Varsity Eight.

Diet. — The diet allowed was a very generous one, consisting of a hearty breakfast at 7.30, lunch at one and dinner after the evening row. For breakfast the fare consisted of fruit, oatmeal or shredded wheat, eggs, some form of meat, bread and butter, potato and milk. At noon there was cold meat, potato, bread and butter, marmalade, preserved fruit and milk. Dinner comprised soup, occasionally fish, roast beef or some other hot meat, several vegetables, bread and butter and a simple dessert. No tea or coffee was allowed, but ale or claret was permitted at dinner, also water in small amounts as desired. During the last week before the race each man received a dish of calves'-foot jelly with sherry wine after the morning row, and a light lunch of oatmeal, milk and bread was served at four o'clock in the afternoon.

Sleep, bathing, etc. The ordinary allowance of time for sleep was nine hours, from ten to seven. General plunge baths were prohibited, but after rowing the men were allowed a cold shower bath in Cambridge and a bucket bath (for want of a shower) at New London.

Besides rowing the men indulged in very little exercise. While at New London a five-minute walk before breakfast, an occasional game of quoits or spasmodic efforts to play baseball were the only other forms of exercise indulged in. When not rowing, sleeping or eating the men passed the time in reading, writing or in pure and simple loafing.

II. EFFECTS OF TRAINING.

Weight. — It has long been recognized by athletic trainers that the weight is one of the best indicators of condition. The average weight of the eight men constituting the crew from May 18th to June 29th is shown in Chart I.

During the first ten days of this period there were no marked variations, and in spite of two hard time-rows the average on May 29th was exactly the same as on May 18th, 171.4 pounds. Beginning May 30th, when there was a third time-row, there was a steady fall in weight for a week. The weather at this time was very hot and oppressive, and owing to the fact that the crew rowed for a few days on Spy Pond, Arlington, there was much delay in getting dinner. These two factors, added to the hard work the men were then doing, contributed to the fall in weight. From June 6th until the day of the race the average was very constant, fluctuating between 167 and 169 pounds, although individuals showed more or less variation. Losses in some men were usually balanced by gains in others. Chart II illustrates the range of variation in three of the crew. In the case of No. 7, whose condition was uniformly good, the variation was slight and, leaving out of consideration the sharp fall during the time-row and race, amounted to but three pounds. In Nos. 6 and 3, on the other hand, the range of variation was ten and eight pounds respectively. No. 6 began hard training in April and was somewhat slower in getting down to his normal training weight than the others. The sharp fall in No. 3's line between May 30th and June 2d was accompanied by some insomnia and general malaise, but unfortunately he was not under immediate observation at the time. One of the commonest causes of fluctuation in weight was diarrhea. In several instances slight attacks caused a fall of three or four pounds in twenty-four hours, though in every case this was quickly restored soon after the diarrhea ceased.

Tables II and III show the effect of the last time-row and of the races on the weight. The preliminary loss means that which is always noticed during the twenty-four hours before a race. It may be attributed to nervousness, affecting the appetite and urinary secretion. This preliminary loss, as might be expected, was considerably greater before the race than before the time-row, being 12¼ and 6¼ pounds respectively, while the actual losses during the time-row and race were nearly the same, 20¾ and 22 pounds respectively.

Table II. Loss of Weight in Time-row of June 21st.

	1	2	3	4	5	6	7	8	Total.	Average.
Preliminary loss.	1	1	0	1	1	¼	½	1½	6¼	¾+
Loss during time-row.	1¾	2½	2¾	4	2	2¾	3	2	20¾	2⅝ −
Total loss.	2¾	3½	2¾	5	3	3	3½	3½	27	3⅜

Table III. Loss of Weight in Race, June 29th.

	1	2	3	4	5	6	7	8	Total.	Average.
Preliminary loss.	2	1¾	2¼	¼	1	2½	0	2½	12¼	1½+
Loss during race.	2½	2	3¼	3	2	3	3½	2¾	22	2¾
Total loss.	4½	3¾	5½	3¼	3	5½	3½	5¼	34¼	4¼+

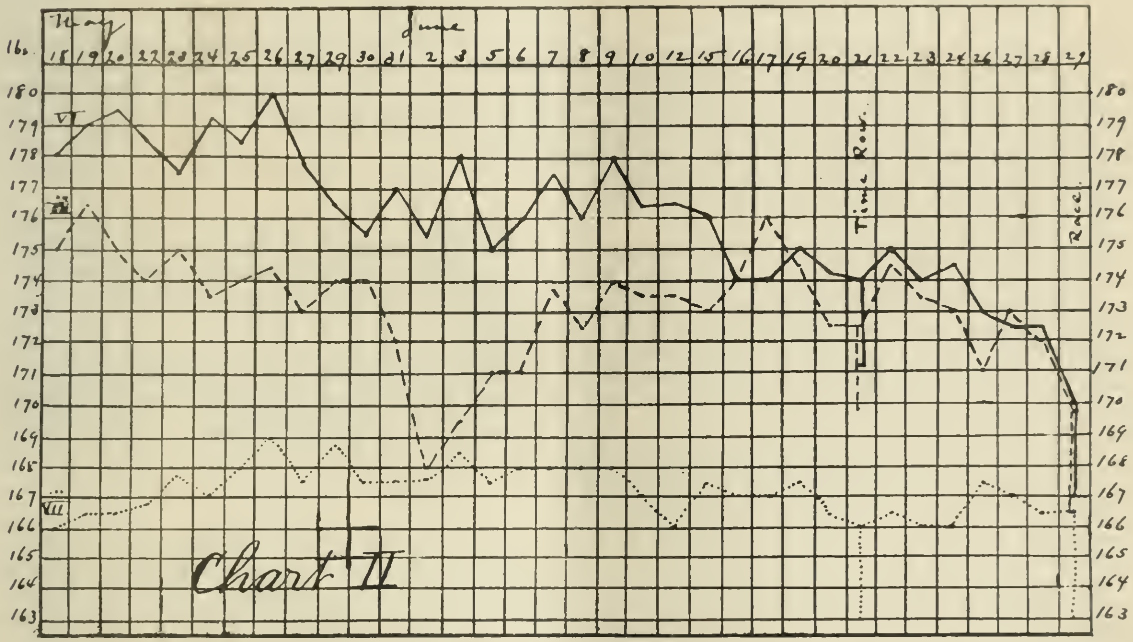

Chart II. Weight Chart of Nos. 3, 6 and 7, showing Daily Variations.

Through an oversight, the weights of the Varsity four-oared crew were not recorded during the last two weeks of training. A comparison of their weights immediately before and after the two-mile race showed an aggregate loss of 13 pounds, averaging 3¼ pounds.

Compensating for the rapid loss before and during the time-rows and races, there was noticed after those events an equally rapid recuperation; this is shown in Table IV, in which are given the total losses and corresponding gains for the time-row of June 21st. Every man recovered all or more than he had lost inside of twenty-four hours.

Table IV. Twenty-four-hour Gain after Time-row of June 21st.

	1	2	3	4	5	6	7	8	Total.	Average.
Total loss.	2¾	3½	2¾	5	3	3	3½	3½	27	3⅜
Gain in 24 hours.	4¼	5	4¾	5½	3¼	3¾	3½	3½	33½	4 3-16
Net Gain.	1½	1½	2	½	¼	¾	0	0	6½	13-16

A loss of several pounds during prolonged exertion does not by any means imply an undue degree of exhaustion, provided the individual is in good condition. The men who lost most were in fully as good condition as their companions both before and after the race. It is generally accepted on experimental grounds that during active exercise the energy is largely if not wholly derived from the oxidation of fat and glycogen, and that the muscles themselves are not used up in the process. The end products of this combustion — chiefly water and carbon dioxide — are rapidly excreted through the lungs and skin. The loss of weight represents very closely, therefore, the amount of fuel used up. Hence the man who has an adequate supply of reserve fuel in the form of fat and glycogen is in better condition to withstand a prolonged exertion than one who is deficient in those substances. This corresponds with the experience of all athletes. There is always a loss of weight during the early part of training, while a man is getting rid of superfluous fat, but every athlete knows that when a certain point is reached — his so-called "weight in training" — any further reduction is accompanied by a feeling of lassitude and an incapacity to sustain prolonged exertion without excessive fatigue. This form of over-training, known as "staleness," is in all probability due to a deficiency of reserve fuel. These facts emphasize the importance of maintaining at a proper proportion the fat and carbohydrate constituents of the diet instead of sacrificing them for an excess of nitrogenous material — a mistake which is undoubtedly often made, and which will be discussed more in detail later.

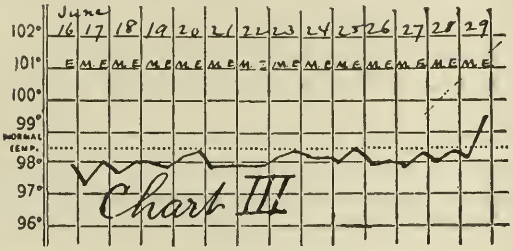

Chart III. Temperature Chart of Entire Squad.

Temperature. — The temperatures were taken in the mouth twice daily, at 8 a. m. and 9.30 p. m., during the last two weeks of training. The chief points brought out by the routine readings were the great variation in individual cases and the persistent tendency to subnormal temperatures. The average for the entire squad remained near 98° F., as shown in Chart III.

A few individuals maintained approximately a normal average of 98.5°, but the majority showed wide variations. It was not uncommon to find a temperature of 96° in the morning and 98° or more in the evening in the same man. Charts IV and V are fair sample charts.

The individual variations could not be shown to have any definite relation to the general condition beyond the coincidence that those men who varied most in weight also varied in temperature. The body temperature is dependent on so many circumstances that variations within limits are to be expected. The heat production during muscular and other metabolic action is constantly balanced by the heat loss in warming the expired air, the urine and feces, by evaporation of perspiration and by conduction and radiation from the skin. During training the greater part of heat production by muscular action (supposed to be its main source) is confined to a comparatively brief portion of the twenty-four hours and during that same portion the heat loss is also great. It is not surprising that the heat balance is not stationary and the charts show that in fact in the majority of cases it is not maintained at a fixed point.

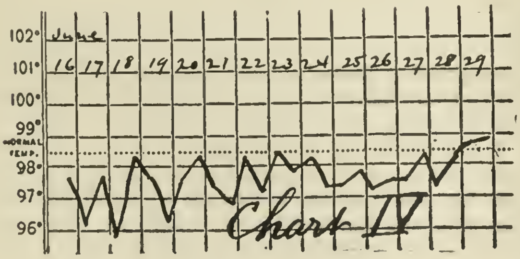

Chart IV. Temperature Chart of No. 8.

On the day of the races the temperatures were taken three times, first, at 8 a. m., second, while the men were dressing for the race, and finally, from ten to fifteen minutes after the race while returning to the quarters in the launch. There was an average preliminary rise in temperature, corresponding to the preliminary fall in weight, amounting to about 1.5° F., followed by a slight rise of .2° during the four-mile race. In the case of the four-oared crew the average preliminary rise was .7° and a further rise during the two-mile race of .7°. A glance at the Table (V) shows that on the whole those men who had the greatest preliminary rise had either a stationary or falling temperature during the race (Nos. 2, 4 and 5). The other extreme was seen in No. 9, who had a preliminary rise of only .2° and a rise during the race of 2.6°. In several instances the net variation was very slight.

It was hoped that the temperature observations would throw some light on the remarkable results obtained by Drs. Williams and Arnold in their observations of the Marathon runners.[1] They found a uniform drop during that race (a 25-mile run) of 2° to 5½°. That race, however, was run in the middle of April at a temperature of 44° F. and against an easterly wind — the conditions all favoring rapid cooling by conduction and evaporation. Furthermore, the temperatures were all taken in the mouth and after nearly three hours of rapid breathing of air at 44° F. it is not unreasonable to assume that the mouth cavity may have been cooler than the body generally. One cannot accept as proved their assertion that after prolonged exertion the temperature is invariably lowered. It is the same with their implication that a subnormal temperature during training means "staleness." This idea was apparently based on the single observation that the temperature of one of the contestants was 97.5° before and 97° after a practice run; that the man was advised to rest and to partake of more carbohydrates; that on the morning of the race his temperature was 98.2°, and finally that he was among the winners. This observation proves nothing except that a rest and some carbohydrates are good things before a race. The temperature variation was quite within normal limits. If subnormal

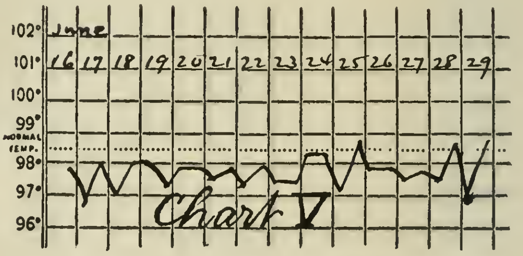

Chart V. Temperature Chart of No. 4.

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[1] Philadelphia Medical Journal, iii, 1,233.

temperature means overtraining, then nearly every man in the Harvard crew squad was overtrained at one time or another during the last two weeks before the races, a statement which certainly would not be borne out by the other facts in their condition nor by the vigor which they all displayed during the last time-row and especially during the races. The rise of temperature observed just before the races certainly did not mean a rapid recovery from a condition of "staleness," but simply indicated that for some reason, probably a nervous one due to excitement, the heat production was greater than the heat loss. During the boat races, which were rowed on a clear, sunny day at a temperature of about 80° F. and low humidity, the conditions were favorable for rapid heat loss by perspiration and radiation, so that the excessive heat production which, according to all physiological experience, must have taken place was readily dissipated and the temperature balance maintained. On the whole we must admit that a subnormal temperature, while of possible significance, cannot yet be regarded as a positive proof of overtraining.

Table V. Variations in Temperature during Races.

	Varsity Eight.								Varsity Four.					
	1	2	3	4	5	6	7	8	9	10	11	12	Av. of 8.	Av. of 4.
Temperature at 8 A. M.	97.8	97.7	98.3	96.6	97.6	99.0	99.0	98.6	97.0	98.4	98.3	98.4	98.1	98.0
Temperature before race.	99.2	100.0	99.2	98.6	99.7	100.6	100.2	98.9	97.2	98.7	99.8	99.2	99.55	98.73
Temperature after race.	100.7	98.7	100.3	98.7	99.4	100.6	100.2	99.2	99.8	98.4	100.2	99.3	99.73	99.43
Preliminary rise.	1.4	2.3	0.9	2.0	2.1	1.6	1.2	0.3	0.2	0.3	1.5	0.8	1.5	0.7
Variation in race.	+1.5	−1.3	+1.1	+0.1	−0.3	0.0	0.0	+0.3	+2.6	−0.3	+0.4	+0.1	+0.2	+0.7
Total variation.	+2.9	+1.0	+2.0	+2.1	+1.8	+1.6	+1.2	+0.6	+2.8	0.0	+1.9	+0.9	+1.7	+1.4

(To be continued.)

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A SAFE AND QUICK METHOD OF JOINT AND BONE FIXATION.[1]

BY EDWARD A. TRACY, M.D., BOSTON.

In this paper will be briefly described a method for quickly producing fixation of the joints and bones. The fixative material employed is wood fibre reinforced with gauze. It is made in large sheets of two thicknesses. It is adaptable to all cases of surgical splinting. The fixation is produced by moulding upon the limb a properly shaped piece of the splint material, (this piece may be termed the "splint-blank") and bandaging it snugly to the limb. When moulded and bandaged properly the moistened wood fibre produces immediate fixation. Sometimes, when great strain on the material is apprehended, as, for example, in hip-joint fixation, it is advisable to apply a double splint-blank.

Before describing the technique in detail of this method of fixation, I shall define a term already mentioned — splint-blank. The term is newly coined. My apology for it is that it is a term of convenience in the descriptions that follow. When it is desired to immobilize a limb or a part of it by this method we cut a paper pattern so as to embrace the limb in the same manner we wish the completed splint to embrace it; this paper pattern we lay on a sheet of the splint material and we cut from the sheet a piece following the outline of the pattern; this piece is the splint-blank; when moistened with water and bandaged over the limb it forms the splint. A splint-blank, therefore, is a piece of splint material cut in such fashion that when moistened it can be bandaged over the part for which it is intended, producing fixation of the part.

In describing the manner in which fixation of the various joints and bones is produced by the new method, I shall proceed in the following order: (1) The fingers; (2) the thumb; (3) the wrist; (4) the bones of the forearm; (5) the elbow-joint; (6) the arm; (7) the shoulder-joint (humeroscapular); (8) the claviculoscapular joint; (9) the cervical spine; (10) the ribs; (11) the hip-joint; (12) the hip and knee joints; (13) the knee; (14) the leg; (15) the ankle; (16) the toes.

(1) *The fingers.* — The fingers together can be immobilized by bandaging a piece of moistened splint material folded over the palm and back of the hand. I have done this in the treatment of multiple lacerations, getting quick union because of the immobilization produced, and giving the patient comfort because of the protection afforded the injured parts. This use of wood-fibre material to produce immobilization of the soft tissues during healing originated with Dr. Fletcher, of South Boston. His experience, related orally, led me to use the material for this purpose.

Fixation of a separate finger is produced by moulding the correctly shaped splint-blank over the back and sides of the finger to be immobilized and the back of the hand. This bandaged over the finger and hand produced a complete fixation of the finger. For cases of finger fixation the thinner sheet of the splint material should be used. I have produced fixation of the separate fingers for joint disease and compound fractures.

(2) *The thumb.* — The thumb can readily be immobilized by bandaging to it and the hand a splint-blank that encloses the thumb and the back and front of the hand, taking care the cross-palm lines in the hand are not covered by the material, which could thus interfere with flexion of the fingers.

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[1] Paper read to the New York County Medical Society, November 21, 1898.

I have employed this method in immobilizing dislocated and contused thumbs.

(3) *The wrist.*— A perfect fixation of the wrist-joint can be produced by bandaging over the wrist, hand and forearm a moistened splint-blank cut so that it covers the back of the hand, wrist and forearm. I have frequently produced immobilization of the wrist in this manner in the treatment of sprains, fractures and joint diseases. The fixation is absolute, and the splint readily permits of the most efficient treatment of Colles's fracture: retention of the fragments until reunion takes place; passive motions of the fingers and thumb from the first day, and careful passive motion of the wrist from the fifth day.[2]

(4) *The bones of the forearm.* — The bones of the forearm are immobilized by bandaging a moistened splint-blank cut so as to lie over the back of the forearm and hand and over the palmar surface of the forearm; or by bandaging two splint-blanks, one cut so as to lie over the dorsal surface of the forearm and hand, the other over the palmar surface of the forearm, and cut so as to overlap the other at either radial or ulnar side. This forms a casing for the forearm and permits of efficient maintenance of the fixation of the enclosed bones.

In a case of fracture of the ulna, upper third, a dorsal splint moulded on the forearm was found sufficient to produce fixation. In a case of fracture of the ulna produced by the kick of a horse a splint was moulded over the external aspect of the flexed arm, the dorsal aspect of the forearm and hand, producing in this manner immobilization of the elbow and wrist joints; a splint was also moulded over the palmar surface of the forearm; this combination produced absolute immobilization of the radius and ulna, deemed desirable in this case, an old man with double cataract and atheromatous arteries.

In seventeen days there was union; on the twenty-first day the angular splint was cut across at the elbow, so that it became a simple dorsal forearm splint. For safety this was left on eight more days, and twenty-nine days after the beginning of treatment the patient was discharged well, with normal mobility; the callus but moderate in size.

(5) *The elbow-joint.*— Fixation of the flexed elbow-joint is readily effected by bandaging a moistened splint-blank, cut so as to embrace the arm, and the dorsal and ulnar aspects of the forearm, the forearm being in the semi-prone position. This splint form has served well in several cases for fixation of the elbow joint after reduction of dislocations, and in cases of fracture into the joint. The joint can be fixed at any angle, the shape of the splint-blank varying with the angle.

(6) *The arm.*— Fixation of the arm for fractures of the shaft of the humerus.

Fracture of the surgical neck. — I have treated several cases of fracture at the surgical neck of the humerus by moulding a splint-blank over the shoulder and external aspect of the arm (a shoulder cap), and another splint-blank to lie over the inner aspect; these were bandaged over the arm and the arm thus splinted was bandaged to the side of the body, the elbow being flexed and the wrist supported in a sling. This method of splinting for fracture of the surgical neck is essentially Hamilton's. He used leather. Wood-fibre material is preferable because it is much easier to manipulate and is porous, a decided advantage over leather.

Fracture of the shaft near the elbow-joint. — In a recently treated case of transverse fracture of the shaft of the humerus just above the elbow-joint in which the lower fragment was tipped forward so as to allow of considerable hyperextension, the fracture was reduced by pulling on the elbow-joint in the direction of the line of the shaft and at the same time flexing the elbow to an acute angle. The fragment was kept in this position by keeping the elbow to an acute angle and a moistened splint-blank cut so as to embrace the tip of the shoulder, the arm and the forearm in this position was moulded and bandaged over the parts. The splinted member was then bandaged so as to lie over the front of the chest wall. This splint was worn for sixteen days, then discarded for a sling. A few weeks of passive motion, massage, and weight-carrying restored the arm to perfect functional use.

(7) *The shoulder (humeroscapular joint).* — Fixation of the shoulder-joint is readily obtained by bandaging to the arm a moistened splint-blank, cut so as to lie over the shoulder and embrace the arm, and bandaging the splintered arm to the side of the chest, the hand and forearm lying across the front of the chest, under the bandage. The latter bandaging is of importance. When viewed from the front or back this bandage should have the appearance of a triangle, with its apex in the sound axilla, one end of its base over the top of the shoulder, the other at the elbow.

The splint-blank can be moulded over the shoulder by cutting a slit or two in its upper border toward the point that lies over the top of the humerus; this allows an overlapping of the redundant portion of the splint material and permits it to be moulded over the shoulder.

(8) *The claviculoscapular joint.* — Fixation of this joint can be produced by moulding a splint-blank cut so as to lie over the clavicle, the scapula, and to a line on the chest about five inches below the clavicle. This splint is kept in close apposition to the parts, and thus immobilizes the claviculoscapular joint, by means of an elastic webbing loop buckled over the chest. The apparatus is fully described and illustrated in the *Boston Medical and Surgical Journal.*

(9) *The cervical spine.* — The cervical spine can be immobilized by moulding several superimposed splint-blanks cut so as to lie over the occiput, the back of the neck, and the upper back. Le Page's liquid glue should be spread between the several splint-blanks, and the superimposed blanks bandaged singly over the parts. This is somewhat difficult because of the great normal mobility of the shoulder. To aid in the fixation of this splint form by bandaging it, it is well to place a roller compress in the hollow over the neck, of course outside the splint.

In a case of trauma in the immediate region of the left occipito-atloid articulation, I produced fixation of the cervical spine in the manner described with great comfort to the patient.

(10) *The ribs.* — Fixation of the ribs in the ordinary sense is an impossibility. An approximation to it is effected by the swathe, or adhesive plaster. In cases of fracture of the ribs neither of these protect the injured parts from pressure. In the treat-

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[2] See paper on Colles's Fracture in Journal of the American Medical Association, November 20, 1897.

ment of fractured ribs I mould a splint-blank to lie over the fracture and to rest on the sound ribs; this splint, when held in position by a snugly applied swathe, is a source of comfort to the patient because of the protection it gives the injured parts. I have treated broken ribs in every situation of the chest in this manner, always satisfactorily.

(11) *The hip-joint.* — Fixation of the hip-joint is readily produced by bandaging a splint-blank cut so as to lie over and clasp the side of the body from the level of the base of the scapula, and the thigh to the knee. A double splint-blank should be used. The manner of bandaging this splint form to the body is important. The roller should be applied first so as to embrace the body around both hips for several turns; then in figure-of-eight style around the splinted thigh and body; then down the thigh; finally a bandage should be applied around the body and upper part of the splint. The splint I here exhibit was moulded and applied in a case of traumatic synovitis of the hip-joint in a half-hour's time, without assistance. These splints are durable, some having been worn in tubercular cases for more than twelve months.

(12) *The hip and knee joints.* — Fixation of the hip and knee joints simultaneously is seldom required. It can be produced by means of a splint-blank like that for hip-joint fixation — but made longer, so as to embrace the leg below the knee. I have produced such fixation in a case of tuberculous disease of both joints (the left limb) with excellent result.

(13) *The knee-joint.* — Fixation of the knee-joint extended or at any angle is readily produced by the use of wood-fibre splint material. This fixation can be effected by several procedures, each of which will be described.

Fixation of the extended knee. — The simplest method of producing fixation of the extended knee is by bandaging a moistened splint-blank cut so as to lie over the posterior and internal lateral aspects of the leg and thigh — from a half-inch above the ankle to near the pubic bone. The length of the splinting is important, because the further it extends in both directions from the joint the greater is the leverage obtained for controlling the joint. This splint rightly made and applied gives an absolute fixation of the knee-joint. This immobilization can be efficiently maintained by keeping the splint snugly bandaged to the limb. In many cases of traumatic synovitis of the knee-joint I have used this form of splint. I believe that efficient fixation with non-use of the joint cannot be too strongly advised as soon as possible after such injury is received by the knee. This treatment is *curative* and would prevent many of the cases of chronic synovitis, with subacute exacerbations, so frequently met with in practice. The previous history of those cases is that they had no treatment at the time of injury, or that the treatment was manifestly inefficient. It is, I know, a serious matter to insist upon a person who is the main support of a family leaving work for a month. It should be done rather than the patient run the risk of being handicapped in life's struggle by a weak and chronically diseased joint. I would not be understood as advocating excessive splinting, which can be injurious, especially in cases associated with hysteria. After-treatment can remedy the damage done in the rare cases of over splinting — but no treatment can repair the damage done by inefficient treatment directly after the accident.

These remarks about the importance of efficient fixation in the treatment of traumatic synovitis of the knee-joint are applicable to similar injuries of the shoulder-joint. Cases of chronic synovitis of the shoulder are met with having a history of neglect of treatment or very inefficient treatment at the beginning of the trouble. Putting the arm in a sling or strapping with adhesive plaster does not immobilize the shoulder-joint and therefore is inefficient treatment.

The splint form above described I have found very efficient in cases of traumatic synovitis; also to produce fixation after operations on or near the joint, as the removal of movable bodies in the joint and hydroma over the knee-pan.

For long-lasting immobilization, as that required in the treatment of tuberculosis of the joint, splinting that may be described as an encasement of the limb is preferable. This is done by moulding two lateral splint-blanks cut so as to enclose the limb from a short distance above the ankle (about one-half inch) to as near the perineum as possible, one slightly overlapping the other. To mould these accurately over the limb, it is necessary to incise the splint-blanks where there is a redundancy of material; the incisions if properly made allow the redundant material to overlap, and the splint-blank to be moulded into apposition with the limb's surface, and do not weaken the splinting. This method of splinting the knee is superior to the plaster-of-Paris method for the following reasons:

First. The fixation is superior because no cotton batting or other padding is between the fixative appliance and the skin. The nearer a fixative appliance is to the parts to be immobilized the better the resulting fixation. This is a principle of mechanics to be remembered — not ignored.

Second. The splint can be removed and the joint inspected at any time by the easy procedure of unwinding a bandage; the appliance is not injured by such removal.

Third. Subsidence of swelling or tissue atrophy does not impair the immobilizing properties of this splint, for when such occurs, the resiliency of the splint material permits the immediate production of complete fixation by applying the retentive bandage more snugly.

Fourth. The splint is more durable; at the end of eight months it is as efficient as when first applied.

Fifth. The splinting is much lighter, a fact gratefully noted by patients who had before been treated by plaster-of-Paris.

Sixth. The splinting is cheaper.

Fixation of the flexed knee. — Fixation of the knee flexed at any angle is readily produced. A double splint-blank cut so as to lie over the inner aspect and embrace the thigh and leg in that position in which we desire to immobilize it, is bandaged to the parts; this produces fixation.

I have produced fixation of the knee in the flexed position, in the treatment of broken leg-bones, in cases where relaxation of the leg muscles was indicated, the leg-bones being immobilized as described in the next paragraph.

(14) *Fixation of the leg-bones.* — Fixation of the leg-bones is produced by bandaging a splint-blank cut so as to embrace the leg, except its posterior aspect, and extending from the lower end of the front of the tibia to its upper end. This splint serves admirably in the ambulatory treatment of broken legs. No

vague theorizing is necessary to explain why the broken shaft being restored to its right form the splint holds it there, and the body-weight is transmitted through the shaft thus restored to its functional integrity.

(15) *The ankle-joint.*— Fixation of the ankle-joint is readily produced by means of the wood-fibre splint material. I will describe briefly two procedures. A splint-blank can be cut so as to lie over the inner aspect of the leg, ankle and palmar surface of the foot; this if cut properly, when moistened can be bandaged snugly over the parts, thus producing fixation. Another way is to cut a splint-blank from a thin sheet of the material — the splint-blank shaped so that when moistened it will lie over the internal aspect of the lower part of the leg, the palmar surface of the foot, and the external aspect of the ankle and lower part of the leg. This when bandaged over the foot, ankle and lower part of the leg produces a perfect fixation of the ankle-joint.

(16) *Fixation of the toes.* — The big toe can be immobilized by moulding a moistened splint-blank cut so as to embrace it and the dorsal and palmar surfaces of the foot, and bandaging it snugly over the parts. To produce individual fixation of the remaining toes is impractical; they must be immobilized together. The toes are readily immobilized by moulding over them and the foot a splint-blank cut so as to extend from above the heel along the sole of the foot to about two inches beyond the toes; laterally it should extend about three inches beyond the outline of the anterior half of the sole. In moulding this splint-blank over the toes and foot, first the lateral projections of the blank are folded over and moulded upon the anterior half of the foot, then the projecting piece of the blank in front of the toes is brought (lifted) upwards and folded over the others. The whole is snugly bandaged over the foot and ankle. The resiliency of the splint material permits the piece moulded over the heel to be bent downwards to permit of the easy removal of the splint. It can readily be reapplied. This splint form produces an efficient immobilization of the toes. It is illustrated in the *Boston Medical and Surgical Journal*, November 21, 1895.

The method of joint and bone fixation here described is designated safe, because the parts immobilized can be inspected at any time by simply unwinding the retentive bandage; quick, because a few moments are sufficient for applying the splint material in most cases. The efficiency of the immobilization is worthy of consideration. I do not recognize as fixative in the correct usage of the term any material that necessitates the use of cotton batting or other padding between it and the skin.

The Pearl a Urinary Calculus. — According to certain naturalists the pearl is a pathological product, an attempt to get rid of some foreign body, a grain of sand, fragment of shell or something of the kind, which falls into the genital gland or vicinity, and is thus in fact merely a renal or urinary calculus, and the oyster an unfortunate mollusc victim of nephritic lithiasis. An article in the *Revue des Deux Mondes* describes the efforts that have been made to cultivate pearl development by trephining the shell and introducing a tiny artificial pearl as a nucleus. — *Journal of the American Medical Association.*

Clinical Department.

A CASE OF SARCOMA OF UTERUS; REPEATED OPERATIONS; RECURRENCE; DEATH.[1]

BY S. J. MIXTER, M.D., BOSTON.

M. J. C. came to the Massachusetts General Hospital on February 21, 1890, for the first time and gave the following history: Born in Massachusetts; living in West Gardner. Married; fifty-four years old. Family history negative. Has had two children, and since the birth of the last one, thirty years ago, that is, when she was twenty-four years old, has had three miscarriages without known cause. She began to notice a slight flowing at irregular intervals about ten months before her entrance to the hospital. She has had slight pain in the pelvis. She says that something came down into the vagina about six months ago; that she pulled on it and tried to get it out, but it bled and pained her. A large lobulated, fibrous polyp was found with a pedicle attached to the posterior wall of the os uteri.

On February 25th she was operated on under ether. The pedicle of the mass was cut with scissors. Pressure over the uterus led to the birth of two more polyp, and other small ones were removed by forceps through the vagina. There was considerable hemorrhage. A hot corrosive douche was given and the vagina and uterus were packed with gauze. The convalescence was uneventful. She was discharged on the sixth day after operation.

Dr. Whitney reported on February 25, 1890, as follows: A lobulated, moderately firm and translucent growth, the lower surface of which was necrotic. It was composed of fibrous tissue in part, and between the bundles of this was a richly-cellular tissue, in which were evidently the remains of tubular glands; a polypoid growth from the mucous membrane chiefly.

On May 12, 1893, she returned to the hospital. A few months before a vaginal discharge accompanied by backache had set in. Examination showed a round, soft mass, completely filling the vagina. On the sixteenth this was removed, and she was discharged on the twenty-fourth.

A year later she returned with a soft, pulpy mass about the size of a lemon protruding into the vagina. She was not in robust condition, having lost a good deal of blood. A soft, pulpy, purplish foul mass was removed and the uterus curetted. She was advised to return for hysterectomy if she had further trouble.

She returned in a year, complaining of bleeding and a sense of weight in her pelvis. There was a large, spongy, pedunculated mass, nearly as large as a grapefruit, in the vagina, which was removed.

Almost exactly a year later she again returned. A week before entrance a polyp had protruded an inch beyond the vulva and had bled considerably. When she went to stool the polyp went back, she thought, and the bleeding stopped. On examination the cervix was felt as a soft ring lined with an irregular growth. A large amount of material which looked like fish-spawn, only more translucent, was removed. Dr. Whitney reported a small polypoid, or rather papillary-looking mass, composed of a myxomatous base with enlarged and irregularly-shaped gland-like involutions covering the surface; a mucous and adenoid polyp, not malignant."

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[1] Read before the Obstetrical Society of Boston, February 21, 1899.

Returning a year later, she said that three weeks before a soft mass, which had protruded from the vulva for a week or more, broke off, causing considerable bleeding. Two or three days later another mass protruded. In the vagina were found numerous polypi and some sloughing stumps. The discharge was foul. The masses were torn away with forceps and the uterus and vagina curetted. A large teacupful of cyst-like masses was removed.

Five months later she returned with a soft, dark tumor protruding from the external os, which bled on slight pressure. A tumor, the size of two fists, and made up of soft, friable material was removed. This was the first time that sarcoma was reported.

She came back again two months later, that is, last February, having noticed a lump in the neck of the uterus. She had not been free from pain since leaving the hospital. Hysterectomy was performed, the fundus being amputated low down on the cervix. The disease had infiltrated the pelvis and also appeared on the intestines.

She gained eight pounds in the next two months and a half, but in May she noticed that the nozzle of her douche entered the vagina with difficulty. She entered again and a polyp which filled nearly the whole vagina was removed.

In August, however, she came back, and several sarcomatous masses the size of hen's eggs were shelled out of the vagina with hands and scissors. Microscopical examination of one of these showed a typical sarcoma made up of round and spindle cells.

She began to have pain again in September, and the growth appeared at the vulva on October 25th. On the 25th a large, foul, sloughing mass the size of a banana was removed from the vagina. She remained in the hospital receiving the Coley treatment until her death, which occurred about the middle of November.

The above case is reported for two reasons: (1) because sarcoma of the uterus is a comparatively rare disease, and (2) to show the necessity of early radical operation in all cases of recurrent uterine growth or hemorrhage, whatever may be the result of the microscopical examination.

In all, this patient was operated upon eleven times by six different surgeons, including myself, and it was not until the seventh operation that the microscope showed anything malignant. Had the uterus been totally removed after the first or even second recurrence the result might possibly or even probably have been a cure.

Dr. Whitney was the first to my knowledge to insist on hysterectomy in cases of recurrence, whatever might be found by the pathologist, as his experience shows that the growth may be clinically malignant, or at least may become so.

It is due to the various surgeons in charge of the case to state that until the disease was practically beyond radical treatment, the patient refused to have the uterus removed. The later operations were entirely for the relief of symptoms, hemorrhage and sloughing. The extreme rapidity of growth and the great amount of sarcomatous tissue that formed before sloughing took place were striking features of the case.

A CASE OF MYXOSARCOMA OF THE UTERUS AND VAGINA, FROM THE SERVICE OF DR. J. G. BLAKE AT THE BOSTON CITY HOSPITAL.[1]

BY E. H. MACKAY, M.D., BOSTON,
Gynecological House Physician.

On June 21, 1898, the following patient presented herself for treatment at the Boston City Hospital. The case is reported on account of the rarity of the disease in this location, and also on account of its pathological interest. The salient points are as follow:

Mrs. C., age sixty-three, married twenty-five years. She was operated upon at the Massachusetts General Hospital, May 18, 1898, and the following is taken from their records:

"An eroded fungoid mass springing from cervix occupied the vault of the vagina; limits could not be defined by the finger. Discharge very foul. Large masses removed by fingers, tissues found infiltrated and no exhaustive dissection made; discharged June 11th."

Diagnosis. — Myxosarcoma.

The complaint is, that for the past six months there has been considerable loss of flesh and strength, and recently there has been a constant sharp pain across the lower abdomen and small of the back, and a more or less bloody discharge from the vagina.

While the patient was being prepared for examination, a tumor was expelled from the vagina. Macroscopically, it resembled organized blood clot. Its origin was from the anterior vaginal wall, its former attachment being readily felt. Further examination revealed the presence of three or four more tumors higher up, varying in size from that of a lima bean to that of an English walnut. These masses were removed manually and with the curette by Dr. Blake. The pathologist's report of the specimen was: "Mixed-cell sarcoma."

The patient was discharged in twenty-one days relieved.

The subsequent history of the case could not be obtained as the patient left the country immediately after her discharge from the hospital and no relatives or friends could be found to give further information concerning her condition.

The recognition of this varity of new growth in the vagina belongs to the very recent times. It appears in the form of a circumscribed round tumor in the submucous tissue, and also as a diffuse superficial degeneration of the vaginal walls.

Without question, instances of the first sort may without close historical examination be ranked with fibromyomata and those of the vagina may develop in a similar manner to the rare forms of papillary sarcoma of the cervix, into polypoid papillary excrescences.

It is interesting to note at what an early age this growth has appeared in the few recorded cases, and that in a single case it is stated that at birth a tumor the size of a pea was found between the labia. In one case the age was two years, in another, two and one-half years, and in two others, three years.

The anterior vaginal wall was entirely or largely the seat of the growth in six instances, the posterior wall twice, the right lateral once, and the entire circumference once.

In five reported cases in children the first sign was the appearance between the labia, without subjective symptoms, of a small polypoid tumor. When the growth was accompanied by increased secretion, atypical hemorrhages, dysuria, and bearing-down sensations, then it had attained considerable development.

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[1] Read before the Obstetrical Society of Boston, February 21, 1899.

When suppuration and extension to neighboring organs had occured, then the symptoms were dependent on the local changes, and in children especially the pressure symptoms on the pelvic organs were very marked.

A Russian observer reports two cases. The first concerns a strong multipara in whom two years previously there had appeared a small tumor on the posterior vaginal wall near the fornix which slowly increased in size, resisting all local measures. The tumor was about the size of a half dollar and was ulcerated upon its surface.

Prof. Kieter extirpated it and it proved to be a spindle-cell sarcoma lying in the mucous membrane, and extending scarcely at all into the submucosa. Recurrence speedily set in.

Kieter reports a case of similar nature which was seen in the Moscow Marien Hospital, the patient being a female seventeen years old. On the post-vaginal wall was a soft, easily torn tumor the size of a goose egg, and in four months after extirpation it had recurred, and was the size of the fist. The very anemic patient died shortly after the second operation.

Spiegelberg reports a case of fibrosarcoma of the lower portion of the vaginal wall the size of a walnut. This was extirpated, and examination proved it to be a spindle-cell sarcoma. The patient convalesced well, although in poor condition at the time of the operation. Four years afterwards there was no recurrence.

Steinthal divides the disease into two varieties, the polypoid and the diffuse. The former more common in children, and usually situated in the anterior vaginal wall. The latter more common in adults, and found in any portion of the vaginal canal. In adults, when secondary to sarcoma of the uterus, usually first noticed as knobbed polypoid outgrowths in the vaginal vault.

Symptoms. — In children pain and tumor. In adults vaginal discharge and slight hemorrhage from surface of the growth.

Diagnosis made by microscopic examination.

Delay makes prognosis serious.

Treatment early and radical removal of the growth.

Kelly reports two cases where permanent recovery followed removal.

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CASE OF SARCOMA OF THE UTERUS.[1]

BY F. H. DAVENPORT, M.D., BOSTON.

The case I am about to report is interesting not only on account of the ultimate diagnosis, namely, sarcoma, but also for the preceding history, which covers a period of nearly five years. The patient was a married woman who had had one child, and was between forty and forty-five years of age when I first saw her, October 29, 1893. I was asked to see her by Dr. Lovett to operate for the removal of a fibroid polypus. She had had the usual symptoms of irregular flowing and leucorrhea. I found a round polypus about the size of a billiard ball attached by a small pedicle to the uterus, and removed it by twisting and severing the pedicle with scissors. She made a good recovery.

I next saw her in June, 1894, and found on bimanual examination what I supposed to be an enlarged and irregular uterus, the seat of multiple fibroid growths. The patient gave a history of six weeks' constant flowing, which, however, had ceased before she came to me. I advised doing nothing at the time, but in July she consulted her physician at her summer home, who found another polypus extruded from the os uteri. That was removed at St. Margaret's on July 11th. In October of the same year she began to have an increased flow and watery discharge between times, and in December a third growth similar in character to the previous ones was discovered and removed. These growths were to my eye typical fibroid polypi, and with the uterus presumably the seat of multiple fibroids, their gradual development and extrusion was explained. The growth in the pelvis was slowly enlarging. The question of some more radical operation was spoken of at this time, but family considerations made it extremely unwise then, and as the patient's general health continued good it was postponed. Nothing new developed until November 26, 1895, nearly a year, when the fourth polypus was removed. This was done at a time when there had been and still was considerable hemorrhage, and the operation was followed by a decided flow, which was checked by packing the uterus. In fact it was a peculiarity of all these operations that they were accompanied by more flowing than is usually the case.

April 21, 1896, five months after the last polypus, another was discovered. There had been a rapid increase in the size of the tumor since the last operation, so that it reached nearly to the umbilicus, and enlarged the abdomen considerably. It was still thought to be a fibroid. The operation was as usual, and the first day or two of the convalesence uneventful. On the morning of the third day the patient was found to be in intense pain in the abdomen, coming on in paroxyms, alternating with collapse, weak pulse, vomiting and suppression of urine. Under stimulation she improved, but was in a critical condition for twenty-four hours. On examining the abdomen at this time it was found that the tumor had disappeared and the abdomen was flat. Of course the explanation was a spontaneous rupture of a cyst, and the collapsed condition was due to the flooding of the peritoneum with the cyst contents and its efforts to absorb it. I regret that the exact notes of the case at this time cannot be obtained, as the condition was a very unusual and interesting one. Perhaps Dr. Lovett or Dr. Stone, both of whom saw her at the time, can give fuller details.

An examination of the specimen removed at this time by Dr. Curry, of the City Hospital, showed it to be a submucous fibroid which had undergone myxomatous degeneration, portions of which were necrotic, and into which there had been much hemorrhage.

The collapse of the tumor disproved the diagnosis of a fibroid, and put a new aspect on the case. I hoped that it was one of those thin-walled cysts of the broad ligaments which rupture easily and do not refill. Unfortunately that did not prove to be the case, for after some months the tumor could be again felt, and grew so rapidly that by November of that year it was deemed best to operate for its removal.

A laparotomy was performed on November 30th, and the following condition of things found: The uterus was only slightly enlarged, and there were no fibroids in its substance as far as could be made out. Certainly none were visible on the external surface. On the left side there was an ovarian cyst about the size of a cocoanut, closely adherent to the uterus, and with a broad attachment to the broad ligament. This was slowly detached, the stump both of the broad ligament and along the side of the uterus being ligated with interrupted silk sutures. A smaller tumor of the same kind was found on the right side and was also removed. The question of removing the uterus was discussed, but as there was no apparent tumor, and the operation had already lasted over an hour, it was thought best to leave it. I was the more ready to do this since I had had a number of cases where uterine hemorrhage was a prominent symptom of adherent cysts of the ovary, and I hoped by removing the tumors and bringing about the menopause to check both the flowing and the formation of the polypi.

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[1] Read before the Obstetrical Society of Boston, February 21, 1899

The convalescence following the laparotomy was uneventful, and it was confidently hoped that the long series of gynecological events had come to an end. Such was not the case however. February 8, 1897, about two months after the last operation, another polypoid mass was discovered, and removed on February 19th.

Through the spring and early summer the patient's general condition was fairly good, though it could not be said to be first rate. There was considerable discharge, which at times was bloody, and her strength did not return as was expected. In July she had an illness at her home in the country which, while associated with some flowing and discharge and pain, was not definitely attributable to any uterine condition. I saw her at the time, and found no reason in her local condition for interfering.

In October, 1897, she began to flow and also to have pain, which would come on usually at a certain time of day, attain a good deal of intensity, and last from one hour to two or three. This was situated in the lower abdomen, somewhat to the right side, about the location of the right ovary. Examination repeatedly made revealed nothing but a slightly enlarged uterus, with nothing to account for the pain. There was considerable discharge, both blood and small grayish or reddish masses, which were twice examined by Dr. Whitney and pronounced merely blood clot, without any evidence of tissue. At this time she began to take morphia in very small doses, one-twelfth often sufficing to relieve the pain completely.

Although it seemed probable that some operation would be eventually necessary, yet in the absence of any direct evidence of a malignant growth there were certain very strong reasons involving family complications against any operation which might have a fatal termination. Through the winter of 1897 and 1898 her condition varied within moderately fixed limits. At times there was discharge and some flow, at others she was practically free. The pain varied greatly, at times interfering only slightly with her usual occupations, but sometimes so intense as to sap her strength and confine her to the bed or house for some days. She lost flesh, became sallow, and her nervous system, which was naturally very strong, showed the effect of the prolonged strain.

By the middle of April, 1898, it was thought best to explore the interior of the uterus more thoroughly, and a curetting was done on the 13th, which resulted in the removal of a mass of tissue which Dr. Whitney described as follows: The mass from Mrs. X consisted of a fragmentary, soft polypoid, necrotic and hemorrhagic tumor of considerable size. Microscopical examination showed a more or less homogeneous mass of small round cells, which were vascularized by relatively large thin-walled blood vessels with extensive hemorrhage and degeneration of the cells. The cells were mononucleated, rather elongated and irregular, and were of the type of connective-tissue cells. There is no evidence of any epithelial growth, and from the history taken in connection with the microscopic examination the diagnosis of a small round-cell sarcoma is justified.

This diagnosis rendered an operation necessary, so on May 5, 1898, at St. Margaret's, a hysterectomy was performed. The operation was a difficult one. It was begun by the vagina, the uterus being first curetted and packed. The vaginal mucous membrane at its junction with the cervix was then divided with the Paquelin cautery and an attempt made to tie or clamp the broad ligaments. Owing to adhesions and thickenings due to the double oöphorectomy previously done, this was found to be impossible, so the abdomen was opened, and the operation completed by that route. It was a long and tedious operation, but the patient stood it very well.

The convalescence was marked by two unusual events. On the third or fourth day the abdominal incision broke down and discharged a large quantity of foul-smelling pus. The abscess had burrowed between the layers of the abdominal wall, but did not, as far as I could make out by careful probing, communicate with the peritoneal cavity. For days there was considerable difficulty with nourishment, the patient vomiting frequently, and the bowels moving irregularly. She had considerable pain and required some morphine for its relief.

On May 15th, ten days after the operation, the evening temperature was 101°. The patient had had considerable pain all day, but the bowels had moved twice, and she had taken a fair amount of nourishment. On the morning of the 16th she vomited, appeared listless and indifferent to her surroundings, and disinclined to talk. The temperature had dropped to 98°. Throughout the day it continued to fall, and at 7.30 in the evening reached its lowest point, 95.08°. The pulse grew more rapid, and ranged from 110 to 120. She was given champagne in small quantities, enemas of salt solution, with brandy, brandy and ice by the mouth, strychnine, one-sixtieth grain, several times. She was not able to take any nourishment. Urine was passed at intervals, but the whole amount for twenty-four hours was small. The bowels moved by enema. Her general appearance was bad, and at my late evening visit I felt there was considerable doubt if she would live until morning. The temperature began to rise in the night, and the next morning was 99°, rising to a little over 100° that night and then dropping slowly day by day until in a week it was practically normal. With the reaction the pulse rose in frequency, reaching 135 on the evening of the 17th. Dr. Lovett saw her with me in this attack, and we felt we could eliminate septic peritonitis, or in fact any septic process, and I must confess I am to this day puzzled as to what caused this sudden change.

The convalescence was now rapid, the abdominal wound closed, and the patient went home at the end of four weeks. I have examined her within a week and her condition is one of apparent perfect health now, nine months after the operation.

Dr. Whitney reported on the uterus as follows:

The preliminary examination of the tumor of the uterus from Mrs. X shows it to be a myxosarcoma which has started in the fundus, thus confirming the diagnosis made earlier from the scrapings.

SARCOMA OF THE UTERUS.[1]

BY WILLIAM F. WHITNEY, M.D., BOSTON.

Sarcoma of the uterus has been recognized for a long time though comparatively a rare affection. Geisler computed that it occurred in 1.2 per cent. of uterine tumors, and its relations to cancer and fibromyoma were in the proportion of 1 to 50 of the former and 1 to 36 of the latter. Without imposing too much upon your patience, I can only give what may be regarded as a short *résumé* of the results of observations upon this disease.

In the first place comes its clinical course and prognosis, and in the second its anatomical aspects.

In studying its history from the recorded cases we are met with the obstacle that they are rarely finished. Thus while the earlier history is fairly well given and the operative procedures for relief, the final outcome is often uncertain. So that whether treatment will prolong life and mitigate suffering must be for the present and future to decide, rather than the past, with its death list from sepsis.

In an analysis of 81 cases in which the age was given, there were found 12 before thirty years of age, and 70 between thirty and sixty-one years (the oldest), or dividing them at forty-five years (the climacteric), it was found that 26 occurred before and 45 after that period.

Or to put it in a way to be more easily remembered, it may be said that sarcoma of the uterus rarely occurs after sixty years of age, and that it occurs six times as often in the last half of that period as in the first half, and that the greater number occurs between the age of thirty-five and fifty-five years.

In regard to duration the analysis is rather more vague. But dating from the first appearance of symptoms till the end of the time of the published record of 57 cases, it was found that in 18 it had lasted two years, in 19 from two to six years, and in 22 under two years.

In dividing these up by decades it appears that a larger number of the longer cases falls between thirty-five and forty-five. This is perhaps natural, as during this period the vital forces are strongest and best capable of resisting the wasting effects of the disease.

The most prominent symptom is hemorrhage, being absent in only one case in which the symptoms were especially mentioned. Pain is often present.

Of the objective symptoms, enlargement of the uterus is very constant, with a tumor sometimes presenting at the os, or within the vagina, as a rule with a smooth surface, sometimes lobulated and not deeply ulcerated.

Death usually occurs from anemia and debility; metastases being rare, and when present often found in the lungs.

The differential diagnosis between this and cancer, or fibromyoma, will depend, in the greater number of cases, upon a histological examination. The etiology is as obscure, and as yet nothing which can even be regarded as a predisposing cause has been suggested. Age as a factor differs from that of sarcomas elsewhere, as we have seen that it occurs oftener after forty than before.

With this brief summary the clinical aspect of the disease can be left.

Upon the anatomical and histological characteristics we are much better informed, and numerous interesting facts have been brought out. Sarcomas are found starting from the fundus or the cervix, the latter presenting some peculiarities that have placed them in a class by themselves. Those of the fundus are subdivided by their place of origin, whether in the mucosa or in the wall proper. And to these is added a class which starts from the decidua or villi of the chorion, about which at present there is an active controversy. But this will be left out of consideration as it would take too much time.

The richly cellular tissue lying between the uterine glands needs but little change in the energy of its growth and the shape of its cells to become a sarcoma, and it is only to be wondered at that it does not occur more frequently. In its gross appearance it is a smooth, more or less lobulated, often polypoid growth, circumscribed or extending more or less completely over the entire endometrium. The glands may atrophy or keep pace with the development of the new growth, either preserving their typical form or becoming solid strings; in the latter case the variety of carcino-sarcoma is produced. Later the uterine wall may become involved and invaded, and a great development of blood-vessels take place with extensive hemorrhage. The case which Dr. Davenport has reported would illustrate a round-cell sarcoma of endometrial origin.

With the elongation of the cells the spindle-cell type is produced, associated, in a few cases, with multinuclear or giant cells. Those starting around the sheath of the blood-vessels (perithelioma), as well as those with a hyaline degeneration of the vascular walls (cylindroma), have also been reported, and in short all the varieties which the ingenuity of the histologist has been able to devise have been found here.

In the wall of the uterus the tissue between the muscular fibres may be the place of origin, or it may arise from the degeneration of a fibromyoma. For a long time such a change was considered probable from the appearances to the eye, but the microscopic proof of this was furnished by two independent observers, Williams[2] and Pick,[3] at the same time, who have shown the direct metaplasia of the muscular fibre into sarcomatous tissue, and Van Kahlden,[4] who has described the same change of the fibrous tissue.

To the eye the sarcoma of the wall appears as soft, homogeneous, pale reddish-gray nodules which may grow into the cavity of the uterus as polypoid masses, and in their advanced stages their point of origin is not always easy to make out and often requires careful study. The peculiar form which occurs in the cervix has been well presented by Pernice[5] and Pfannenstiel,[6] and the latter has collected twelve cases. He designates it as a "botryoidal (berry-like) sarcoma of the cervix." It occurs chiefly at puberty or towards the climacteric, and in all the cases so far described has been fatal. It appears usually as a polyp, in some cases so deeply lobulated as to look like a mass of red berries (from whence its name).

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[1] Read before the Obstetrical Society of Boston, February 21, 1899.

[2] Williams: Zeitsch. f. Heilkunde, Bd. xv, S. 141.

[3] Pick: Arch. f. Gynec., Bd. xlviii, S, 241.

[4] Van Kahlden: Zeigler's Beitrage, Bd xlv.

[5] Pernice: Virchow's Arch., Bd. cxiii, S. 46.

[6] Pfannenstiel: Virchow's Arch., Bd. cxxvii, S, 305.

In several cases the orginal growth has been removed, and the microscopic examination has shown the character of a simple mucous polyp; later it has recurred and cells of varying size and shape have been found. Usually the later structure is that of an edematous fibroma, to which in a few cases a second tissue cartilage or striped muscular fibre of an embryonic type has been joined.

It has been suggested that as yet a radical operation (hysterectomy) has not been done in any of these cases, from the apparently benign character of the primary growth, and that the prognosis should not be worse than in other sarcomas, since metastases are infrequent.

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Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

MALCOLM STORER, M.D., SECRETARY.

Meeting of February 21, 1899, the President, Dr. Alfred Worcester, in the chair.

Dr. F. H. Davenport read a paper entitled

A CASE OF SARCOMA OF THE UTERUS.[1]

Dr. E. H. Mackay read a paper entitled

A CASE OF MYXOSARCOMA OF THE UTERUS AND VAGINA, FROM THE SERVICE OF DR. J. G. BLAKE AT THE BOSTON CITY HOSPITAL.[2]

Dr. R. G. Wadsworth read a paper by Dr. S. J. Mixter entitled

A CASE OF SARCOMA OF THE UTERUS.[3]

Dr. W. F. Whitney opened the discussion.[4]

Dr. J. G. Blake said that his case had been very interesting and to him a unique one. The vagina was filled with a large fungous-looking mass, which on examination by the pathologist was said to be a spindle-celled sarcoma.

Dr. Whitney said that Dr. Davenport's case was probably of endometrial origin. He regretted that the changes in Dr. Mixter's case could not be followed; also that an autopsy could not be obtained.

Dr. Pearse said that Dr. Blake's case started from the uterus and involved the vagina. The growth was a giant-cell spindle sarcoma, which is very rare, Williams finding giant cells in only 12 out of 100 cases.

Dr. Engelmann said that he had always looked upon the growth as developing subserous or submucous like the fibromata, instead of, as Dr. Whitney said, from the muscular layer. He always advised a radical operation after one thorough curetting. He thought he had seen cystosarcomatous degeneration after treatment; he has never seen sarcoma developed in the vagina or cervix.

Dr. Washburn had seen one inoperable case develop in the fundus; the patient lived six months and died of exhaustion.

Dr. Whitney said while the development of sarcoma from the muscular elements of the uterus was not common, yet he believed such change does take place. It was often very difficult to decide whether the growth was from the muscle or the submucous tissue. The cases of Williams, Pick and others seemed to support the theory that there is a direct transformation of the unstriped muscular fibres into sarcomatous tissue. These cases should have an early radical operation, and the prognosis would be certainly more favorable than in carcinoma, as they do not invade other tissues or form metastases as early or rapidly as in that disease.

Dr. Davenport said delay in the final radical operation in his case was because of several curettings for examination, etc.

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AMERICAN CLIMATOLOGICAL ASSOCIATION.

SIXTEENTH ANNUAL MEETING, HELD AT THE ACADEMY OF MEDICINE, IN NEW YORK CITY, MAY 9, 10 AND 11, 1899.

(Concluded from No. 8, p. 199.)

Dr. Otis read a paper by Dr. R. H. Babcock, of Chicago, entitled:

ALTITUDE AND HEART DISEASE, WITH REPORT OF CASES.

Dr. Henry Sewall: All discussion as to the effects of altitude on heart disease is based on theories of the mechanics of circulation, of which we know very little. My colleague, Dr. W. H. Bergtold, tells me that his results of study of the blood in Denver show a very extraordinary increase of specific gravity. It is stated on good authority that preceding a loss of compensation in heart disease we have a sudden diminution in the specific gravity of the blood. For a long time I have given particular attention to conditions of circulation in people living in Colorado, and I am convinced that in most normal hearts there is an overtaxing of the right side which persists for some days or weeks after arrival in that region. The proofs of this lie in observations upon the reduplication of the heart sounds. The observations I have made from a clinical standpoint agree quite closely with those made by Dr. Babcock. After a little while, the signs which indicate this overburdening of the right heart disappear in those cases which do well, but not in those cases which do badly. Mechanically, the heart can stand more insult than any other organ in the body. This has been shown by the experiments of physiologists on mammalian hearts. This overloading of the right side of the heart which is evidenced during the early stages of a sojourn in high altitudes is easily explained by the increased aspiration of blood into the thorax; compensation occurs later in the increased capacity of the lungs. After the right heart becomes stronger and the pulmonary capacity is increased the circulation will go on quite well.

I have had under observation for some months a patient with marked mitral stenosis who came to me from Chicago, where she had been under the careful observation of Dr. Babcock. When I saw her about six months ago during her last trip in Colorado, I questioned her carefully as to the effect of various altitudes upon her condition. She said she could stand Colorado Springs, with its altitude of 6,100 feet, with only fair comfort; in Denver, 5,280 feet, she was just as comfortable as in Chicago, and better than in Los Angeles; but at Cripple Creek, with its altitude of 9,300 feet, she at once began to feel uncomfortable, and at the end of a week broke down completely. Two months ago I saw the patient through an attack which had come upon her in Cripple Creek. She soon after returned to her normal condition.

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[1] See page 214 of the Journal.
[2] See page 213 of the Journal.
[3] See page 212 of the Journal.
[4] See page 216 of the Journal.

Dr. Charles E. Quimby, of New York: For seven years I have been treating all forms of valvular and mural diseases of the left heart, with the exception of mitral stenosis, by pneumatic differentiation. There is no other therapeutic measure whose action is so definite or constant. While it is true that liquids are incompressible, nevertheless in the treatment of cardiac disease we must recognize a force that is developed by blood compression.

Dr. Babcock: I am very sorry that I did not hear more from our Colorado contingent, for I began to be very shaky about the correctness of my theory. Practical experience is worth more than theory, and these men have all had experience with cardiac patients which might entirely upset the theory that the rapidity of the circulation was the cause of the disturbance of the heart in certain cases. Particularly was I overwhelmed last night when Dr. Sewall informed me that one of my patients with pronounced mitral stenosis was walking about Denver in comparative comfort. Nevertheless, I think that as a rule the principle can be laid down that mitral or aortic stenosis should be regarded as contraindications to a residence in high climates, also when there are complications such as pleuritic adhesions. One individual with a certain degree of mitral stenosis can endure the altitude of Denver while another with a similar lesion cannot endure a much lower altitude, and it is hard for us to explain this. The explanation will probably be found in some change in the myocardium, perhaps a degeneration, which, when co-existing with valvular disease, will determine whether or not patients can sojourn in certain altitudes. My paper was simply offered in the way of a suggestion, and in the hope that it would stimulate the members of this Association to report more cases of this kind, and to lead them to realize that the mere existence of cardiac disease does not, *per se*, contraindicate a sojourn in high climates.

Dr. S. Edwin Solly, of Colorado Springs, read a paper on

RECENT INQUIRIES CONCERNING BLOOD CHANGES INDUCED BY ALTITUDE.

All admit that there is a real or apparent increase in the number of red blood cells within a day after ascent to a high altitude; the hemoglobin and specific gravity of the blood also increase; on returning to a lower altitude these factors decrease, but a secondary rise follows. Experiments upon animals in bell-jars proved that blood taken from the aorta and liver showed an increase of from 20 per cent. to 50 per cent. in the number of red cells as the pressure increased. A short time after the animals were removed there was a decrease and then a rise which persisted so long as the animals were under observation. Anemic children were observed to have an increase after being sent to the mountains, and a persistent increase after their return. The number of red cells has been noted under these experimental conditions to be the same in blood taken from aorta and liver as from peripheral vessels.

Dr. Solly holds that the increase of red cells on ascending to an altitude is real and not apparent, and he made a request that physicians would make careful records of the blood before sending patients to Colorado. It was urged that the Association take the matter in hand and appoint a special committee to conduct such an investigation.

Dr. E. O. Otis: When Dr. Solly read his exceedingly interesting paper last year before the Philadelphia County Medical Society, I expressed myself then as not convinced from the proof which he adduced that the polycythemia to which he referred was a genuine one and not limited to the peripheral vessels. I still do not feel quite sure that this is a true polycythemia. Is it a fact that the whole mass of blood is increased, and are the experiments which have been made thus far conclusive? We have, it is true, the experiments of Egger, who found this polycythemia in the blood taken from the deeper vessels, and we have these further experiments as narrated by Dr. Solly. Granting the fact that there is an actual increase of red blood corpuscles in the whole mass of the blood, how do you explain the fact that there is a rapid destruction of them on returning to the sea-level without, apparently, any more signs of general destruction than we know does occur? Why is such a return to the level not accompanied by the symptoms which occur when a similar destruction is the result of ordinary disease, as in icterus and hemoglobinuria?

Dr. A. Jacobi: There is one point that struck me, namely, the disproportion between the increase of red blood cells and the hemoglobin. This, I think, is a very common occurrence, and it should not be attributed to the effects of altitude. We see it continually in convalescents. Yesterday I examined the blood of a boy of seven years who, six weeks ago, after having been anemic all winter, had three and one-half millions of red cells and from seven to eight thousand leucocytes, and 60 per cent. of hemoglobin. His breathing was shallow, but he was fairly comfortable as long as he did not exert himself. Yesterday he had four and one-half millions of red cells, and fifteen thousand leucocytes, a proportion of one to three hundred, and only 56 per cent. of hemoglobin. The disproportion sets in during slow convalescence. I have frequently seen the same thing before, and certainly the condition cannot be attributed to the effect of altitude alone.

Dr. Judson Daland: Those men who have been working with blood most confess that although their methods are the most accurate in existence considerable variation in the results exists, which to some extent vitiates their value. For example, in examining the blood of twenty-five persons, all presumably in good health, with the instrument of Thoma-Zeiss, the variations in the count of red corpuscles ranged from two to five hundred thousand, the count being made from the same drop of blood by two different observers. In making our calculations we count sixty-four squares, and the number of corpuscles actually counted in proportion to the whole number contained in the cubic millimetre is comparatively few, so that a slight error by multiplication amounts to considerable. We observe also in using the hematokrit, that the question of the size of the corpuscle comes in.

Each corpuscle occupies a certain amount of space, and this again causes inaccuracy. In using Fleishel's hemometer, the colored dilution of the blood compared with the colored wedge of the glass may cause mistakes. A variation of five per cent. or less I consider legitimate. Another point is that the light in the hemometer should be properly regulated. Very frequently, if the light is strong, we are unable to make a comparison. Still another point is to reduce the area which is under observation, cutting down a large area to a narrow slit, thus minimizing the chance of error, and what we call focusing the eye of the observer upon the wedge shaped piece of glass deserves consideration, as if you place the eye directly over the narrow slit your count is more apt to be correct.

Whether there is or is not an actual increase in the number of red blood cells per cubic millimetre resulting from high altitude I do not know, but it seems to me that it is fairly safe to conclude that there is a blood regeneration. The general effect of the climate in high altitudes is usually beneficial; there is an improvement in the general health, and the blood-making process is a part of that. We may therefore reason from that point of view. In those cases where a diminished quantity of air enters the chest there is a corresponding diminution in the amount of hemoglobin and the number of red blood cells. The red blood corpuscle is more or less the index of the amount of oxygen required by the body, and we can have a very rapid increase in the number of red blood cells without a corresponding increase of hemoglobin. Where we have large volumes of air enter and leave the chest there is a greater demand on the part of the body for oxygen, and nature's response to that would be the production of a larger amount of hemoglobin and probably of hemoglobin carriers.

Dr. B. P. Anderson, of Colorado Springs, read a paper on

INTERMEDIATE ALTITUDE FOR THE CONSUMPTIVE.

He said: My experience has been that in some of this class of cases benefit is received by a change to an intermediate altitude, and for the past several years I have urged such cases to seek temporarily an altitude of from 3,000 to 4,000 feet above the sea-level, and, if benefited, to remain until all active symptoms disappear. Following this advice, the rule has been that such cases were enabled to return to the higher altitude of Colorado Springs, and upon the second trial improvement continued. Experience has again taught the pertinent fact that the class of cases coming under observation which do not improve or show evidence of a subsidence of active symptoms after a residence of five or six weeks will not be benefited by longer stay, but, on the contrary, will continue to lose ground, and should be ordered a change at once. In advocating the change to a lower or intermediate climate I would be understood as meaning those cases which we term curable, or at least in which a favorable prognosis has been given. In the selection of the most favorable climate for such cases I was largely aided by having my attention called some eight years since to the Mesilla Valley, in New Mexico — a valley situated about forty-five miles northwest of El Paso, Texas. Invalid patients coming to Colorado for the cooler summer months, after having spent the winter in this valley, were the first to attract my attention. Their enthusiasm as to dryness, sunshine, the greater number of days one could remain in the open air, etc., did not impress me so much — all of which advantages we have here in Colorado — as did the fact of their improvement, which could only be attributed to the advantage of altitude, which averages from 3,500 to 3,800 feet, combining with its lower altitude the important essential of a maximum amount of sunshine and dry air. Commencing with the fall and winter of 1892, I have regularly advised those patients who for the most part did not progress favorably in Colorado to seek this climate. Since 1892 I have a record of somewhat more than 200 cases who spent the winter months in this climate. My record embraces many cases in the various stages of advancement of disease, and many were complicated with laryngeal tuberculosis. The subsequent history of these cases shows that a large majority, or 70 per cent., improved, and are still living.

Dr. Leonard Weber, of New York: I think it is safe to say, after listening to this paper, that the medical profession both in this country and on the other side of the Atlantic are all agreed that what the consumptive wants is pure air, and I think the time is approaching when high altitude will not be considered of such paramount importance in this connection as it was some years ago. This change of opinion has been brought about by the fact that good results in the treatment of phthisis are being obtained in sanitaria situated at altitudes of only 300 feet or even less above the sea-level.

It has always been my practice in the treatment of incipient pulmonary tuberculosis, particularly when the disease is unilateral, to send such patients — providing there be no contraindications in the way of heart or kidney trouble — either to Davos, in Switzerland, or to the Rocky Mountains, or to Southern Texas or Colorado, because I have found that in those regions they were more apt than elsewhere to recover from their disease, or at least have progress stopped.

In a second class of patients, where the disease is more advanced in one lung, and I suspect beginning infiltration in the other, together with considerable fever and an irritating cough, my experience has taught me that they do better at moderate altitudes, say about 3,000 feet above the sea-level, in regions such as the author of the paper mentioned. Of course, we all know of even advanced cases, with hemoptysis, that improved at very high altitudes, but I know of other instances where such patients when sent to Colorado did not do well at all and had to return to lower levels.

Dr. Newton, of Montclair: In connection with this subject of sending our patients away to various places where they may get the benefit of the altitude, we should not lose sight of the question of proper food to suit an impaired or feeble digestion. I have seen men out on the frontier who could eat almost anything and thrive on it, but when we are dealing with patients who suffer from the indigestion so common in pulmonary tuberculosis, they had better be kept at home unless we are convinced that they can obtain proper food elsewhere. We cannot fight tuberculosis with poor food. The digestion should always be kept well in sight — much more so than it usually is. A cheerful disposition and good digestion will help a man to recover from pulmonary tuberculosis, at home or elsewhere, while a man who is easily discouraged and who suffers from poor digestion will be handicapped in the best of climates.

DR. JAMES B. WALKER, of Philadelphia, read a paper on

CLIMATE IN RELATION TO RENAL DISEASE.

He considered the influence of variability of temperature and dampness, particularly of the soil, on persons afflicted with renal diseases. In winter, when patients were not inclined to do so well as in summer, he was in the habit of sending them to Lakewood or Atlantic City.

DR. COLEMAN, of Augusta, Georgia, testified to the comparative infrequency of renal disease in the South. The negroes have it more commonly than the whites, owing to poorer clothing and less hygienic surroundings.

DR. JUDSON DALAND, of Philadelphia: I was interested in listening to Dr. Walker's paper on the subject of the effect of climate together with the state of dryness of the air and soil on renal disease, and was glad to hear food mentioned in connection with the subject. Probably this food question comes in a little stronger than one might infer from the paper. That a distinction should be made between a winter diet and a summer diet is perfectly clear to us all, and perhaps in the very climate to which he referred the dietetic reactions are shown the soonest. Another point is the quantity of food that is required in different climates. In a warm climate the food required would probably be from fifteen to twenty per cent. less than in a cold climate, and in addition to that you get the benefit of freer action of the skin, and also the action of water, which is taken in larger quantities in such climates.

DR. NEWTON: I wish to add my testimony to the value of such a climate as that of Northern Texas in kidney troubles. I do not remember having seen more than one case of Bright's disease during my four years' residence at Ft. Elliott, which is located in what is known as the Panhandle district of Texas. There the climate is very dry and the people are so dry that they drink all they can get, including a great deal of whiskey.

The rarity of Bright's disease in Texas is referred to in the writings of Dr. H. C. Wood. The subject is a very important one, and is certainly worthy of further investigation.

DR. PHILLIPS, of Washington: The Doctor attributes the benefit derived by nephritic patients who are sent to Lakewood and Atlantic City to the dryness of the soil and atmosphere. The soil of Atlantic City may be dry, but the air there is much damper than it is, for example, at Philadelphia. To explain the beneficial effects derived there by patients, we must look to something besides moisture. Atlantic City has a much more equable temperature than Philadelphia, the diurnal variations being much less; the temperature does not go up so high during the day nor fall so low at night, and for that reason the patient is better able to protect himself with proper clothing. I think the benefit derived by patients suffering from renal disease in certain regions, at least along the Atlantic seacoast, is due more to the temperature than to the moisture. In very dry climates, where perspiration is free and the skin does most of the work, the kidneys are a less important factor.

DR. S. A. FISK, of Denver, stated that he rarely met with a case of Bright's disease in the Rocky Mountain region, and stated his belief that simple albuminuria is not a contraindication for sending a patient to Colorado; on the contrary he finds that such patients do very well. He cited a case under his observation ten or twelve years that corroborated his view.

DR. HENRY SEWALL, of Denver, laid stress on the variability of climate, the constant changes producing irritation, especially when the organs are diseased. In a moist climate conduction is more rapid, chilling is more intense, and the congestions of the internal organs more severe. Dr. Sewall claimed that, because of the altitude, radiation and evaporation are rapid and the temperature equable, therefore sudden chilling of the body surface and internal congestion are less liable to occur.

DR. L. D. BULKLEY, of New York, stated that thirty years ago, while an interne at the New York Hospital, he had albuminuria. He left the hospital, lived on a milk diet, and was told that he could not live very long in New York. He thereupon decided to go to Brazil, but was detained at home. During these thirty years he has had several severe attacks of albuminuria, and one of his sharpest attacks occurred while he was travelling in the Yellowstone Park, where the air is certainly very dry.

While Dr. Bulkley does not entirely accept the statements made regarding the value of climate in renal disease, he said that the condition of the atmosphere has a decided influence upon the frequency of micturition. On certain days the urine will diminish to a few ounces, while on other days urination will be very free. As regards treatment, he lays the greatest stress on the diet and the care of the skin, referring not so much to bathing as to the constant application of woolen garments to the skin, both night and day. This he has practised for years. In addition to this, he drinks a quart of milk daily on an empty stomach. This causes a certain amount of diuresis.

Dr. Bulkley gave these details to show that it is possible for a person with marked albuminuria to live in New York City for at least thirty years, providing he takes proper care of himself.

DR. N. S. DAVIS, JR.: A few days ago I was looking over Dr. Stillman's book, "The Life Insurance Examiner Searching for Statistics," and I happened on figures relating to this subject, the geographical distribution of renal affections. In that book there is a table giving the mortality derived from 5,000 fatalities among insured cases in each of the following groups of States: In the New England States and New York the mortality from renal affections was 3.5 per cent.; in Michigan, Wisconsin, Minnesota and Nebraska, 1.4 per cent.; in New Jersey and Pennsylvania, 3.1 per cent.; in Ohio, Indiana, Illinois, Iowa and Kansas, 1.9 per cent.; in Delaware, Maryland, the District of Columbia, Virginia, Kentucky and Missouri, 2.1 per cent.; in the Southern States, 2.4 per cent.; in Washington, Oregon, California, Utah, Dakota and New Mexico, 2.6 per cent.

It would appear from these statistics that the lowest mortality from renal affections occurred in the northern part of the Mississippi valley, while the highest was in the four Western States, namely Washington, Oregon, California and New Mexico. The next highest mortality was in the Middle Atlantic States and New York.

DR. NEWTON: I would venture to suggest that life insurance statistics in northern Texas are apt to be misleading, as it is rare out there to find a man who has his life insured. The majority of these are invalids from other localities and their death-rate would be naturally high.

Dr. Charles F. McGahan, of Aiken, read a paper on

THE NEED OF MUNICIPAL CONTROL OF THE FUMIGATION OF APARTMENTS OCCUPIED BY TUBERCULOUS PATIENTS AT HEALTH RESORTS.

He said: I have seen apartments in which have been the worst cases of phthisis disinfected in the most superficial manner, and a few days later have been called to the same rooms to see a case showing only the first symptoms of phthisis. Many take apartments without consulting a physician for weeks or months. Landlords are ignorant as a rule of methods of disinfection, and simply make a farce of it. Every room offered for rent at a resort frequented by tuberculous patients should have a certificate attached to it stating it to have been thoroughly disinfected under the auspices of the board of health or sanitary inspector, and that it is, in the opinion of the board, perfectly healthful. Dr. McGahan advocated laws against the spitting nuisance.

Dr. E. O. Otis, of Boston, stated that in Boston the Board of Health is willing to disinfect any apartments which have been occupied by a consumptive, but this is not compulsory. Dr. Otis detailed the system adopted in Cannes, France. There the proprietor of a hotel or villa is notified by the attending physician that a room or apartment which has been occupied by a tuberculous patient, or in which one has died, must be disinfected or renovated before it can be again occupied. The proprietor takes this notification to the sanitary authorities; the disinfection is made by them, and they return the original card of notification to the physician, with a note on it that this has been done. In the mayor's office is a list of hotels and villas whose proprietors agree to conform to these suggestions. Physicians make use of this list and it is mutually advantageous.

Dr. Guy Hinsdale: I appreciate very highly the importance of the suggestions contained in Dr. McGahan's paper, and I believe they would do much good if they could be brought to the attention of hotel-keepers in a manner that would appeal to the success of their establishments. The Pennsylvania Society for the Prevention of Tuberculosis has issued a tract on this subject which has been widely circulated, over 10,000 copies having been sent out. It is entitled, "How Hotel-keepers Can Assist in Preventing the Spread of Tuberculosis." We ought to decide upon a practical and efficient method of disinfecting an apartment which has been occupied by a tuberculous subject. Probably the best way is by the action of sunlight. In addition to this, or instead of it, some advise scrubbing with a strong corrosive-sublimate solution or the use of formaldehyde. A paper properly drawn up by this Association and widely circulated would do good.

Dr. McGahan: This subject is now being agitated in my home at Aiken, where some members of the Board of Health are in favor of adopting a system of fumigation, while others are not. Unless the fumigation is thorough it is practically useless. The apartments at the various hotels are successively occupied by different classes of patients, some of whom are careful about expectoration, while others are not. I do not think that we can rely upon the proprietors themselves to attend to the proper disinfection of their apartments. A regular system should be organized and carried out, and it seems to me that the health authorities are the proper persons to take hold of it.

(To be continued.)

Recent Literature.

Degeneracy: Its Causes, Signs and Results. By Eugene S. Talbot, M.D., D.D.S., etc. Pp. xvi, 372. With 120 illustrations. London: Walter Scott. 1898.

Of late years "degeneracy" has become a favorite phrase, and newspaper science and Nordau's sky-rocket book have done much to make it the fashion. It is a question, however, whether the foundations of this new "science" are quite so firmly established as some writers claim and whether, after all, it is not somewhat akin to the pseudo-sciences of physiognomy and phrenology. That there is a portion of truth in all the talk about "stigmata of degeneracy" is certain, but the importance of these stigmata is too often overrated, and many writers group among the stigmata every deviation from the normal, both physical and mental, whether congenital or acquired, so that everything, even symptoms of local disease of external and accidental origin, is regarded as significant of the degeneracy of the individual. That there is a class in every community which may fairly be regarded as degenerate is certain, and it is also true that in this class we find a much larger percentage of deviations from the normal type in their physical make-up than we do in presumably healthy individuals. It is, however, going too far to consider these deviations, which may occur with less frequency in the healthy, as proof or even as important indications of degeneracy in the individual. It is, furthermore, hardly fair to class the weaklings in the community who become defective on account of some acquired defect in early life with those who are defective from birth from hereditary causes, and to draw conclusions from the two classes combined. This, however, is the tendency of many of the writers on degeneracy, and the volume before us is not free from that error. It is, however, an interesting popular presentation of the subject of degeneracy. Much of it is, of course, a compilation, showing a diligent but not always discriminating study of many contributions to the subject. In the study of anomalies of the face and jaws, however, the author gives many interesting results of his own long and careful observation. The book is an interesting and valuable review of the subject, exaggerating, as is not unnatural, its importance.

Clinical Lectures on Neurasthenia. By Thomas D. Savill, M.D. Pp. xv, 144. London: Henry G. Glaisher. 1899.

These lectures were delivered at the Welbeck Street Hospital for Diseases of the Nervous System as a part of the post-graduate course in 1897–1898. The author claims that the subject "is either not referred to at all or is very inadequately dealt with in the text-books in current use." If that were the case they might be of some assistance to the practitioner and student, but in point of fact they are so far behind our present knowledge of neurasthenia, both as to symptomatology, pathology, prognosis and treatment, that we can see no reason for their publication.

A Treatise on Aphasia and other Speech Defects. By H. CHARLTON BASTIAN, M.A., M.D. (Lond.), F.R.S. Pp. viii, 366. With 31 illustrations. New York: D. Appleton & Co. 1898.

This volume, which includes the Lumleian Lectures delivered in 1897, is an exceedingly valuable contribution to this complicated and much discussed subject. The author's own researches in the subject are well known, and in the present volume these are supplemented by the reports of many other cases, making a total of one hundred and fourteen, and by a thorough review of the literature of the subject. The author's own views upon the vexed questions of the functions of speech are well known,— that the so-called motor centre is really a kinesthetic centre, that there is a writing centre distinct from the speech centre and that the proof of Broadbent's ideational centre is still lacking. These views are maintained with great skill and a strong array of evidence. Since the publication of the book the author's position in favor of a separate graphic centre, as opposed to the views of Dejerine, Miraillié, Collins and others, has received striking confirmation by the remarkable case of Gordinier. While somewhat less elementary and systematic than the work of Wyllie, and therefore less adapted for the beginner, the wealth of illustrative material and the philosophic judgment displayed will render it for a long time one of the standard treatises on the subject.

On the Relation of the Nervous System to Disease and Disorder in the Viscera. By ALEXANDER MORISON, M.D., F.R.C.P., etc. Pp. xiv, 132. With 39 illustrations. Edinburgh and London: Young J. Pentland. 1899.

This is a reprint of the Morison Lectures delivered before the Royal College of Physicians in Edinburgh in 1897 and 1898 by the grandson of the founder of the lectureship and published just a century after that founder graduated from the University of Edinburgh. The subject, although somewhat different from the usual theme of those lectures — the study of mental diseases — is one too much neglected and still obscure. The lecturer has summarized our present knowledge of the histology of the nerve supply of the viscera, with its physiology and pathology, and has added the results of his own study of the nerves of the uterus, the heart and the cerebral blood-vessels. The relations of the nervous system to disease in the viscera are still vague, but their importance is unquestioned, and these lectures afford many valuable hints in showing the need of further study and the limitations of our present knowledge.

IT is stated that the increase in the number of women students at German universities during the last few years has been remarkable. In 1896 there were only 177 at the ten leading universities, but at the beginning of the present year the number had risen to 414. Most of the women take courses in philology or philosophy. Only 16 have studied medicine, six theology, and six law in the last four years. — *Journal of the American Medical Association.*

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EMERGENCY STATIONS.

WITH the recent closing of the Emergency Hospital for lack of funds, the important question is at once forced upon the City Government and the medical profession as to whether emergency stations shall be established under a different organization.

There are several points to be considered: First, are such hospitals needed in a large city? Secondly, if needed, how may they best be supplied? Thirdly, what are their limitations?

In answer to the first question we may unhesitatingly say that emergency stations are needed. As a city grows, the opportunities for accident are evidently proportionately increased. The distance to hospitals already established is often too great, even with the best possible ambulance service, to justify removal of a patient without some preliminary aid in the way, for example, of checking hemorrhage, or stimulation. It is possible in cases of hemorrhage and severe shock for a patient to reach a hospital in a moribund condition, who, at least, would have had a better chance for life had there been the possibility of intelligent treatment near at hand. It is just that small remaining amount of strength that needs to be utilized at such critical times and not exhausted by a more or less rough ambulance ride of perhaps several miles. Unquestionably, then, any well-regulated city needs emergency stations in number proportionate to its size, in order that no accident within the confines of the city may happen far from adequate surgical or medical aid. This much a city owes to its employees and citizens.

Granted, then, that such stations are needed, how may they best be supplied? In our opinion, they should be provided by a city as an integral part of its hospital organization. Boston, for example, boasts one of the most completely equipped and well-managed city hospitals in the country. Why should it not still further increase its range of usefulness by providing an adequate emergency service for that portion of the city where, in the judgment of those competent to decide, such service is needed? It must, of course, always be borne in mind, that the hospitals already established provide an emergency service for large areas of the city in which they are located. An extension of this service, is, however, desirable, in the business portion, situated at a distance from the large hospitals and in a district where accidents are likely to occur. It appears that this has been the earnest wish of the Board of Trustees for many years. They have repeatedly petitioned those in authority for appropriations looking to a down-town relief station, to be under the direct control of the City Hospital. This has been persistently refused, and the city now finds itself, with the closing of the Emergency Hospital, which was a private institution, without facilities of any sort for the treatment of emergencies near the region at which accidents are likely to occur. This station must ultimately be supplied by city funds, if it is to be permanent — that seems self-evident. The advantages of having the whole system under one jurisdiction has recently been pointed out by Mr. Shuman, of the City Hospital Trustees, when he says that such a station should be under the management of the hospital department, in order that accident cases may have continued treatment under one method instead of being taken to one hospital for first treatment, and subsequently taken to another for continued treatment, thus subjecting patients to undue examinations, operations and dressings, and dividing the responsibility, and also lessening the chances of a perfect recovery.

In the third place, if such a station be established its limitations should be clearly recognized, and the idea of "emergency" and "accident" never for a moment lost sight of. This was embodied in a communication of a committee of the Visiting Medical Staff of the City Hospital in 1895. In this communication they said that they did not believe that such a station should be a hospital in the ordinary sense, but rather a station where a person suffering from accident, sudden sickness or other emergencies could receive immediate attention, and thence be transferred to the Boston City Hospital or other hospitals for further treatment, or to their homes. They said that they believed that such a station properly organized should have all the means and appliances for meeting readily any emergencies, large or small, that were liable to arise in the city of Boston, with the further implication that no other cases were to be treated. If such a limitation were adhered to it is evident that the number of beds could be reduced to a minimum, with an accompanying reduction of expense, and a most efficient service provided.

It is to be hoped that the efforts of the Trustees of the City Hospital may be at an early date successful, and that more definite action may soon be forthcoming leading to the establishment and maintenance of this much-needed adjunct of a well-organized medical charity.

THE YELLOW-FEVER QUESTION.

Controversy is, no doubt, one of the best aids to truth. The critical spirit which is born of disagreement tends to discover flaws in method or argument which a mere superficial acceptance of facts could evidently never accomplish. An instance of this effectual, if unpleasant, method of arriving at facts we have been observing for some time in the active discussion which has been going on between Professor Sanarelli, of Bologna, Italy, and Surgeon-General Sternberg and others, regarding the etiology of yellow fever. The details of the discussion are interesting, owing to their technical character, only to special students of bacteriological matters; the general results are, however, of the greatest significance and importance to us all.

Two papers have appeared in recent numbers of the *Medical News*, the first by Sanarelli, restating his position and conviction that his *bacillus icteroides* is the specific cause of yellow fever, and attacking with considerable energy Novy's recent work and also Sternberg's. The paper is controversial, and vigorously written, and whatever the ultimate merits of the question may be, states certain wholesome facts in perfectly definite fashion, ultimately replying to the critics in the following words:

"I (Sanarelli) am inclined to doubt if those who find it so easy to criticise are in a position to treat the bacteriological and pathogenetic questions of the infectious diseases with as much experience and authority, for these can only be acquired after many years of practical study at the bedside of the sick, in the autopsy-room and in the laboratory of comparative experimental pathology."

To this paper Sternberg replies in the succeeding number of the *Medical News*, defining his attitude toward the subject, and quoting from his recent publications. The paper is defensive throughout and closes with certain statements, some of which are as follows:

That some bacteriologists who claim to have found Sanarelli's bacillus have mistaken it for one of the varieties of the colon bacillus; that experiments made with Sanarelli's serum in high dilution give the Widal reaction with the bacillus of hog cholera; also, that serum from an animal immunized against hog cholera, in high dilutions, causes arrest of motion and typical agglomeration of Sanarelli's bacillus; also, that cultures of Sanarelli's bacillus fed to pigs cause the death of these animals, and that the typical lesions of hog cholera are found in their intestine; that blood serum of yellow-fever patients or of convalescents from this disease does not give a marked Widal reaction with Sanarelli's bacillus, although the blood of an animal immunized by the injection of cultures of this bacillus does give the specific reaction in high dilutions; that so far as I (Sternberg) am informed, the results obtained in the use of Sanarelli's antitoxic serum do not give support to his claim to have discovered the specific germ of yellow fever.

Finally, Sternberg writes:

"I would say it appears to me at the present time that, like the colon bacillus and bacillus *x*, the bacillus of Sanarelli is a pathogenic saprophyte which is present occasionally and accidentally in the blood and tissues of yellow-fever patients, and that its etiological relation to this disease has not been established."

In view of this very recent discussion and the forcible restatements of the two positions, it is of interest that the commission appointed by the Government to investigate Sanarelli's claims has handed in a report substantiating his conviction that the *bacillus icteroides* is the true cause of yellow fever. This commission, consisting of Surgeons Eugene Wasdin and H. D. Giddings, was appointed in November, 1897, and has since been prosecuting its investigation in the laboratory of the Marine-Hospital Service in Havana. The final report has just been published in the U. S. Public Health Reports, Vol. XIV, No. 33. The subjects of study were twenty-two cases of disease thought to be yellow fever by the native physicians in attendance, and in fourteen of which the commission concurred in the diagnosis. The conclusions derived from the investigation are:

"(1) That the micro-organism discovered by Prof. Giuseppe Sanarelli, of the University of Bologna, Italy, and by him named "bacillus icteroides," is the cause of yellow fever.

"(2) That yellow fever is naturally infectious to certain animals, the degree varying with the species; that in some rodents local infection is very quickly followed by blood infection; and that, while in dogs and rabbits there is no evidence of its subsequent invasion of the blood, monkeys react to the infection the same as man.

"(3) That infection takes place by way of the respiratory tract, the primary colonization in this tract giving rise to the earlier manifestations of the disease.

"(4) That in many cases of the disease, probably a majority, the primary infection or colonization in the lungs is followed by a "secondary infection" or a secondary colonization of this organism in the blood of the patient. This secondary infection may be complicated by the coinstantaneous passage of other organisms into the blood, or this complication may arise during the last hours of life.

"(5) That there is no evidence to support the theory advanced by Professor Sanarelli that this disease is primarily a septicemia, inasmuch as cases do occur in which the bacillus icteroides cannot be found in the blood or organs in which it might be deposited therefrom.

"(6) That there exists no causal relationship between the bacillus *x* of Sternberg and this highly infectious disease, and that the bacillus *x* is frequently found in the intestinal content of normal animals and of man, as well as in the urine and the bronchial secretion.

"(7) That, so far as your commission is aware, the bacillus icteroides has never been found in any body other than one infected with yellow fever, and that whatever may be the cultural similarities between this and other micro-organisms, it is characterized by a specificity which is distinctive.

"(8) That the bacillus icteroides is very susceptible to the influences injurious to bacterial life; and that its ready control by the processes of disinfection, chemical and mechanical, is assured.

"(9) That the bacillus icteroides produces *in vitro*, as well as *in vita*, a toxin of the most marked potency; and that, from our present knowledge, there exists a reasonable possibility of the ultimate production of an antiserum more potent than that of Professor Sanarelli."

It is a matter of regret that more cases were not available for this study. While careful work in a few cases is infinitely more profitable than uncritical work on many, nevertheless, the importance of the question demands painstaking work on many cases by many competent observers, an outcome which we have no doubt will soon be forthcoming.

MEDICAL NOTES.

Marriage of the Subjects of Venereal Disease Forbidden. — A law recently passed by the Michigan Legislature, according to the *Medical Record*, forbids the marriage of any person suffering from gonorrhea or syphilis, and provides that any one so diseased who may marry shall be guilty of a felony punishable by a fine of not less than $500 or more than $1,000, or imprisonment in the penitentiary for a term not exceeding five years, or by both fine and imprisonment. A wife or husband may testify against her or his guilty spouse, and the privilege of medical secrecy is also abrogated in such cases.

The Cause of Night Terrors. — In a recent paper in the *British Medical Journal* Dr. E. Graham Little sums up the results of his observations as follows: Night terrors are in the great majority of cases caused by disorders productive of moderate but prolonged dyspnea. A preponderating number of cases are found in rheumatic subjects with early heart disease. A considerable proportion of cases are due to obstruction of nasal cavities and fauces. Digestive disturbances do not play the important part in causation that is often assigned to them. The evidence for their causal connection with epilepsy or allied neuroses is scanty. The attacks occur in the subconscious stage of early sleep, and are confined to young children under puberty.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, August 30, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease:

diphtheria 40, scarlet fever 22, measles 5, typhoid fever 40, small pox 2.

NEW BUILDINGS FOR THE MASSACHUSETTS GENERAL HOSPITAL. — Work has been begun on a new operating building for the Massachusetts General Hospital, which is to contain an amphitheatre, smaller operating- and dressing-rooms, etc., and is to be constructed in every detail for facilitating aseptic work The operating theatre will seat one hundred and seventy-one persons. The building will be constructed of Chelmsford granite and brick. Two other buildings which are to be added to the hospital equipment consist of a domestic building, and an addition to the present nurses' dormitory.

NEW CASES OF SMALL-POX. — It is reported that two new cases of small-pox have been discovered in the Roxbury District. Neither case is of a severe type; one, a man, is practically well, and the other, a child, has been sent to Gallop's Island, The source of contagion is obscure.

DEATHS OF CENTENARIANS. — Mrs. Mary Russell Bradford, believed to be the oldest person in New England, died at her home in Cambridge, August 27th, at the age of one hundred and six years, two months, eighteen days. She was born in Boston June 9, 1793, the daughter of Isaac and Mary Russell Winslow. She early married Charles Bradford, and up to about twenty years ago she lived in Boston. A year ago she was in excellent health, but failed rapidly during the last winter and spring. Mrs. Lucy Williams, who was believed to be the oldest woman in Connecticut, died at Uncasville last week, aged one hundred and three years.

A CORRECTION. — The *Philadelphia Medical Journal*, in a New England note of the current issue, makes the following erroneous statement regarding the West End Nursery. "An interesting summer feature of the West End Nursery work is the branch service at Rainsford Island in Boston Harbor, with which is connected a training school for nursery maids. The form of prophylactic work promoted by this school appeals at once to anxious mothers, and the graduates are in great demand." The summer hospital at Rainsford Island has been discontinued.

NEW YORK.

THE NEW BUILDING OF THE WOMAN'S HOSPITAL. — Plans have now been completed for the new building of the Woman's Hospital of the State of New York, which the managers at first thought of erecting on a site further up-town, but afterwards decided to place on the present grounds of the institution, occupying the block between Park and Lexington Avenues and 49th and 50th Streets. The proposed new building will cost $400,000, of which amount considerably more than $300,000 has already been raised. Russell Sage, who is one of the Board of Governors of the Hospital, led off with a subscription of $50,000, and a like sum was also contributed by Mrs. Frederick Thompson, the treasurer.

THE NEW YORK WATER SUPPLY. — Controller Coler has won the approval of the best citizens by his efforts to defeat what is known as the Ramapo Water Company job. If it should be deemed advisable to supplement the water supply now furnished by the Croton water-shed by the supply contemplated by the Ramapo Company, which includes an area of water-shed in Ulster and Greene, as well as Rockland and Orange Counties, on the west bank of the Hudson, he is of the opinion that the city itself should acquire the land required, rather than contract with any private company for the water. Under the circumstances, therefore, he has requested a corps of the city's engineers to make an investigation of the capabilities of the region referred to, and at the next session of the Legislature he proposes to secure for the city of New York, if possible, the right to go into any part of the State and acquire land that is decreed necessary for water-shed purposes. With this right of eminent domain secured, Mr. Coler states that, by extending the present Croton water-shed system to Ten Mile River, the supply can be greatly increased, and 100,000,000 gallons a day be obtained, at an expenditure of about $10,000,000. In the meanwhile, if the waste now taking place, not only through negligence on the part of the people, but from leakage from defective water-mains, could be checked or even reduced, the supply now at command would be ample for all the needs of the city for a considerable number of years to come.

PRECAUTIONS AGAINST PLAGUE. — In a response to a communication addressed to them by Health Officer Doty, the two companies owning lines of steamers plying between Portugal and New York have promised not to bring over any passengers as long as bubonic plague exists in Portugal. Dr. Doty has announced that all vessels arriving from localities known to be infected will be treated as infected vessels, and he expresses his ability to successfully handle the disease should any cases of it be brought to the port of New York. The experiments carried on some time ago at the quarantine station laboratory on Swinburne Island, with cultures of plague germs obtained from Bombay and published in 1897, showed that the organism could be effectually destroyed by means of steam and formaldehyde. The disinfection by steam was performed in a steam chest, especially prepared, in which a vacuum was produced. Superheated steam was introduced within this chamber, which contained the infected material, inclosed in various wrappers, such as newspapers, rugs, blankets and sheets. The temperature of 170 degrees Fahrenheit was found sufficient to kill the germ if it was enclosed in a sheet of paper and envelope, while 250 degrees of heat, with an exposure of fifteen minutes, was certain destruction to germs wrapped in blankets or newspapers. The experiments with formaldehyde were most exhaustive, and various methods of employing this agent were tried, until the most efficient was secured. Since the successful termination of these tests, Dr. Doty states, the methods thus arrived at have been employed at quarantine upon all vessels coming from forts in the far East where bubonic plague has been reported or its presence suspected.

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Miscellany.

THE TONIC PROPERTIES OF SEA AIR.

Considerable speculation has from time to time been made as to what causes the invigorating and tonic properties of a sea-breeze. Ozone is very commonly accepted as at any rate an important factor in this connection, since it is invariably present in air that has been in contact with sea-water, and especially agitated sea-water, and to a smaller extent in the air of the country, but it rarely occurs in the air of towns and crowded places. Ozone, however — and with it probably traces of hydrogen peroxide — is undoubtely formed by air skimming over the surface of fresh water, and hence the breezes coming over the lochs in Scotland and large lakes and rivers in other places become ozonized and bracing. The Briton has an instinctive fondness for procuring his change or spending his holiday down by the water side, be it sea, lake, or river, probably because he finds, though he does not know exactly why, that the air of waterside places does him more good than the air of the country, where there are trees and beauties of landscape but no large tract of water. The freshness of the early morning air is due most probably to the formation of dew on the previous night, the transition from the vaporous to the liquid state causing ozonization of the air with which the condensed watery particles come into intimate contact. This freshness disappears as the day wears on because of the readiness with which ozone is destroyed by organized and organic substances. The exhilarating effect of a sea-breeze may, however, be ascribed to other bodies which are foreign to inland air. Thus sea air contains a traceable amount of salt and iodides, attaining a maximum of 0.022 gramme per litre or about one and a half grains per gallon. These mineral ingredients derived from the sea doubtless accentuate the tonic action of sea air, and, further, it is probable that ozone interacting with chlorides and iodides would lead to traces of chlorine and iodine being present. Many persons describe the smell of strong sea air as iodous or chlorous, and it has even been said that the starch used in face-powders turns blue at the seaside on account of the iodine in the air forming blue iodide of starch. If that be so, the blue and haggard appearance characteristic of many faces exposed to a strongly salt-impregnated breeze would find an interesting, but perhaps embarrassing, explanation. — *Lancet.*

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STREET NOISES.

The *Medical Press and Circular* takes the following hopeful view of the noise question as regards London. We have not yet reached the point of improvement in America, but we may certainly hope for better things if London's Society has succeeded so well in its endeavors:

"The life of the average citizen is becoming more tolerable, so far as street noises are concerned, a happy state of things which is due not to the fact that he has become accustomed to such nuisances, but because the streets are quieter than they used to be. In a certain measure a good influence has been exerted in this direction by the London Society for the Suppression of Street Noises. Although only in the second year of its existence, the Society, as its report for the past year shows, has been steadily pressing forward an admirable campaign against the soul-disturbing costermongers and newsboys, who make the thoroughfares hideous with their yells and howls. Moreover, it is satisfactory to note that the Society has a well-designed programme in the pursuit of which its members intend to expend their best energies. For example, among their objects of reform are included the compulsory fixing of India-rubber tires on all vehicles, floors of the same material for milk-carts, the establishment of kiosks in place of the screeching newspaper boys. But even if all these reforms were successfully attained, many more noises would still be left to be dealt with. The bawling coal hawker, for instance, is an intolerable nuisance, and the irritating, expressionless, metallic clang of the barrel-organ should be banished altogether from the streets. Possibly, however, when the London Government Act comes into force, marked improvement will be noticed in regard to the prevalence of street noises, inasmuch as the new municipalities have been empowered to make by-laws for regulating and suppressing such nuisances, and there is every reason for supposing that full advantage will be taken of the clauses in the Act relating thereto."

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JAPANESE WRESTLERS.

Although the American is willing to concede to the Japanese the possession of a mental capacity almost if not quite equalling that of the majority of white races, he is apt to form a somewhat slighting opinion of him as viewed from a physical standpoint. The specimens met with in this country do not tend to convey a favorable impression of their athletic powers. After, however, reading an account of the physical measurements of some of the most prominent Japanese wrestlers, a more respectful attitude regarding the muscular development of these little men will probably be taken. The *Jiji Shimpo* has recently published a table giving the measurements of six of the foremost Japanese fighters. From this table it is gathered that the most bulky of these modern gladiators weighs at the age of twenty-two years about three hundred pounds; height, five and a half feet; girth of chest, fifty-eight inches; lung capacity, four thousand four hundred and fifty cubic centimetres; upper arm, eighteen inches. Another one weighs over two hundred and eighty pounds; height, six feet five inches; girth of chest, forty-eight inches; lung capacity, six thousand cubic centimetres; upper arm, sixteen inches. The smallest of these fighting men weighs more than two hundred pounds, measures in height five feet seven inches, while in lung capacity he exceeds them all. There are few wrestlers or pugilists in this or any country who attain to these dimensions, and those who have seen some of the best exponents of Japanese wrestling are willing to back them when pitted against the pick of the European or American experts, as it is said that they are as skilful as they are powerful. — *Medical Record.*

Correspondence.

EXCESSIVE CRYING OF INFANTS.

Boston, August 28, 1898.

Mr. Editor: There is no doubt that for a child under three months of age to be allowed to cry continuously for a considerable period of time is very injurious and even dangerous. Umbilical and femoral hernias are often produced in this way, as has been frequently proved. An instance comes to my mind of a child, now eight years of age, who during the first month of her life was subjected to this "system" of baby training, with the result that she has had ever since a discharge from the navel which the best surgeons in Boston have failed to cure.

The brain, too, must suffer from the continued hyperemia to which it is subjected. Digestion is impaired. The effect upon the lungs of forcible inspiration and expiration is to throw an unusual and unnecessary strain upon the delicate cell tissues that may well cause emphysema and lay the foundation of serious lung troubles. The blood cannot be well aërated and consequently becomes impure.

The heart, too, just commencing its life-long task of pumping blood into the circulatory system is seriously handicapped by the excessive strain upon it. Eczema and other skin diseases are caused by the united action of impure blood — the product of imperfect digestion and imperfect aëration — and the irritating perspiration caused by the long-continued exertion of crying.

These and many other evils are caused by excessive crying. Yet, there is an impression abroad that crying does not hurt a child, and that it is good practice to leave the child alone to "cry it out." In hospitals, where a certain routine must be enforced, some crying is inevitable and unavoidable, but in private nursing this routine is neither necessary nor desirable. A baby should be fed at regular intervals, and between the feedings it should receive such care as to make it comfortable and happy. It should be an axiom with every nurse that a baby cannot be treated too tenderly. It has come to my attention frequently that the converse of this treatment is being followed by many nurses, and, more strange still, is being encouraged by some physicians. The grounds upon which this cruel method is justified I understand to be as follow:

First, the child, from its birth, must be trained to regular habits. It must be fed, washed and dressed by rule; in the intervals let severely alone. If it cries take no notice of it.

Second, it doesn't hurt the child to cry.

Third, the mother will have more time for social pleasures if the child is trained so that it never expects to be hushed to sleep in her arms or to feel her comforting touch in its baby troubles.

All the above reasons, and they are the most reasonable reasons I have heard, have their origin in selfishness. None of them are given from the standpoint of the baby. The new-born infant rightly claims loving care, not neglect. It craves warmth and the protection of loving arms. It cannot change its position, but it appreciates the changes that a sympathetic nurse, who *feels* the baby needs, contrives to give it. No one but a sensitive, sympathetic nurse should ever attend upon an infant. Do not misunderstand me. I am not in favor of too much handling of an infant, and I would encourage regularity in diet and habits, but the attitude of the nurse towards the child should be one of fostering care and not that of machine-like adherence to rigid rules. I have known nurses to allow a child to cry until exhausted without making any effort to soothe it. To the physician belongs the responsibility of the health of the child. To the physician the nurse must look for orders. He is her superior officer, and must always be obeyed.

The undersigned would like to hear from physicians in regard to this matter. Do they approve or disapprove of this practice?

Susan E. Crocker, M.D.

METEOROLOGICAL RECORD

For the week ending August 19th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...13	29.83	78	87	69	82	73	78	S.W.	S.W.	11	7	O.	C.	
M..14	30.06	68	77	59	61	45	53	N.	N.	10	6	C.	C.	
T...15	30.20	62	70	55	60	64	62	N.E.	S.	10	9	F.	C.	
W..16	30.12	69	81	57	61	42	52	N.W.	S.W.	5	12	O.	C.	
T...17	30.10	70	82	58	53	56	54	N.W.	S.	6	11	O.	C.	
F...18	30.06	74	86	62	66	84	75	W.	S.	4	10	O.	C.	
S...19	29.90	81	90	72	85	82	84	W.	S.W.	9	8	F.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, August 19, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1142	448	16.23	11.04	9.81	1.36	2.40
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	381	143	16.12	14.04	9.88	1.82	1.56
St. Louis . . .	623,000	—	—	—	—	—	—	—
Boston . .	528,463	219	97	22.05	6.65	14.85	1.8[illegible]	2.70
Baltimore . .	506,389	174	68	30.21	5.13	22.23	1.71	2.85
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	109	45	40.95	8.19	27.30	7.28	—
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	65	27	38.50	6.16	23.10	1.54	—
Nashville . .	87,754	45	8	37.28	4.66	34.95	2.22	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	108,240	43	17	—	—	—	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	31	15	22.61	6.46	16.15	—	3.23
Lowell . . .	88,641	42	18	26.18	7.14	21.42	2.38	—
Lynn	66,703	25	7	32.00	8.00	28.00	—	—
New Bedford .	66,340	28	14	46.41	—	38.27	3.57	3.57
Somerville . .	66,101	24	7	25.00	29.12	20.90	—	—
Lawrence . .	57,263	29	17	34.50	14.76	31.05	—	—
Springfield . .	56,501	16	4	25.00	6.25	18.75	—	—
Holyoke . . .	43,424	13	7	30.76	38.45	7.69	—	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem	36,883	20	12	35.00	5.00	18.00	5.00	—
Malden . . .	34,613	11	4	27.27	18.18	27.27	—	—
Chelsea . . .	33,468	14	7	—	—	—	—	—
Haverhill . .	32,022	—	—	—	—	—	—	—
Gloucester . .	30,589	11	7	9.09	—	—	9.09	—
Newton . . .	29,716	4	3	75.00	—	75.00	—	—
Fitchburg . .	29,438	11	5	27.27	27.27	27.27	—	—
Taunton . . .	28,167	—	—	—	—	—	—	—
Everett . . .	25,338	10	8	60.00	—	50.00	—	—
Quincy . . .	23,549	7	4	42.84	14.28	42.84	—	—
Pittsfield . .	22,643	15	—	52.00	—	52.00	—	—
Waltham . .	22,296	5	1	20.00	—	20.00	—	—
North Adams .	20,971	8	4	37.50	—	37.50	—	—
Chicopee . .	17,842	6	5	33.33	—	33.33	—	—
Medford . . .	16,511	3	3	66.66	—	66.66	—	—
Newburyport .	14,915	6	2	33.33	16.66	33.33	—	—
Melrose . . .	14,032	2	1	—	—	—	—	—

Deaths reported 2,531; under five years of age 1,012; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 587, consumption 263, acute lung diseases 130, diarrheal diseases 394, typhoid fever 55, diphtheria and croup 50, whooping-cough 45, cerebro-spinal meningitis 15, scarlet fever 9, measles 9.

From whooping-cough New York 16, Philadelphia 8, Boston 5, Pittsburg and Providence 4 each, Cambridge, Lawrence and Everett 1 each. From cerebro-spinal meningitis New York 6, Baltimore 3, Philadelphia, Lynn and Somerville 1 each. From scarlet fever Pittsburg 3, New York 2, Philadelphia, Baltimore, Worcester and Somerville 1 each. From measles New York 7, Philadelphia and Providence 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending August 12th, the death-rate was 24.3. Deaths reported 5,320; acute diseases of the respiratory organs (London) 163, diarrhea 1,295, measles 127, diphtheria 71, whooping-cough 58, fever 24, scarlet fever 22, small-pox (Hull) 1.

The death-rates ranged from 13.6 in Huddersfield to 36.3 in Plymouth; Birmingham 27.0, Bradford 20.1, Cardiff 19.4, Gateshead 21.0, Hull 21.4, Leeds 21.3, Liverpool 33.6, London 23.7, Manchester 32.3, Nottingham 28.1, Sheffield 30.3, Sunderland 17.5, Swansea 17.6, West Ham 28.7.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 26, 1899.

C. H. Gravatt, medical inspector, ordered to duty at the New York Navy Yard, as member of board of medical examiners, September 5th.

C. F. Stokes, passed assistant surgeon, detached from duty as member and recorder of board of medical examiners at the New York Navy Yard, September 5th, and ordered to continue on duty at the Naval Hospital, New York.

M. S. Guest, passed assistant surgeon, ordered to the Boston Navy Yard.

S. Englander, pharmacist, detached from the Mare Island Navy Yard and ordered to the New York Navy Yard.

L. R. G. Lewis, pharmacist, detached from the New York Navy Yard and ordered home and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING AUGUST 17, 1899.

Irwin, Fairfax, surgeon. To proceed to Marseilles, France, and Lisbon and Oporto, Portugal, for special temporary duty. August 16, 1899.

Wasdin, Eugene, surgeon. To report at Washington, D. C., for special temporary duty. August 14, 1899.

Geddings, H. D., passed assistant surgeon. To proceed to New York, N. Y., for special temporary duty. August 16, 1899.

Smith, A. C., passed assistant surgeon. To proceed to Hampton, Va., and report to Surgeon J. H. White for special temporary duty. August 17, 1899.

Stimpson, W. G., passed assistant surgeon. To report at Washington, D. C., for special temporary duty. August 17, 1899.

Richardson, T. F., assistant surgeon. Detailed as quarantine officer for the port of Neuvitas, Cuba. August 14, 1899.

Schug, F. J., acting assistant surgeon. Granted leave of absence for thirty days from August 15, 1899. August 17, 1899.

Woods, C. H., hospital steward. Granted leave of absence for fifteen days from August 16, 1899. August 15, 1899.

Richardson, S. W., hospital steward. To proceed to Birmingham, Ala., for special temporary duty. August 17, 1899.

Peck, F. H., hospital steward. To proceed to Hampton, Va., and report to Surgeon J. H. White for special temporary duty. August 14, 1899.

PROMOTION.

Thurston, E. J., hospital steward. To be hospital steward and chemist. August 17, 1899.

BOARD CONVENED.

Board convened to meet at the U. S. Marine Hospital, New York, N. Y., at 10 o'clock A. M., August 16, 1899, for the physical examination of a candidate for appointment in the Revenue Cutter Service. Detail for the Board: Surgeon George W. Stoner, Chairman; Assistant Surgeon W. C. Hobdy; Assistant Surgeon W. C. Billings, Recorder.

TREASURY DEPARTMENT, OFFICE SUPERVISING SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

Washington, D. C., August 25, 1899.

A board of officers will be convened at the Service Building, 378 Washington Street, New York City, Wednesday, October 4, 1899, for the purpose of examining candidates for admission to the grade of assistant surgeon in the U. S. Marine-Hospital Service.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college, and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examination: (1) physical, (2) written, (3) oral, (4) clinical.

In addition to the physical examination candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature and natural sciences.

The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on the cadaver.

Successful candidates will be numbered according to their attainments on examination and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large marine hospitals, as at Boston, New York, New Orleans, Chicago or San Francisco.

After five years' service, assistant surgeons are entitled to examinations for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination as vacancies occur in that grade. Assistant surgeons receive sixteen hundred dollars, passed assistant surgeons two thousand dollars and surgeons twenty-five hundred dollars a year. When quarters are not provided commutation at the rate of thirty, forty or fifty dollars a month, according to grade, is allowed.

All grades above that of assistant surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service up to forty per centum after twenty years' service.

The tenure of office is permanent. Officers travelling under orders are allowed actual expenses. For further information, or for invitation to appear before the Board of Examiners, address

Supervising Surgeon-General,
U. S. Marine-Hospital Service.

APPOINTMENTS.

The following appointments have been made at the Tufts College Medical School: Harold Williams, M.D., professor of the principles and practice of medicine; Henry B. Chandler, M.D., professor of ophthalmology; Horace D. Arnold, M.D., assistant professor of clinical medicine; Albert P. Mathews, S.B., Ph.D., assistant professor of physiology.

SOCIETY NOTICE.

Mississippi Valley Medical Association. — The twenty-fifth annual meeting of the Association will be held in Chicago, October 3-6, 1899. The officers of the Association are: President, Duncan Eve, Nashville; Secretary, Henry E. Tuley, Louisville.

RECENT DEATH.

Samuel B. Wylie McLeod, M.D., died at his residence in New York on August 23d, of cardiac disease. He was born in 1831 in New York City, where his father, the Rev. John Neil McLeod, was pastor of the Twelfth Street Presbyterian Reformed Church for forty-four years. He was graduated from the University of Pennsylvania in the class of 1849, and from the College of Physicians and Surgeons, New York, in 1852. He continued his studies for a time in Paris and then served for two years as surgeon in the United States Navy. He then settled in New York, where he secured a large practice and took a prominent part in all the affairs of the medical profession of the city. He was especially interested in society work and was successively vice-president and president of the Medico-legal Society, the New York State Medical Association and the New York County Medical Association. Of the two latter societies he was one of the founders and he was elected president of the County Association for five terms in succession. He was also one of the founders and temporary president of the Medical Association of the Greater City of New York. At the time of his death Dr. McLeod was consulting physician to the Marion Street Lying-in Hospital, and trustee and consulting physician of the Northern Dispensary. He is survived by a widow and two sons, Lincoln McLeod, who was a captain in the 71st Regiment, New York Volunteers, in the Spanish War, and Dr. Johnston McLeod, a practising physician in Aurora, N. Y.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Organic Materia Medica, being a Guide to Materia Medica of the Vegetable and Animal Kingdoms, for the use of Students, Druggists, Pharmacists and Physicians. By John M. Maisch, Ph.M., Phar.D., late Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. Seventh edition. Revised by Henry C. C. Maisch, Ph.G., Ph.D., Professor of Materia Medica and Botany in the Medico-Chirurgical College of Philadelphia, Department of Pharmacy. With 285 illustrations. Philadelphia and New York: Lea Brothers & Co. 1899.

Original Articles.

THE EFFECTS OF TRAINING.

A Study of the Harvard University Crews.

BY EUGENE A. DARLING, M.D., CAMBRIDGE.

(Concluded from No. 9, p. 209.)

Circulatory system. — Periodic examinations of the heart and pulse were made, special attention being given to the size of the heart, to the occurrence of abnormal sounds and to the rate and character of the pulse. Examinations were also made after several time-rows and both races.

Inspection of precordia, etc. — All of the men showed a prominence of the precordial region and a more diffuse pulsation than normal. The apex beat when visible was usually located in the fifth intercostal space, just inside the mammillary line. After the time-rows and races the apex beat was visibly displaced to the left, and in many instances a marked precordial and epigastric pulsation was noted. There was also in most cases visible pulsation in the peripheral arteries, most marked in the subclavians and carotids. The color was uniformly good, there being no instances of noticeable pallor or cyanosis, in spite of considerable disturbance of the heart's action in some cases.

Size of heart. — The routine examinations were all made in the middle of the afternoon, before rowing, so that the hearts might have recovered as far as possible from the rowing of the day before, and might be taken at their minimum size. Further examinations were made after the time-row of June 21st and after the races. The method pursued was as follows. The heart sounds were first examined and the apex beat located with the man standing. The man then lay flat and the apex beat was again located by sight and auscultation. Then, by combined auscultation and percussion, using the phonendoscope, the right, left and upper borders were found and outlined. The method is open to objection, as already stated, but seemed to be the most accurate under the circumstances, and by considering averages it was hoped that individual errors might, to a certain extent, be eliminated. The outlines were transferred to tracing cloth, the position of the nipples marked and the chart then made was kept for comparison. In measuring variations it was found that two fixed lines were necessary, one connecting the nipples — the intermammillary line — and the other bisecting the first at right angles — the median line of the chest. The ordinary terms employed clinically giving the position of the borders in relation to the sternum, ribs, or nipples are so variable in different individuals that no mean can be determined. The position of the apex beat was measured both from the median line and the intermammillary line; the right and left borders were measured from the median line, the former at the level of the nipples, the latter at the apex. The upper border was measured from a line drawn through the apex parallel to the intermammillary line. By averaging these various measurements it was easy to construct a chart representing the average heart of the squad and also to estimate the average variation.

The following Table (VI) and Chart (VI) give the measurements and variations of the average heart of the entire squad. They show that there was a progressive enlargement affecting both sides of the heart during May and reaching its maximum early in June. After this there was a considerable shrinkage, especially of the left side, both the left border and the apex beat receding towards the median line until their positions were not very different from those of early May. The right side of the heart also showed shrinkage but to a less degree than the left. The position of the upper border varied considerably in the different examinations, depending apparently partly on the fulness of the stomach and partly on the depth of respiration. The relative rise and fall of the apex beat could not be followed as closely as its lateral movement, owing to the ribs.

The period of greatest enlargement corresponded to the period of the most arduous work, late in May and early in June, when the final selection of men was being made, and when consequently every man was pulling his hardest. Probably the individual strain was greater at this time because the crew had not yet learned to pull as a unit. Then too, as already mentioned, the weather was very unfavorable, and the effort required to do the work was considerably greater than was needed later. The better weather conditions prevailing at New London, the more uniform rowing as the form of the crew was perfected and the more accurate adaptation of each man's rigging to his peculiarities, all tended to lessen the strain on the individual oarsman and by enabling him to do his work with less muscular effort proportionately diminished the labor demanded of the heart.

Table VI. Average Heart Measurements of Squad.

Dates of examinations.	Men examined.	Apex beat.		Right border, cm.	Left border, cm.	Total breadth, cm.	Upper border.	
		From median line, cm.	From intermam. line, cm.				At middle point, cm.	At quarter point, cm.
May 9-17 . . .	11	8.5	4.5	3.9	12 0	15.9	5.6	3.9
May 18-26 . . .	11	9.0	4.4	5.1	12.8	17.9	6.6	4.4
June 2-8 . . .	12	9.7	4.9	6.0	13.2	19.2	6.0	3.8
June 17	12	9.9	5.3	5 7	12.9	18.6	5.0	3.2
June 29 before race.	12	9.5	5.0	5.8	12.3	18.1	5.5	3.8

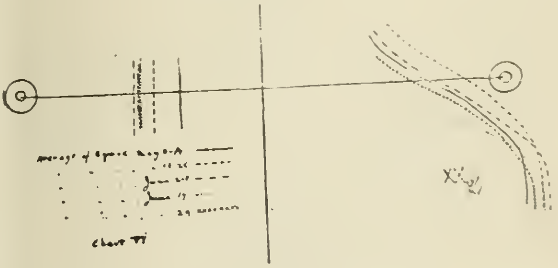

Chart VI.

How much of the enlargement was due to hypertrophy and how much to dilatation is difficult to say. Probably there were both hypertrophy and dilatation. The accompanying change in the heart sounds in certain cases to be described later would indicate that there was considerable dilatation at first, but that subsequently the hearts gradually recovered tone and a true compensatory hypertrophy took place.

During the races, both four-mile and two-mile, a considerable dilatation took place, as shown in Charts (VII) and (VIII). The average increase in breadth of the cardiac dulness was nearly the same in the two crews — 1.4 centimetres for the eight and 1.5 centimetres for the four. The marked rise of the upper border relative to the intermammillary line may be attributed to the fact that the examinations after the race were unavoidably delayed until after dinner, and consequently allowance must be made for the full stomach.

Heart sounds. — The twelve men in the squad may be divided into three groups according to the effect of the training and races on their heart sounds and action.

In Group I, numbering five men, may be placed those whose hearts developed no markedly abnormal condition. The pulse rate at rest varied from 60 to 80, and after the time-rows and races, rose to 120 or thereabouts. The sounds remained normal, except that the first sound became somewhat louder and rougher than normal. Both the first and second sounds were occasionally reduplicated.

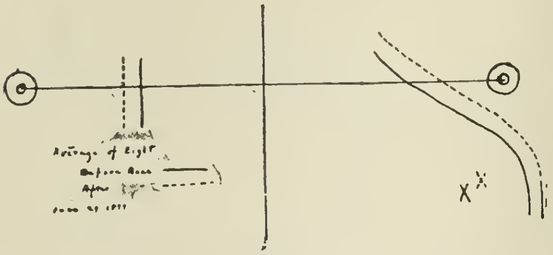

CHART VII.

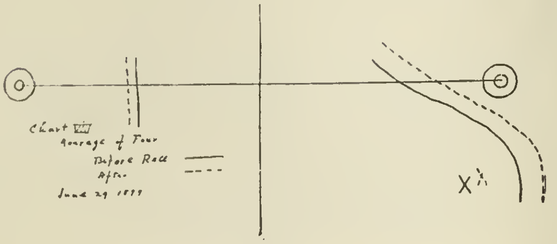

CHART VIII.

In Group II, including two men, the routine examination showed nothing abnormal, but after the time-rows and race both developed a faint blowing systolic murmur, loudest at the left margin of the sternum in the second and third intercostal spaces, but also audible at the apex. As in Group I, there was some tendency to reduplication of the sounds, but the rhythm remained normal.

In Group III may be placed the remaining five men, whose hearts showed abnormalities of sound or action at several different examinations, both before and after unusual effort. The most extreme case deserves a detailed description. This man had had rheumatism and typhoid and had been informed several years before that his heart was weak.

Following are the notes as taken:

May 10th. Pulse 96; irregular. Diffuse precordial and epigastric pulsation; pulmonic second sound accentuated; blowing systolic murmur audible over entire cardiac area, loudest in pulmonic area and at apex.

May 18th. Pulse 84; irregular; heart sounds as above but murmur inaudible at apex.

May 25th, after time-row of $3\frac{5}{8}$ miles. Pulse 138; very irregular; two sounds of equal intensity at apex; rhythm embryonic; murmurs very loud over entire precordia.

May 30th, before time-row. Pulse 84, somewhat irregular; murmur faint. After time-row of $3\frac{5}{8}$ miles. Pulse, 128; fairly regular; murmur much fainter than after previous time-row.

June 7th. Pulse 88; sounds as before time-row of May 30th.

June 17th. Pulse 78; regular; murmur very faint.

June 21st. Pulse 82; regular; no murmur. Two hours and a half after four-mile time-row. Pulse 98; regular; no murmur.

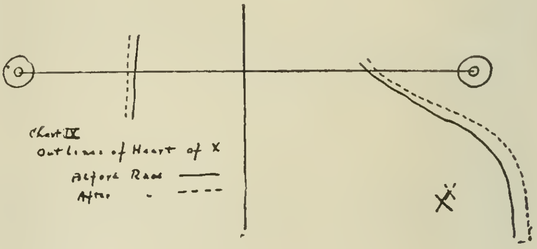

CHART IX.

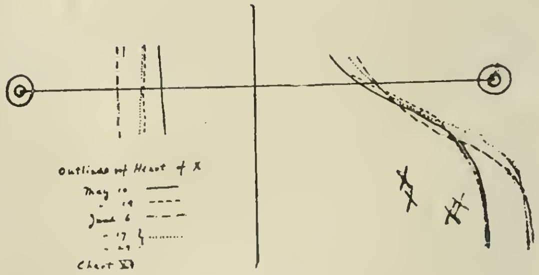

CHART X.

June 29th, before race. Pulse 84; regular; no murmur. Three hours after race. Pulse 88; murmur audible but very faint. General condition excellent.

The changes in the size of this heart corresponding to the changes in sounds and action are shown in Chart X, while the comparatively slight increase during the race itself is brought out in Chart IX.

The gradual improvement in this heart was one of the most instructive points in the entire investigation. After the time-row of May 25th it was in bad shape. The irregularity, accentuated pulmonic second sound, embryonic rhythm and rapid action, together with the enlargement, which was well marked, all pointed to an acute dilatation. During June the establishment of a compensatory hypertrophy was indicated by the return to normal rhythm and rate, the practical disappearance of the murmur and the stationary size. With all the disturbance shown by examination of this man's heart, there was nothing in his appearance or capacity for work which would have called attention to his heart. If he had been advised to stop rowing when his heart was first examined the best demonstration of the beneficial effects of training would have been missed and the crew would have lost a very valuable man.

The four other hearts in this group showed much the same conditions, though in a less degree. All finished the race in good condition and without any more exhaustion than their companions.

Pulse. — The character and rate of the pulse have already been mentioned in several instances, and it is only necessary to add that it was invariably of high tension after unusual effort. This was no confirmation of Williams and Arnold's observation of diminished tension in the Marathon runners. It is possible that the exhaustion of the latter was extreme, and their hearts may have been much more affected than was the case with the crews. It is to be regretted that circumstances forbade the taking of sphygmographic tracings.

The cause of the murmur in acutely dilated hearts is ably discussed by Williams and Arnold; no evidence was secured in this study opposed to their conclusion that the bruits are of mitral origin and are due partly to a relaxation of the circular muscular fibres surrounding the orifice and partly to fatigue of the papillary muscles which control the movements of the valve-cusps.

The chief deduction to be made from this study of the hearts is that the heart is a muscular organ and that it shows with the other muscles both the fatigue due to violent and prolonged exertion and also the increase in size and power due to proper exercise and nutrition. The fatigue results in dilatation, the increased power in hypertrophy, and one of the main objects of training is the establishment of this hypertrophy. The physiological capabilities of the heart are enormous, and in judging of the effect of any undue exertion on it we must not regard the murmurs and irregularity alone, but must also consider carefully the way in which the heart is doing its work, its strength, as shown by its ability to maintain a proper arterial tension, and its recuperative power. As with other muscles, not size but quality tells in the long run.

Kidneys. — Periodic examinations of the urine were made coincidently with the heart examination. An attempt was made to estimate the twenty-four-hour amount, specific gravity, urea percentage and total urea, to test for albumin and sugar and to examine the sediment microscopically. The figures given below, as far as they refer to the twenty-four-hour amount and calculations based thereon, are probably considerably less than they should be. Even with the best intentions, slips of memory were liable to occur, and the full amount of urine passed was not always saved. Perhaps ten to twenty per cent. should be added to the urea excretion for this reason.

The urea was estimated by Squibb's ureometer. For albumin both the nitric-acid and heat tests were employed, and in case of doubt the picric-acid test was resorted to. When an appreciable amount was found, Esbach's albuminometer tube was used. The sugar test used was Fehling's.

The main facts ascertained are summarized in Table VII, subject to correction as noted above. These figures denote a moderate increase in the urea secretion above the normal and by implication a moderate increase in nitrogenous metabolism, but by no means as great an increase as one would expect if all the proteids eaten were absorbed and utilized. Physiologists have proved that an increase in the urea elimination above normal limits is usually caused by an increase in proteid digestion and not by an increase of muscular action.

Sugar. — The tests for glucose were invariably negative.

Albumin. — An unexpected fact brought out in the routine examination was the presence of traces of albumin in the urine of a large proportion of the squad under ordinary conditions of training. The twenty-four-hour amounts were examined six times, the tests being made intentionally only after a lapse of several days after the time-rows, to eliminate their effects as far as possible. In 83 specimens examined albuminuria was present 48 times. The amount of albumin was never more than a trace.

Sediments. — The albuminuria was, with but few exceptions, always accompanied by renal casts and epithelium and occasionally by a considerable excess of leucocytes. In several instances a few casts were found in urines which gave negative albumin tests. In the few cases of albuminuria without casts partial decomposition had taken place before the microscopic examination, so that casts may have been present but obscured.

Table VII. Average Urine Tests.

Date.	No. exam.	24-hour amount.	Specific gravity.	Urea, %	Total urea.
May 9–17 . . .	11	1181 c. c.	1.028	3.42	39.5 gms.
May 18–26 . . .	11	1396 c. c.	1.027	2.68	36.9 gms.
June 2–8 . . .	12	1028 c. c.	1.027	2.76	27.3 gms.
June 18	12	1403 c. c.	1.022	2.53	34.2 gms.
June 20	12	1374 c. c.	1.024	2.66	36.3 gms.

Albuminuria after time-rows and races. — After three of the time-rows and after both races the first urine passed was examined for albumin and casts. The specimens were all small in quantity — one to three ounces — highly concentrated, and invariably contained considerable amounts of albumin, as shown in Table VIII. The largest percentage observed (0.9 per cent., Esbach) was in the urine of one of the four-oared crew after the two-mile race. The sediments contained correspondingly large numbers of hyaline and finely granular casts, many having renal cells and red blood corpuscles adherent. In many of the sediments there was also a considerable number of red blood corpuscles and an excess of leucocytes. The sediment in many cases was exactly that of the first stage of acute nephritis, and if examined without a knowledge of the conditions might easily have caused anxiety.

To find out how long the albuminuria and casts continued after the time-row of May 30th single specimens were examined the following day before the afternoon row, with the result that of 14 samples two contained a trace and one had 0.025 per cent. It is regretted that tests were not made after the rowing on ordinary days, since it is probable that even this may have caused an appreciable albuminuria and that the traces found in the twenty-four-hour specimens really represented a considerable amount of albumin passed in one urination after rowing, diluted with nonalbuminous urine passed during the rest of the day.

The renal conditions may be interpreted as an active hyperemia, becoming intense during the time-rows and races, and dependent in all probability on the increased arterial tension. Whether the hyperemia ever leads to permanent changes in the kidneys is a matter for future investigation.

The blood. — Numerous estimates of the specific gravity of the blood were made by Hammerschlag's method, with the intention of making blood counts and hemoglobin tests should any variation from the normal be observed. The method, however, was found to be tedious and unreliable, the results varying according to the temperature. In several instances when the specific gravity was low — 1.050 or thereabouts — a blood count and hemoglobin test gave normal figures. The examinations made yielded no information of importance and were therefore discontinued.

The digestive system. — One of the most troublesome features in training of all kinds is the care of the digestive organs. Many a race has been lost because of weak stomachs and because of prostration due to diarrhea. The crew squad this year offered no exception to this common tendency, for there were several cases of temporary attacks of indigestion and diarrhea. These troubles ought not to be attributed to the training but to improper diet and methods of eating. The food provided was all that could be desired in quality and in preparation. The chief criticisms suggested were in regard to the selection of food by the men themselves and to their common habit of eating too much and too fast — faults not confined to crewmen but nevertheless unwise. The one aim of many of the men seemed to be to consume as much meat as they could get and in the shortest possible time. The amount of roast beef devoured at a single meal was astonishing, a man often disposing of five or six large slices.

TABLE VIII. Albuminuria after Time-rows and Races. Figures Represent Percentages by Esbach's Albuminometer.

		Varsity Eight.								Varsity Four.				Substitutes.				
Date.	Occasion.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
May 25	Time-row.	Trace	....	0.12½	0.12½	0.12½	0.12½	Trace	0.25	0.25	0.25	0.12½	0.25	0.12½	....	Trace	0.12½	Trace
May 30	Time-row.	0.08	....	0.38	0.05	0.12½	0.10	0.05	0.15	0.05	0.15	0.05	0·05	0.05	0.10	Trace	0.05	0.05
June 21	Time-row.	Trace	Trace	0.25	Trace	0.05	0.07½	0.07½	0.07½	....	...	....	....	...	....	....	....	....
June 29	Races.	....	0.07½	0.25	0.10	0.05	Trace	0.20	0.05	0.90	0.15	0.10	0.07½	....	....	....	....	....

It has already been pointed out in discussing variations in weight that the energy set free in muscular exercise is derived largely from the combustion of fat and carbohydrate material, while the proteid metabolism is directed chiefly to repairing waste. To use a rough illustration, if we regard the body as a machine, the proteid elements of the food go largely to replace the wear and tear of the machine itself, while the carbohydrates and fats furnish the fuel whose combustion liberates heat and energy and thus enables the machine to do work. Of course the body is not a machine and this comparison is not true except in a general way. During training the wear and tear of the body generally is much increased, and the proteid elements of the food must be increased accordingly, but it is an error to increase them so enormously as is frequently the case. The slight increase in the urea excretion indicates that much of the proteid material must pass through the digestive tract unassimilated. This throws a great deal of extra work upon the digestive organs, work which does no good to the body, but may, and undoubtedly often does, do harm in causing indigestion and diarrhea.

The subject is deserving of study based on analyses of the food and of the excretions. A more accurate adjustment of food to needs and more time spent in mastication would unquestionably prevent that sensitiveness of the digestive organs which is one of the bugbears of the trainer.

III. OVER-TRAINING.

It was hoped that during this investigation data might be obtained bearing on the subject of over-training, but unfortunately (or fortunately, according to the point of view) there were no typical cases to study. The common symptoms are well known. They are, in brief, a loss of strength and endurance, so that a man previously strong becomes incapable of prolonged effort. This may be accompanied by a general nervous restlessness, by listlessness, by a loss of weight, by insomnia and by various digestive disturbances, such as anorexia and diarrhea. These symptoms should not be confounded with the temporary collapse which is occasionally seen after a severe exertion and which is more apt to be due to under-training than to over-training. The real condition at the bottom of over-training is still obscure, but in the light of this inquiry certain possibilities are suggested as factors which may have to do with its causation.

The first and most obvious one is the condition of the heart. We have seen that a great increase in size and strength is demanded of this organ and it may easily happen that it is called upon for more work than it is able to do and that instead of establishing a compensatory hypertrophy it becomes dilated and weakened. A "broken-winded" athlete is probably one with a dilated, flabby heart.

The second possible factor is the condition of nutrition. This is more difficult of demonstration than the first. As already pointed out, the nutrition may be disturbed in two ways, either by an improper diet, in which the nutritive elements are not apportioned to the needs of the body, or by disturbed digestion, as a result of which the food taken into the body is not utilized. That both of these contingencies may occur has been sufficiently demonstrated.

The third factor may be simple overwork. This is not so likely as the two preceding, for, when properly nourished, the capacity for work on the part of healthy young men is certainly much greater than that demanded in training. The peculiarity of training work, however, is its concentration. It may be that the excessive work accomplished in a brief space of time exhausts the muscles so that they do not recuperate before being called upon for a repetition of the work — that there is, so to speak, an accumulation of fatigue, and that this constitutes over-training.

The fourth factor which suggests itself is a nervous one, and this, while more intangible than the others, is unquestionably an important one. In the present state of our knowledge it can only be surmised, not proved. It is well known that there is a nervous fatigue entirely distinct from muscular fatigue and resulting from prolonged anxiety, from monotony of work and from numerous other causes. It may be that anxiety about a coming contest, together with the prolonged mental strain of mastering the technicalities of such a difficult art as rowing or such a complicated game as football, may lead to a condition of nervous exhaustion, and that this nervous exhaustion contributes to over-training.

No one of these factors will account for all cases of over-training and probably more than one cause must be admitted. At any rate it is safe to suggest certain points which should be borne in mind in laying out any course of training. They are, (1) not to throw too much work upon the muscles and especially upon the heart, until they are strengthened by preliminary work; (2) to watch the nutrition carefully, and (3) to avoid nervous fatigue by providing a certain variety of exercise, and by not confining the attention too closely to the approaching contest.

Finally, this investigation has demonstrated that the physiological effects of training, on the heart and kidneys in particular, may approach unpleasantly near to pathological conditions, and that there should be some competent supervision to insure that the safe limits, when those are determined, shall not be passed.

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TWO CASES OF INJURY OF THE CORD RESULTING FROM FRACTURE OF THE SPINE.[1]

BY JOHN JENKS THOMAS, A.M., M.D., BOSTON.,

Assistant in Nervous Diseases, Boston City Hospital; Assistant Neurologist, Children's Hospital, etc.

The literature of fracture of the spine within the last few years has reached an enormous volume, and a number of important monographs upon the subject has been published, such as that of Wagner and Stolper, and that of Kocher. Yet it is surprising to find in how few cases careful pathological examinations of the cord have been made. This was done in very few of Bastian's cases, and the same is true of those of Thorburn. In Germany more of this work has been done by Bruns and others. In this country the earliest cases I have found, where a careful microscopical examination was made, are those of Herter, while in Boston the first case was that reported by Dr. Courtney and myself in the Ninth Series of the Medical and Surgical Reports of the Boston City Hospital. In view of these facts I have thought that these additional cases would not be without value. The two cases reported in this paper were both of injury of the cervical region of the cord, and were admitted to the Boston City Hospital, one under the care of Dr. Monks, and the other under the care of Dr. Munro, to whose courtesy I am indebted for the clinical notes of the two cases.

Case I. The first patient was a man thirty-seven years of age, who entered the hospital September 21, 1898. He had been found at the foot of a flight of stairs, and the record states that he had probably fallen three stories. He was semi-conscious at entrance and could be roused. On examination it was found that the patient could turn the head from side to side. There was an indefinite swelling of the neck, with marked tenderness and pain on motion. There was a lacerated wound over the outer side of the right patella, which connected with the joint. Motion was lost in the lower limbs, and sensation was absent over the limbs and trunk, except over the upper part of the chest. The pupils were equal and reacted to light. The superficial and tendon reflexes were absent. The breathing was with the diaphragm, and on the night of the 25th and 26th there was present Cheyne-Stokes respiration. It was noted on the 26th that he could move the left arm a very little, and on the 28th it was added that sensation was normal over the face, neck, and on the outer side of the arms down to the elbows. The patient had to be catheterized, and at first the bowels moved only after the use of enemata, but on the 30th incontinence of feces was noted. The temperature rose on the 25th, and on the 30th it was 104° F. On October 2d the patient became unconscious, and died upon that day.

The autopsy was made by Dr. Mallory on October 3d, eighteen hours after death. The spinal canal only was allowed to be opened. The body was that of a large, well-built and muscular man. On cutting away the subcutaneous tissue around the upper dorsal and cervical vertebræ there was found only the slightest trace of hemorrhage. This was present around the atlas, and also in the close vicinity of the lower cervical vertebræ, and of one or two of the upper dorsal vertebræ. There was a comminuted fracture of the fourth, fifth and sixth cervical vertebræ. The fracture involved the spinous processes, and the laminæ on both sides. On carefully removing the posterior portions of the cervical and the upper dorsal vertebræ it was found that the dura was attached by easily broken adhesions to the lower cervical vertebræ. The dura was tense, and swollen in the cervical portion. On opening it longitudinally there was found in the centre of the cervical enlargement an area three centimetres in length, which was soft and of a slightly yellowish color. The substance of the spinal cord was to a slight extent diffluent. The dura above and below the enlargement contained quite a little clear serous fluid. The cervical enlargement extended two centimetres above and two centimetres below the area of softening, and so far as could be made out externally, was practically normal, except possibly for a little swelling. The bodies of the fourth and fifth cervical vertebræ projected upwards into the spinal canal. The bodies were split longitudinally, as was also the body of the sixth cervical vertebra. The bodies of the fourth and fifth cervical vertebræ seemed to have other fractures in other directions, but they could not be distinctly made out.

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[1] From the Pathological Laboratory of the Boston City Hospital. — Read before the Boston Society for Medical Improvement, May 8, 1899.

Anatomical diagnosis. — Comminuted fractures of the spinous processes, laminæ and bodies of the fourth, fifth and sixth cervical vertebræ; laceration of the cord opposite the fourth and fifth cervical vertebræ with acute softening.

After hardening in formalin, section of the cord through the softened area at the middle of the cervical enlargement showed no sign of the normal structures of the cord. This condition extended for nearly one centimetre above and below the first section. A section 1.5 centimetres above the first one showed a large oval area, darker in color than normal, occupying the position of the left posterior horn, and the left posterior column, and extending well forward into the base of the left anterior horn. About two centimetres below the first section there was a similar dark area, smaller than that just spoken of, which occupied the base of the right anterior horn. About 1.5 centimetres lower, at the lower part of the cervical enlargement this dark area was larger, and still in the right side, but more in the posterior horn, and a similar smaller area was seen in the root of the left posterior horn. Half a centimetre lower the cord on section appeared normal to the naked eye.

Microscopical examination. — Sections were made at various levels and stained with hematoxylin and eosin; hematoxylin and Van Gieson's picric-acid and acid-fuchsin stain; by Weigert's myelin-sheath stain; Pal's modification of this followed by picric acid and acid fuchsin; and by Marchi's method.

At the point of greatest softening, at the level of the fourth cervical segment, it is almost impossible to make out any of the normal structures of the cord. At the periphery there can be seen a few nerve fibres with normal appearing nerve sheaths, but most of the fibres are swollen, and those that are cut transversly are mixed with others cut in all directions, and evidently broken and disorganized. Here and there throughout the section are areas of hemorrhage, composed of masses of red blood corpuscles with a moderate number of leucocytes. These corpuscles do not stain distinctly and are plainly undergoing degeneration. Here and there a blood-vessel is seen, often surrounded by a collection of leucocytes with irregular vesicular nuclei, and by small round cells. Occasionally at the periphery of the cord a connective-tissue septum, or connective tissue about a blood-vessel can be traced for a short distance into the substance of the cord. The greater part of the cord is represented by a confused mass in which are very numerous large and small phagocytic cells, apparently endothelial or connective-tissue cells. These cells for the most part have single rather small vesicular nuclei, eccentrically placed at the periphery of the cell. Occasionally cells are seen with two, three, or even more nuclei, or with a horseshoe-shaped nucleus; the protoplasm appears coarsely granular, and frequently contains fragments of red blood corpuscles or whole corpuscles. Sections stained by Marchi's and by Weigert's methods show that these cells have taken up large amounts of fat, and also myelin. At this level of the cord no nerve cells can be recognized. The sections stained by Marchi's method show a large amount of degenerated myelin throughout the section, aside from that taken up by the phagocytic cells spoken of above. These masses of fat vary greatly in size, some small, others large, and round or irregular in shape, and occasionally rings of various sizes are seen, representing degenerated and swollen nerve sheaths. Both the anterior and posterior nerve roots show the presence of a large amount of fat, fully two-thirds of the fibres being affected. Both the myelin sheaths and the axis cylinders show the presence of fat.

Sections one and a half centimetres above the point of greatest destruction show that the dark area in the left posterior horn consists chiefly of red blood corpuscles, which stain poorly and are evidently necrotic. There is a large amount of brownish blood pigment lying free throughout this area. There are numerous larger and smaller phagocytic cells, similar to those spoken of above, many of which contain blood pigment and red blood corpuscles. Very rarely a leucocyte can be seen. Here and there are large, round homogeneous masses, staining faintly with hematoxylin, apparently greatly swollen axis cylinders. There are quite numerous, rather large, round or oval empty spaces throughout much of this area, apparently formerly occupied by swollen nerve fibres. This area of hemorrhage is fairly sharply bounded, and occupies nearly the whole of the left posterior horn and the left half of the posterior columns, extending nearly to the periphery of the cord, and almost to the central canal anteriorly. Here and there in this area are seen small blood-vessels, with normal walls, without infiltration about them, but these are the only normal structures that can be made out. Sections from this level stained by Weigert's and Marchi's methods show that the phagocytic cells have taken up a considerable amount of myelin and fat, and that there are numerous large, fatty masses and rings, and swollen myelin sheaths scattered irregularly throughout this area. The other portions of the cord at this level appear fairly normal, except that scattered throughout the white substance of the cord, more especially at the periphery, there are to be seen swollen faintly staining nerve fibres, and portions of the periphery of the cord appear edematous. There are also at various places, more especially in the gray matter, enormously dilated blood-vessels to be seen. The sections stained by Marchi's method show a moderate degeneration of nerve sheaths and fibres throughout the cord, not more marked in one area than in another, except that it is perhaps slightly more marked near the periphery of the cord. There is a quite extensive degeneration of both anterior and posterior nerve roots, though less extensive than in the sections made at the point of greatest injury to the cord.

Sections from a level one and a half centimetres below the area of greatest injury, from about the region of the eighth cervical segment, show a similar area of hemorrhage, but somewhat smaller, in the right posterior horn, extending well forward to its base, and somewhat into the right posterior column. Here, too, there are some greatly dilated blood-vessels in other regions of the cord, chiefly near the central canal, and a diffuse degeneration of the nerve fibres of the white substance of the cord, and of the anterior and posterior nerve roots, as shown by Marchi's method.

Sections from the mid-dorsal region and the lower dorsal region show nothing abnormal except a slight degeneration of nerve fibres, about equal in all parts of the white substance of the cord, and a slight degeneration of the anterior and posterior nerve roots. There are no hemorrhages into the pia.

Summary. — We find in this cord at the mid-cervical region, extending over the fourth, fifth and sixth cervical segments, a very extensive destruction of all parts of the cord, partly from hemorrhage into the substance of the cord, and partly due in all probability to a direct crushing of the cord, resulting in breaking down of the nervous structures, a condition sometimes called myelomalacia. Although at the periphery some apparently normal fibres are seen, it is doubtful whether these were capable of functionating, and we probably had in this case a lesion which produced the symptoms of a total transverse lesion of the cord. The presence of phagocytic cells shows that the process of absorption of the destroyed tissues had begun. Above and below this area for quite a distance, there was extensive hemorrhage into the gray matter of the cord, chiefly in the posterior horns, though the white substance of the posterior columns was seriously affected. That is, we have, in addition, a traumatic hematomyelia. Other levels of the cord showed a diffuse degeneration of nerve sheaths and axis cylinders to about an equal extent in both ascending and descending tracts both above and below the crushed portion, and also degeneration of both anterior and posterior nerve roots. No degeneration of tracts of the cord was shown by Weigert's and Pal's stains, probably because a sufficient interval of time for their development had not elapsed. There were no hemorrhages in the pia.

Case II. The second patient was a man who entered the Boston City Hospital on October 31, 1898. The record simply states that he had fallen down stairs. Upon examination there was found a slight abrasion of the left side of the head and face, but no signs of fracture of the skull. The pupils were equal, of normal size, and reacted to light. The examination of the spine showed nothing except marked tenderness over the spinous processes of the third, fourth and fifth cervical vertebræ. There was paralysis of the arms and legs, with slight involuntary movements of both arms and of the right leg. It is stated that the left leg showed muscular spasm. There was complete loss of sensation in the body below the fifth rib, as well as in both forearms, and much diminished sensation in the arms and shoulders. The knee-jerks were much diminished. The cremasteric reflexes were present. The pulse was 70, and of good strength and volume. The temperature was 97.8.° The examination of the urine showed nothing abnormal. At the operation the laminæ of the seventh, sixth and fifth cervical vertebræ were removed. No fracture was found, and no hemorrhage either extra- or intra-dural. The dura was very tense, and darker in color than normal, and on being pricked, clear fluid spurted out with much force. No evidence of pressure upon the cord was found so far as could be told by exploring with a probe. Pulsation returned after the evacuation of considerable fluid. The cord felt normal to the touch. On November 2d it was noted that the patient could move the arms slightly, and that there was a questionable improvement in sensation. The temperature, however, rose that afternoon, and the patient became delirious and died at ten o'clock that evening.

The autopsy was made by Dr. Mallory the next morning. Only the spinal cord could be examined. The body was that of a large and well-built man. There was an incised wound in the median line of the lower part of the back of the neck, about seven centimetres long. On laying open the vertebral canal, the spinous processes and posterior laminæ of the fourth, fifth and sixth cervical vertebræ were found to have been removed by the surgical operation. The walls of the opening leading into the vertebral canal were grayish in color. There was apparently no pus present. On laying open the vertebral canal a small amount of dark red material was present on the posterior surface of the cord, apparently blood and fibrin. After removing the cord, and opening the dura along the posterior surface, there was found in the cervical portion, 2.5 centimetres above the operation opening into the vertebral canal, a slightly depressed bluish line encircling the cord. On pressure at this point the tissue was softer than the tissue above and below. This linear area of softening was situated about opposite the third cervical nerve. There was no swelling of the cord and no hemorrhage. Examination of the bodies of the vertebræ revealed no signs of fracture.

Anatomical diagnosis. — Softening of the cord.

After hardening in formalin the cord showed distinctly the band of softening at the third cervical segment, not more than two millimetres in width. On section through this area there was a dark area in the centre, more marked in the region of the anterior horns, which could be seen extending about half a centimetre in the anterior horns, both above and below the area most damaged, but extending a little further in the right anterior horn than in the left one. Sections through other regions of the cord showed nothing abnormal.

(To be continued.)

THE RÔLE OF THE STAPHYLOCOCCUS IN SKIN DISEASES.[1]

BY CHARLES J. WHITE, M.D., BOSTON.

One cannot attend a daily skin clinic without being struck with the frequency with which pus is encountered in the many various diseases which are presented for diagnosis. The conditions where pus is present may be divided into two categories; (1) where the disease is primarily and essentially of pustular origin; and (2) where pus is a secondary element due to accidental inoculation. In the first division we find impetigo, sycosis (non-tricophytica), ecthyma, furunculosis, abscess and carbuncle; and in the second I mention especially acne, impetiginous eczema, some forms of dermatitis, scabies, certain varieties of iodide and bromide eruptions, and afterwards the primarily vesicular and bullous affections and all cutaneous diseases where pruritus and subsequent scratching play a part. To show a little more precisely how important a place our first division occupies in skin clinics, let me quote a few figures from the returns of the American Dermatological Association, which date from 1877, and of local interest from the records of the skin department of the Massachusetts General Hospital. From the former source we find that the group impetigo, sycosis, ecthyma, furunculosis, abscess and carbuncle constituted 5.19 per cent. of all skin diseases recorded, and from the latter records we learn that these same dis-cases comprised 0.6 per cent. of all the cases observed. As to the precise figures in the secondarily pustular affections it is impossible to speak, as of course there are no such minute statistics in existence. Suffice it to say that in my investigations the secondarily pustular diseases were exactly twice as numerous as the essentially pustular affections.

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[1] Read before the Massachusetts Medical Society, June 13, 1899, and recommended for publication by the Society.

Now what is the etiological factor in this important class of dermatoses? Before mentioning the results of any personal work let us see what the more important investigations of others have recorded in this connection, and let me acknowledge here my indebtedness to Unna and to Wickham for many of the extracts which I shall make in the following paragraphs.

In 1877 Vidal made some inoculations from cases of impetigo and concluded his monograph by asserting the possibility of reproducing this disease by inoculation — a fact which, in his mind, established impetigo as a definite dermatological entity. This was, I think, the first experimental work done in connection with this disease. Hebra had never allowed the existence of impetigo as a separate disease, but had considered it a variety of eczema. Tilbury Fox in 1862 had, however, paved the way clinically for the many subsequent investigators, among whom Vidal was the first, as above stated. Three years later, in 1880, Unna produced an essay claiming the inoculability and autoinoculability of impetigo and differentiated it from eczema. In 1881 Crocker found chains of cocci in microscopical specimens from impetigo. In 1885 Eichstedt described an epidemic of impetigo in 76 out of 79 children recently vaccinated in Rugen, and considered the affection as a definite one which was inoculable only by intimate contact. This same year Dewérve made a series of inoculations from all products of impetigo and succeeded often in obtaining cultures. Eight years later, in 1893, this same writer produced impetigo artificially by rubbing lice from an impetiginous child upon the skin of a healthy child, and concluded that pediculi were the carriers of the disease — an observation to which many recent writers would agree, although Unna claims merely coincidence.

Bockhart, in 1887, established the extremely important fact — one which Unna characterizes as epoch-making — that from an inoculation from impetigo, one could produce impetigo, folliculitis and furunculosis. This assertion has been verified by other observers, and, I think, has been denied by none. Bockhart thus claimed that several diseases, hitherto considered separate and distinct entities, were practically one and the same, that one could pass into another and that the clinical forms were due to a difference in soil, seat and individual, and not to a separate etiological factor. Bousquet two years later proved that these diseases were due to cocci and reiterated the statements of Bockhart. A few months later Dubreuilh — Bousquet's master — said that "the staphylococcus aureus and perhaps the albus were the pathogenic organisms," and claimed that there is only one impetigo and that it is inoculable; that furuncles are of the same origin, but lie at a different level of the skin; and that the pustules of scabies are etiologically similar to impetigo and to furunculosis.

In 1890 and 1891 Leloir described many inoculations from cases of impetigo and found only staphylococcus pyogenes aureus or albus and concluded that all forms of impetigo were inoculable. The following year Leroux continued the work and isolated staphylococcus aureus, albus and citreus and a peculiar form of streptococcus. Dupray spoke only of staphylococci in his thesis in 1891, and some months later Wickham came to similar conclusions in an excellent monograph, from which I shall now quote at some length.

Wickham found that on inoculating from impetigo, first from vesicle, then from pustule, then from crust, and finally from excoriation under the crust even after disinfection with alcohol, pure staphylococci resulted each time, and concluded: (1) that staphylococci are found in all secretions of impetigo, in the vesicles as well as in the pustules; (2) that the staphylococci exist in abundance in the inflamed tissues, and that they are in the serous exudations even at the moment of their issue; (3) and that each variety of staphylococci can be met with alone or in company with another variety. Wickham inoculated himself on one forearm with the albus and on the other with the aureus. In three days a few miliary pustules appeared, which quickly disappeared. He then took a culture of aureus and albus from a non-tricophytic sycosis and one from a purulent zoster and inoculated himself again and found the same results, from which he decided that he did not offer a suitable soil, so he repeated the experiment on a strumous child and produced a typical impetigo contagiosa, which began as an erythema and incipient vesicles within two days and went through the stages of pustulation and crust formation. He then concludes: (1) that the inoculation of cultures of staphylococci can reproduce complete impetigo; (2) that the inoculation of staphylococci, whether aureus or albus, produces analogous lesions; (3) that the staphylococci of impetigo are identical with those of other suppurations, that is, sycosis, pus of secondary infection; (4) that certain subjects are rebellious to inoculations and that to succeed one must have great perseverance and irritate the skin violently and apply thick layers of micro-organisms; and (5) that a lymphatic soil predisposes to impetigo.

In concluding his monograph, Wickham writes: (1) That certain affections described heretofore as separate diseases — such as impetigo, sycosis non-tricophytica, paronychia, ecthyma, furuncle, folliculitis and carbuncle — are sister maladies, of the same essence; and that the same micro-organism can produce one or another of the aforesaid diseases; (2) that several of these diseases can be found united in the same individual; (3) that therefore none of these affections should be given a special designation, but these diverse affections are not special entities but only pathological forms of a cutaneous malady, more general, polymorphous *par excellence*, produced by the staphylococcus, and to which it would be suitable to give such a name as staphylococcia purulenta cutanea.

In 1893 Kurth was the first of the modern investigators to associate streptococci with the name of impetigo. Kurth considered staphylococci only as companions of his streptococcus, which differed in many ways from the streptococcus of Fehleisen. Three years later Brochet published results of a similar nature, but to many his streptococcal theory would appear invalid, since re-inoculations from his isolated streptococci produced a lymphangitis and not an impetigo or a folliculitis. Brochet, however, differed from Kurth and others in that he considered his streptococcus to be the same as that of erysipelas, only in an attenuated form.

In 1896 Armstrong observed a series of impetigo cases in Edinburgh football players, and stated that staphylococci were the active agents in the disease. In the following year Balzer and Griffon studied 31 cases of impetigo and 14 of ecthyma, and satisfied themselves that streptococci were the cause of the infections, but re-inoculations produced abscess, erysipelas and fatal septicemia, and not the original diseases.

Two years ago Curry conducted a series of pathological investigations, and from his results I quote those which apply to the question we are considering. In 6 pustules he found that 4 were due to the staphylococcus pyogenes aureus, 1 to the bacillus of diphtheria, and 1 to the bacillus pyocyaneus. [I would say that the diphtheritic pustule was due to an accidental inoculation from a case of that disease, and is therefore a case by itself.] In 6 furuncles Curry found that 4 were due to the staphylococcus aureus, 1 to the streptococcus and 1 to the bacillus pyocyaneus. In 3 cases of felon he found only the staphylococcus, in 3 carbuncles a similar result, and in 18 abscesses he showed that 13 were due to the aureus, 4 to the albus and 1 to the streptococcus. This year Corlett found, on examining 9 cases of impetigo, that 3 were due to the staphylococcus aureus, 3 to the albus and 3 to the aureus and albus together.

Thanks to the kindness of Dr. R. M. Pearce, I was allowed to examine the Surgical and Medical Reports of the Pathological Laboratory of the Boston City Hospital, and from them I have selected 1 case of sycosis, 3 of furunculosis, 2 of carbuncle and 95 of cutaneous abscess. The 6 cases of sycosis, furunculosis and carbuncle were due to pure infections of staphylococcus aureus, and in 79 of the 95 abscesses, that is, in 83 per cent., the staphylococcus in some form was found in a pure state or in conjunction with one or more organisms. To be more precise, I append this table of the analysis of the bacterial examination of the 95 abscesses: In 31 cases the staphylococcus aureus was found alone; in 13 cases the staphylococcus albus was found alone; in 14 cases the two were found in conjunction; in 7 cases the staphylococcus aureus and the streptococcus were found; in 7 cases the staphylococcus albus and the streptococcus were found; in 2 cases the staphylococcus aureus and the pneumococcus were found; in 2 cases the staphylococcus aureus and a diplococcus were found; in 1 case the staphylococcus albus and the bacillus coli communis were found; in 1 case the staphylococcus aureus and albus and the streptococcus were found; in 1 case the staphylococcus aureus and albus, the streptococcus and the bacillus pyocyaneus; in 14 cases the streptococcus in pure cultures was found; in 3 cases the pneumococcus in pure cultures was found; and in 1 case the bacillus pyocyaneus in pure culture was found.

When Unna published his text-book in 1894 he believed that staphylococci were the cause of impetigo, and said that if we examined the interior of impetigo pustules we should find staphylococci. Now, after a lapse of five years Unna, in collaboration with Frau Schwenter-Trachsler, in a brilliant series of articles, has abandoned his former belief and claims that a special streptococcus is the pathogenetic factor. One point, however, is especially striking, and that is that he no longer searches for the cause in the primary, unbroken pustule, but in the characteristic, exuded, coagulated serum of the impetigo crusts. It is hardly fitting for a young writer to question the verdict of so experienced an authority as Unna, but I should certainly agree with the opinion of Crocker when he says "that search has been made in the crusts (for the cause of impetigo), but their liability to become contaminated is so great that no deductions can be drawn from such observations."

Unna differentiates his impetigo coccus from the streptococcus vulgaris by the following characteristics, which we see are quite unusual: "The chains are always short and composed of from four to six cocci; the chains are quite straight, or at most slightly curved; the chains never form loops or curves; the cocci are irregular and differently shaped; the cocci have their long diameters at different angles; the contents of the cocci often receive the stain unevenly; the colonies are thick and irregular, with several short, apparently broken off, branching twigs."

Thus, at too great expense of your patience, I fear, I have stated the bacteriological history of impetigo and its sister affections — sycosis, ecthyma, furunculosis, abscess and carbuncle, and I think it is fair to claim that the great majority of investigators concur in the opinion that they are all probably of staphylococcal origin. There have been a few notable exceptions where men have believed in the streptococcal theory, but to our way of thinking there have always been serious flaws in their arguments.

My own investigations relate to the examination of all pustular lesions which were presented at the skin clinic of the Massachusetts General Hospital between February 23d and April 13th of this year. The material for inoculation was in all cases taken from under the unbroken skin. In enumerating the diseases I shall divide them into the two groups which I have described above, and must explain the comparatively small numbers of impetigo and ecthyma by the fact that these studies were carried on during the cooler months when poor children play mostly at home with their arms and legs protected by clothing.

In the first group there were 11 cases of impetigo, 10 cases of sycosis, 14 of furunculosis and 2 of carbuncle. In the second group there were 39 cases of acne vulgaris, 11 of dermatitis, 4 of syphilis, 3 of ringworm, 2 of lupus vulgaris, 2 of herpes, 2 of scabies, 2 of impetiginous eczema, 3 of iodide of potash and 1 of bromide of potash dermatitis, 3 of dermatitis venenata, 1 of herpes zoster and 1 of tuberculous gumma — in other words, 111 examinations. From this number the staphylococcus pyogenes aureus or albus appeared 88 times, the bacillus subtilis 4 times, the micrococcus tetragenus 3 times, the streptococcus 4 times, a doubtful bacillus once and in 24 instances the tubes remained sterile. From 12 cases there were two different bacteria isolated and in 1 case three were found. Thus, excluding the sterile cases and the non-pyogenic organisms, we find that in the first division of diseases there were 36 infections from staphylococci and 1 from streptococci, while in the second division there were 45 from staphylococci and 3 from streptococci.

Therefore, these Boston figures lend themselves in a very striking manner to the theory of the staphylococcal origin of pustular affections of the skin, and to emphasize my testimony more strikingly I append the following table:

First Division.

	Staphylococcus aureus.	Staphylococcus albus.	Streptococcus.	Sterile.	Uncertain.
Impetigo	7	3			
Sycosis	7	2			
Furuncle	9	2		2	
Carbuncle	2				

First Division (cases with double infection).

	Staphylococcus aureus.	Staphylococcus albus.	Streptococcus.	Sterile.	Uncertain.
Impetigo	2	1	1		
Sycosis	1	1			
Furuncle	1	1			

Second Division.

	Staphylococcus aureus.	Staphylococcus albus.	Streptococcus.	Sterile.	Uncertain.
Acne	1	20		14	1
Dermatitis	4	2	1	1	
K. I. dermatitis				2	
K. Br. dermatitis				1	
Scabies	1	1			
Impetiginous eczema,	2				
Zoster		1			
Herpes				1	
Ringworm				1	
Syphilis		3			
Lupus vulgaris	1			1	
Dermatitis medicamentosa		1			
Dermatitis venenata	2				

Second Division (cases with double infection).

	Staphylococcus aureus.	Staphylococcus albus.	Streptococcus.	Sterile.	Uncertain.
Acne	2	2			
Dermatitis	2	1			
Scrofuloderma	1	1			
Herpes			1		

And now in closing let me say a few words about impetigo contagiosa from a clinical standpoint. Etiologically I hope I have made it clear that the disease is in all probability due to the specific action of staphylococci, and in this connection I want to speak of its far greater prevalence in warm weather.

In the skin department of the Massachusetts General Hospital in 1897 there were 118 cases of this disease recorded; in 1898 there were 206 — a gain of almost 100 per cent. When we recall the two summers and the two autumns and contrast them one with the other, we shall remember that in 1898 we had an unusually severe summer heat which made itself felt almost into December, while in 1897 we had a comparatively cool summer and an average autumn. Now, if we look at the following table we shall see more strikingly how closely the figures correspond to the severity of the heat.

1897,	First quarter	21 cases.
"	Second quarter	14 "
"	Third quarter	51 "
"	Fourth quarter	32 "
1898,	First quarter	34 "
"	Second quarter	30 "
"	Third quarter	74 "
"	Fourth quarter	68 "

There is another etiological point which I wish to bring to your notice, and that is the presence of pediculi on the scalp. I have no direct figures to present in this connection, but you all have noted this coincidence in your practice among the poorer classes. I do not lay too much blame upon pediculi as direct agents in the genesis of impetigo, although I have stated above that Dewévre proved that the disease could be produced by rubbing pediculi from an impetiginous child upon the skin of a healthy child; but I do wish to emphasize the fact that by their presence a scratching of reflex origin is established which causes the child to inoculate himself with the staphylococci which surely abound under his finger nails. The presence of pediculi is therefore a condition upon which we must all strive to make war, and especially among school-children, where the disease is so prevalent. This crusade is now being carried on in the Boston public schools, and, I think, with success.

Another point is that in warm weather poor children play about the streets more than in the colder months, and these same children are apt to wear very little clothing when the heat is intense. Therefore, in summer and in autumn we see impetigo scattered over the whole body, and especially about the face, lower arms and hands, lower legs and feet; while in winter, except in babies, the disease is generally limited to the vicinity of the mouth, nose, ears and eyes.

As to the age at which impetigo contagiosa appears, it is safe to say that nine-tenths of the cases occur in childhood, but there are, however, instances of the affection in adults, and of this latter class I want to say a few words, as it is a condition not quite well enough understood by the general practitioner. In children the clinical picture is quite constant, and we are all well acquainted with the uneven, thin, moist, superficial crusts, varying in color from lemon yellow to orange, which appear, often in the midst of superficial, oozing excoriations upon the more exposed parts of an otherwise rather dirty child. When we come to the adult type, however, we meet a very different condition. Here we find that the subject is almost always a young man, and the seat of the lesions generally the shaven part of the face. We find very often an interesting succession of infections occurring in members of the immediate family or in the patient's intimate companions. The lesions are usually just below the horny layer of the skin and consist of broad, very shallow pustules extending about the shafts of the hair and covered with yellowish white scales. The progress of the disease is very rapid, and for this reason we are not apt to see isolated lesions, but irregular, gyrate groups covering a considerable area of one or both cheeks. This type is not associated with pediculi, and we seldom if ever find these animal parasites or any evidence of scratching, but we do inquire about the habits of the patient, and often learn that he is shaved at a barber's shop or uses a companion's towel. Here again, therefore, we must enter another plea for more careful cleanliness among both barbers and the public, and demand a more thorough disinfection of the implements and the utensils of the toilet, both public and private.

As to the treatment, there are only a few words to say. In the juvenile type plenty of soap and water at frequent intervals, an application twice daily of a five-per-cent. boracic-acid ointment and a thorough soaking of the scalp with crude petroleum for three successive days will, within a week, destroy all active evidences of the disease. We must, however, often wait several weeks for the brilliant erythema, which underlays the crusts, to disappear. In the adult type, on the other hand, we must use rather stronger drugs and must expect a rather longer treatment before the activity of the process is checked. A five-per-cent. ointment of sulphur, or the application of black wash for fifteen minutes night and morning in conjunction with a five-per-cent. ointment of salicylic acid and carbolized cosmoline, will usually prove sufficient to cope with the bacteriological invasion. Here again soap and water and clean towels, razors, combs and brushes are indispensable if we wish to be free for now and all time from impetigo contagiosa.

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MULTIPLE ULCERS OF THE VULVA AND VAGINA IN TYPHOID FEVER.

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Perhaps no subject connected with typhoid fever has latterly excited so widespread a scientific interest as the bacteriologic relations of the bacillus typhosus to the complications and sequelæ of this malady. A whole series of diverse lesions in many organs and tissues have been described for which this specific organism has been held responsible; but, notwithstanding the not uncommon dissemination of Eberth's bacillus in the most remote and varied tissues, invasion of the female organs of generation is an accident of comparative infrequency. The disparate reports of gangrenous processes, abscesses, or other more or less extensive lesions involving the vulva and vagina have been collected by Keen,[1] but multiple ulcerations of the character described in the two cases reported herein are unknown to us in literature. In one case a bacteriologic study of the ulcerations was made and the typhoid organism found in almost a pure culture; in the second case no opportunity presented itself for similar investigation.

Case I. Emily C., single, sixteen years of age, American, entered the Albany Hospital, April 3, 1898, complaining of headache, backache, and general malaise.

Family history. — The father is alive and well; the mother is dead, the cause unknown. One brother and one sister are alive and healthy.

Past history. — The patient cannot recall any past illness. Menstruation began at fourteen years, and has been normal.

Present sickness. — About two weeks ago she was taken sick with headache, pain in the back, and some fever. Several days afterwards pain developed in the left side of the vulva, which was accentuated on urination. On March 31st, two days after the appearance of the trouble in this region, a physician was called in and found a number of small superficial ulcerations on the labia majora and just within the vaginal orifice. From the beginning of her sickness until admission to the hospital the anorexia has been almost complete; bowels constipated.

On admission into the hospital the temperature taken in the mouth was 102.8° F.; pulse regular, of fair volume and 100 per minute; respirations 26. At this time the following note was made: Patient is a delicately built, fairly well-nourished girl; skin pale and moist; pupils normal; mucous membranes pale, conjunctivæ slightly suffused. Tongue covered on the dorsum in the middle with a thick brown fur; papillæ prominent. No edema. No glandular enlargements. The cardiac dulness is not increased; heart sounds normal, except the pulmonic, which is somewhat accentuated; lungs are normal. The splenic dulness is somewhat increased; spleen is just palpable on deep inspiration just below the costal border. The liver dulness is apparently normal. The abdomen is generally tender, more especially in the hypogastric region. No ileocecal gurgling. Examination of the genitals showed about ten or twelve very small superficial, round or less often oval, sharply defined ulcerations located on the cutaneous and mucous surfaces of the labia majora, labia minora, and just within the vaginal orifice and external to the hymen. The margins are clear cut, and the bases covered with a thin layer of thick, yellow, purulent material. These ulcerations vary in size from the largest ones, which have a diameter of one centimetre, to those measuring about three millimetres. They involve only the superficial layers of the skin. No discharge from the urethra or the vagina could be detected.

April 5th, 10 A. M. Complains of pain in ankles and left chest. The ankles are free from swelling, but tender to palpation. Lungs normal. Physical condition practically unaltered. Pulse 102, regular, fair volume, not dicrotic; highest evening temperature yesterday was 104.2° F. Ulcerations on genitals present a similar appearance to that when first seen. Cover-slips were made and several cultures taken from different ulcerating points.

April 7th, noon. Considerable pain in abdomen, which is tender and tympanitic. Temperature 105° F. this morning at 10 o'clock. Mind clear. Chest normal. Urine is normal in quantity, highly colored, and contains neither albumin nor sugar. Microscopic examination shows no casts.

April 12th, 11 A. M. Cultures taken on the 5th contain growths of the typhoid bacillus. Widal reaction is positive. Patient's condition improved. Vulvar ulcerations completely healed.

April 16th, 10.30 A. M. Abdomen tympanitic and tense; spleen easily palpable; pulse 98 and regular; temperature 102.8° F.

April 24th, noon. Heart sounds weak; lungs show nothing abnormal. Improvement continues.

May 2d, 11 A. M. The temperature has been normal for four days. Two cultures were taken from the urine on the 25th of April and the typhoid organism was isolated from one of the specimens.

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[1] Keen: Sequelæ and Surgical Complications of Typhoid Fever, 1898.

From this convalescence has been rapid.

Bacteriological examination. — Two cover-slip preparations were made from two different ulcerations on the labia minora and stained with aniline gentian-violet. They both contain many bacilli of medium thickness and length, with rounded ends, morphologically similar in both specimens, which easily decolorize by Gram's method. Three cultures were made on agar-agar slants from three various ulcerating points and subsequently plated in agar-agar in the usual manner. All plates contained an abundant growth of discrete, round, pin-head or smaller, white, finely granular colonies with a regular outline. The colonies are all made up of bacilli similar in morphology to those in the cover-slips. In one plate a single, yellowish-white, round, pin-head-sized colony grew in addition to the other colonies. Further investigation showed this colony to be made up of cocci, frequently in pairs, not decolorizable by Gram's method and identified as the micrococcus subflavus (Flügge). Experimentally this organism showed no virulency whatsoever; two cubic centimetres of a thirty-hour bouillon culture introduced subcutaneously into the thigh of a full-grown rabbit produced neither local nor general effects; an intravenous inoculation of one cubic centimetre of a twenty-six-hour bouillon culture likewise produced no reaction.

The bacillus on slant agar grew as a fine, translucent, gray, moist growth, slightly elevated above the surface. Gelatine was not liquefied. Stab inoculations in glucose, lactose and saccharose agar produced no gas. Litmus milk was turned faintly pink but not coagulated. On potato the growth was moist, glistening and almost invisible. Bouillon and Dunham's solution became diffusely cloudy at the end of twenty-four to forty-eight hours. No indol reaction could be obtained in Dunham's peptone solution. Young bouillon cultures contain bacilli, actively motile, which when stained by Pitsfield's method show eight to fourteen flagella (petechial arrangement). The bacillus was repeatedly tested with known typhoid sera and a positive Widal reaction was in each instance obtained.

Case II. Nellie C., twenty years of age, was admitted to the Albany Hospital, suffering with severe pain in the loins and some headache. She had been sick about two weeks. On admission the temperature was 103.4° F.; pulse 100, and dicrotic. The spleen was palpable. Rose spots were discovered two days after entrance; and the blood, which was tested on the sixth day, gave a well-marked Widal reaction. The subsequent course of the disease was that of a severe typhoid fever, which culminated in the death of the patient on the eighteenth day of her stay in the hospital.

On the second day the nurse called the attention of the house physician to the existence of a number of ulcerations on the vulva. Inspection of the genitals showed the presence of nine or ten small superficial ulcerative lesions varying in size from those having the diameter of a pea to two or three measuring fully one centimetre. Some were round; others irregularly oval; all were well defined, with sharply cut margins, and the bases were covered with a small quantity of yellow muco-pus. The superficial strata of skin appeared involved only. Unfortunately no bacteriologic study was made of the ulcerations.

With the knowledge of the existence of typhoid bacilli in the urine the probability of the manner of infection becomes obvious in the first patient, although the possibility of the origin from minute bacillary emboli should not be forgotten; the number of ulcerative points, however, is less coherent with that possibility than with the not unlikely urinary origin of infection.

In conclusion, we wish to express our gratitude to Drs. Samuel B. Ward and Howard Van Rensselaer of Albany, N. Y., for the opportunity to study and report these cases.

Note. — Since the preparation of this report Dr. Hennessy, of this city, tells me that he has met with similar ulcerations in a case of typhoid fever in which, however, no bacteriological study was made.

Medical Progress.

REPORT ON PROGRESS IN THORACIC DISEASES.

BY GEORGE G. SEARS, M.D., AND JOHN W. BARTOL, M.D., BOSTON.

AORTIC ANEURISM AS THE CAUSE OF HYPERTROPHY OF THE LEFT VENTRICLE.

Calvert[1] says that as there has been considerable conflict of opinion on this subject, he thought it worth while to see what light the post-mortem records of St. Bartholomew's Hospital threw upon it. He found that of 124 cases of aneurism of the arch of the aorta, 68 showed no hypertrophy, while in 47 it could be perfectly explained by other causes and in nine it very probably could. Therefore, so far as these records are concerned, there was practically no evidence in favor of aortic aneurism being the cause of hypertrophy of the left ventricle.

In the discussion which followed, Dr. Lazarus-Barlow said that the records of St. George's Hospital for the last two years entirely bore out Dr. Calvert's conclusions, for of 13 cases, it was expressly noted in eight that there was no hypertrophy and in the five cases in which it was present it was accounted for by aortic regurgitation or granular kidney. These results are in line with what he had already stated in his "Manual of Pathology," that hypertrophy of the left ventricle would not be expected unless the case was complicated by the presence of a lesion of the aortic valve. He doubted whether atheroma of the aorta by itself would cause hypertrophy, except in the very rare cases where it gave rise to some stenosis, but arterial sclerosis affecting the smaller arterioles was a frequent cause.

TREATMENT OF ANEURISM WITH SUBCUTANEOUS INJECTIONS OF GELATINE.

In June of 1897 Lancereaux,[2] in collaboration with Paulesco, called attention to a new method of treatment which he had been led to try by the previously reported effects of gelatine injections in increasing the normal coagulability of the blood. He showed at that time a patient with large aneurism of the aortic arch cured by this method, and he has since presented another case of aortic and one of subclavian aneurism with equally good results.

This success has led him to make claims for the method which have not been entirely shared by certain of his *confrères*, who, while acknowledging the great possibilities of the measure and admitting the triumph of his cases, urge, on the basis of their own experience, the danger of fatal result from thrombosis in other localities than the one desired. In reply Lancereaux maintains that the clotting will take place only where the vessel wall has undergone change, that is the aneurismal sac, and in view of certain obvious errors he feels justified in calling in question their methods. His directions are as follows: The solution is made with four grammes of white gelatine in 200 cubic centimetres normal salt solution and sterilized at 120° centigrade. For injection a flask is fitted with a rubber stopper traversed by two glass tubes, one of which reaches to the bottom of the flask and externally is attached by a rubber tube to a needle of large calibre; the other glass tube is short and is connected with a bulb or Potain inspirator. After thorough sterilization of apparatus and site of injection (preferably the buttock), the needle is plunged deeply into the subcutaneous tissues and the injection should not take over quarter of an hour. There is little if any pain and no marked systemic reaction. The patient should be kept absolutely quiet for a time and palpation of the sac should be avoided. Injections, which may consist of 100 to 200 cubic centimetres, should be repeated every six to eight days until the sac is obliterated.

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[1] Lancet, January 14, 1899.

[2] Bull. de l'Acad. de Méd., 1897; Gaz. d. Hôp., 1898; La Sem. Méd., 1897 and 1898.

CHRONIC MEDIASTINITIS; INDURATIVE MEDIASTINO-PERICARDITIS.

Whipham,[3] on the occurrence of a case in his own service, was able to collect from the post-mortem records of St. George's Hospital only four cases in a period of fifty years; with these four he has tabulated eight others from different sources, and in addition makes an abstract of a report of 25 cases by Harris.[4] He excludes from his own list pericarditis occurring in children as a complication of rheumatism or other diseases, unless the inflammation involved other structures in the chest as well as the pericardium, and also those cases where the matting together of the thoracic viscera by fibrous tissue was the result of tuberculous pleurisy.

Perhaps the most striking thing to be gleaned from the analysis is the great lack of suggestive diagnostic symptoms or evident etiological factors, even in the cases where the pathological changes were very extensive. So far as definite conclusions can be reached, the following seem most important:

Age and sex. — The apparent preponderance of cases in adult life is probably due to the natural chronicity of the disease, death not occurring until after a lapse of years. The proportion of males to females is four to one.

Causation. — Rheumatism is not an important factor, nor does any antecedent disease seem particularly to predispose to the condition. Tuberculous conditions may or may not coexist. The concurrence of chronic peritonitis with ascites is noticeably frequent.

Heart. — Hypertrophy of the heart is not a necessary result: in only 11 of 36 cases is enlargement noted; there may be extensive mediastinal changes while the heart remains normal or even diminished in size as result of contraction of adhesions.

Pericardium.— In the majority of cases the cavity is either partially or entirely obliterated by fibrous adhesions.

Pulse. — The rate is almost invariably accelerated, and in the majority of cases has been 100 or over. Pulsus paradoxus occurred in only nine of the cases included in the report, and in 50 per cent. of the cases in which it was observed no constriction of the large vessels by fibrous growth existed.

Diagnosis. — Especial attention is called to the difficulty of making a diagnosis and the plausibility with which the physical signs might be explained as depending on other conditions. The following are given as significant: puffiness of the face, cyanosis of the lips, edema of the thoracic walls, prominence of the veins of the arms and neck, and ascites.

Treatment. — From the nature of the process it is evident that, even with diagnosis established, there is little other than symptomatic indication for treatment.

LATENT AND EPHEMERAL PERICARDIAL EFFUSION.

Ewart[5] makes valuable addition to papers already published by himself[6] on recognition of pericardial effusions.

The first paper dealt with the value of certain diagnostic signs to which he attaches great importance but which have not been implicitly accepted by other observers; for example, the posterior pericardial patch of dulness; the first rib sign; the posterior patch of tubular breathing; tubular breathing below right mamma, etc.

In the other two communications he draws attention to an interesting condition which he is lead to believe exists much more frequently than is suspected by most clinicians (himself until lately included), namely, a pericardial effusion of small amount and brief duration, occurring "independently of acute inflammations, most commonly under the influence of rheumatism, of Bright's disease, and of valvular affections." He reports half a dozen illustrative cases where the condition might easily have escaped any but the most careful examination (the value of actual tracings noting results of percussion and auscultations, taken as a daily serial for comparison, is emphasized), and in conclusion makes the following summary: Pericardial effusion occurring as above noted may last not more than one to three days, after which complete absorption takes place. Owing to its moderate size and to the absence of the painful symptoms of pericarditis, and of the worst pressure symptoms, the effusion seems to be commonly overlooked. The dulness due to it is apt to be mistaken for an increased area of cardiac dulness and usually for cardiac dilatation. The pathological etiology of these effusions is not clear. They may arise from some acute inflammatory process, or more commonly, perhaps, they are passive, that is, dependent on some temporary alteration of the general or of the lymphatic circulation. Their spontaneous recovery in most cases shows that no special treatment is necessary. Re-absorption would obviously be hastened by diaphoretics, diuretics and cathartics.

(To be continued.)

Spread of Plague. — Plague is reported to have appeared at Alexandria, in Egypt, and fourteen cases with two deaths have been reported. It has also broken out in Bushire in the Persian Gulf.

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[3] Lancet, April, 1899.

[4] Medical Chronicle for 1895.

[5] Trans. Clin. Soc., Lond., 1897.

[6] Brit. Med. Jour. and Lancet, 1896.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

REGULAR meeting, Monday, May 8, 1899, DR. R. H. FITZ in the chair.

DR. J. J. THOMAS reported

TWO CASES OF INJURY OF THE CORD RESULTING FROM FRACTURE OF THE SPINE.[1]

DR. KNAPP: I think Dr. Thomas has put very well the diagnostic points between a fairly complete crush of the cord and a partial injury. There is one symptom which has impressed me occasionally in fractures in the lower part of the spine; that is a rapidly developing tympanites which is indicative, I think, of a complete crush of the cord. Not very long ago I saw a young woman who had rolled out of a window some twenty or twenty-five feet high, coming down upon the railing of a piazza and striking upon the lower portion of the spine. She at once had complete paraplegia, loss of sensation, paralysis of the bladder and rectum, and within a very few hours this marked tympanites had also developed. Spinal surgery was resorted to, although I felt at the time that it was entirely hopeless. The result was that the operation was useless, for there was a complete crush of the cord. Supposing we diagnose between a complete crush and partial injury, even then the promise of spinal surgery is on the whole slight, for, as a rule, if the cord is only partly crushed, operation will not help. Last year I saw a case which Dr. Graeme Hammond showed at the meeting of the Neurological Association in New York, which I supposed was the best result yet obtained by spinal surgery. The patient was a wrestler, who in wrestling had received a fracture of the cervical vertebræ, and for two or three weeks had been completely paralyzed. After an operation he made a complete recovery so that he resumed wrestling and was able among other things to do the bridge, in which he supported himself on the hands and feet on the ground with the back downward, holding himself so that the opposing wrestler could not force his shoulders down upon the floor. Theoretically we can imagine cases where spinal surgery may do some good — cases of extra-medullary hemorrhage and cases where the vertebræ have been broken with such extreme delicacy that the fragment comes down just so as to touch the cord and to press upon it enough to cut off conduction, but not enough to injure the delicate substance of the cord itself. Those cases are theoretical; they can be conceived, but practically it must be an exceedingly difficult process to exert the violence in such a way as to break the vertebræ without doing more harm to the cord; the ordinary rule, of course, being that the fragment is rapidly and forcibly driven upon the cord and springs back again into place, causing an immediate crush and not a long-continued pressure. That I think Dr. Thomas has shown very clearly in the cases which he has reported.

The explanation of the question of the knee-jerk is certainly puzzling. Brissaud has recently gone over the subject, and has laid considerable stress upon the point which Dr. Thomas has brought up, as to the possibility of injury either to the anterior horns, or to the cells of the anterior horns, or to the nerve trunks or nerve roots. In a very large number of these cases of injury in the cervical region the patient does not live long enough, even if his death is not aided by spinal surgery, for us to discover whether the knee-jerk may or may not eventually return. A good many years ago I was inclined to believe that irritation in the upper portion of the pyramidal tract might cause for a time a loss of knee-jerk. I remember in particular one case of a negro, whom I think Dr. Webber may possibily remember in his service at the City Hospital, with a syphilitic history, who had, I believe, a sudden paraplegia coming on during coitus. He had all the symptoms of a transverse myelitis, with a complete loss of knee-jerk. It was before the days of reinforcement, but under the ordinary conditions the knee-jerk could not be obtained. With that there was complete paraplegia, complete anesthesia, and paralysis of the bladder and rectum, but after he had gone on for a number of weeks in that condition the knee-jerk returned and there was a marked exaggeration, with clonus. Whether in these cervical cases, where there is a pretty complete crush, the knee-jerk may return at the end of six or eight weeks is still uncertain, because, as a rule, too few of the cases live for us to determine that point; although one case of absolute division of the cord which I remember, where there had been laminectomy, and the two ends of the cord were seen absolutely divided in the spinal canal in the upper or mid-dorsal region, there was a complete absence of knee-jerk about a year after.

DR. WEBBER: I remember the case that Dr. Knapp referred to at the City Hospital, and another curious point in regard to it was that the coitus was in the standing position, and I remember seeing it stated that coitus in the standing position might cause myelitis. I do not remember any more of the particulars of the case than Dr. Knapp has spoken of, only I had an impression that the symptoms were not absolutely sudden, as in the case of injury or hemorrhage, but that some hours were occupied in the development of them. It is possible there may have been one or more very minute hemorrhages at the starting point for the myelitis.

In regard to Dr. Thomas's paper I have been very much interested in the paper, and each point that I thought of speaking of as he read he fully covered in his discussion of the subject, so that I have nothing further to add. I was very much interested in his discussion of the knee-jerk, and the paper I think is a very instructive one in regard to the fact that in a great many of these cases there is no pressure on the cord. That point I think he has well brought out, and where there is crushing, the bones spring back into place and the canal is sufficiently clear for the normal cord to pass through without being pressed upon. Another point I thought was interesting was the small amount of hemorrhage which was found around the cord and perhaps the small amount in the cord itself. I have only seen a few cases of fracture. Recently I have not seen any, not being connected with a hospital, but in the few cases I have seen I do not remember any where the symptoms were such as to give any hope of improvement from operation. I think all the cases I have seen died, and the result appeared to be inevitable from the very beginning of the injury or when I first saw them.

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[1] See page 233 of the Journal.

Dr. Scudder: In the cases I have looked over recently I find that the weight of evidence is against surgical interference in these cases unless there is some definite lesion of the laminæ of the vertebræ. I have seen recently the microscopic sections made from two cases that were operated upon by laminectomy at the Massachusetts General Hospital (the sections were made by Dr. Taylor), in which I was very much struck by the fact that the dura was intact throughout the whole circumference of the cord. The microscopic findings in these cases have been described by Drs. Taylor and Lord in a report of the Boston Society of Medical Sciences.

I was also struck by the fact that in these cases the lesion of the cord was confined to the anterior surface of the cord, so that the surgeon upon removing the laminæ would detect no hemorrhage outside the dura, and would obtain no information as to the damage done. Moreover, could he have seen the anterior surface of the cord he could have done nothing to relieve the conditions present.

There is one surgical procedure that ought to be emphasized in this connection, and that is the immediate rectification of the deformity and the maintaining of the corrected position by plaster-of-Paris splint. Dr. Burrell ten or twelve years ago went over the cases at the City Hospital with reference to this method of treatment and its results, and he found that there is a certain number of cases with a distinct kyphos at the seat of the lesion, in which, by immediately correcting the deformity and holding it corrected, the symptoms have disappeared and the patients in a certain number of cases have recovered. Of course the number is few that have recovered. The procedure is, however, justifiable and is warranted by the facts.

Dr. Thomas: I will say in regard to Dr. Scudder's remarks, that I meant to include not the application of plaster-of-Paris, but extension when I spoke of replacement by hyperextension; and, of course, fixation should follow this, either by immobilizing the patient in bed by bags of sand, or by some other means. I think few surgeons would now advocate suspending the patient, because of the risk of injury in moving him about as much as that when practically the same results can be obtained upon a hammock by hyperextension or some such method as that.

Dr. J. L. Morse read a paper entitled

RENAL COMPLICATIONS OF THE ACUTE ENTERIC DISEASES OF CHILDHOOD.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, held at the Academy of Medicine, in New York City, May 9, 10 and 11, 1899.

(Concluded from No. 9, p. 221.)

Dr. Abraham Jacobi, of New York, read a paper on

FUNCTIONAL CARDIAC MURMURS.

From his observations of heart disease in children, who as a rule present a simpler problem than when we have to deal with the disturbing elements of adult age, Dr. Jacobi is convinced that real functional heart murmurs, murmurs due to faulty action of the valves or muscle without pathological change in the organ, are much rarer than formerly supposed. Recent studies of the myocardium show that its changes may sometimes give rise to murmurs. When the child's heart is developing the cavities enlarge, but the wall of the heart does not always grow thicker. During this period murmurs may be heard and they would appear to be due to myocardial insufficiency at certain times, constituting an organic, not functional, defect.

Dr. Howard S. Anders, of Philadelphia: I think Dr. Jacobi's paper and experience certainly has a tendency to clear the atmosphere. So far as my experience goes it has led me to the belief that the term "functional cardiac disease" can be largely done away with. Functional cardiac disease usually means relative insufficiency of one of the heart orifices; or if it means anemia we certainly have no reason to call it functional. If it is due to myocardial disease, or if there is an alteration in the constituents of the blood, the murmur is certainly not functional, but organic. It is far more accurate to call these diseases organic.

Dr. John C. Munro, of Boston: I hesitate to say anything in contradiction to what Dr. Jacobi said, but three years ago, in my surgical wards at the Boston City Hospital, I had the patients examined very carefully immediately preceding and following operation, regardless of the nature of the operation. Upon summing up our results, we found that a fair proportion of the cases — I cannot remember the exact figures — had a marked functional murmur (so-called) at the apex and base, with an accentuated pulmonic second sound during the period just preceding the operation, but within two or three days after the operation the murmurs disappeared. This was especially noted in women of the shop-girl class, in whom a murmur would rapidly appear when the operation was imminent, and disappear as rapidly if the operation was postponed or after its performance.

Dr. Harold Williams: It is customary to speak of those so called function murmurs as hemic and dynamic. There is no sufficient reason to believe that hemic murmurs really exist. Dynamic murmurs are, literally speaking, organic. This entire subject has excited much discussion, Dr. Prince, of Boston, examined many applicants for appointments as firemen and policemen and found that those who were very apprehensive suffered from a tumultuous action of the heart and had systolic murmurs which corresponded with all the requirements of regurgitant mitral murmurs. They were functional murmurs, due to interference with the function of the heart, and rapidly disappearing. He accounted for them by over-contraction of the left ventricle forcing the muscular mitral valve.

I have been struck by the presence of these functional murmurs in overtaxed hearts where the exact converse existed to what Dr. Prince found, namely, a too feeble contraction of the mitral valve. This too feeble contraction causes incomplete closure of the valve cusp and is consequently followed by mitral regurgitation. Thus it would seem that the so-called functional murmurs are really organic in that they are due to a temporary derangement of the organ. In the same way "organic murmurs" are functional in that their origin is a functional disturbance due to organic defect. It is therefore a question of nomenclature.

Dr. Jacobi: There undoubtedly are functional murmurs, and those alluded to by one of the speakers as occurring before operation and some of the others mentioned are certainly of that nature. There are functional murmurs of other kinds. For instance, now and then in severe cases of chorea you will get a heart murmur for a day or two, which then disappears only, perhaps, to appear and disappear again later, and such a changeable murmur is certainly functional. The fact should be borne in mind that murmurs produced in veins have been mistaken for heart murmurs. West, eminent though he was, frequently made that mistake. As far as so-called hemic murmurs are concerned, which are attributed directly to anemia, I do not believe that they exist. Even in pernicious anemia or in infantile scurvy no such murmur may exist. This would prove that anemia by itself does not produce such a murmur, but when the anemia is of long standing and has affected the structure of the tissues, we may have a murmur which is the result of malnutrition of the tissues of the heart and of the blood-vessels. We cannot expect to find a hemorrhage from the blood-vessels, no matter what the condition of the blood may be, unless there is an abnormal condition of the vessels themselves. When the blood-vessels become undernourished by the condition of the blood, then there will be a hemorrhage. Something similar I think is the relation between anemia and functional heart murmurs.

Dr. L. D. Judd, of Philadelphia, read a paper on

HYGIENICS OF THE SKIN.[1]

Dr. L. D. Bulkley: Dr. Judd has certainly brought out this subject well. His views, however, as based upon his experience, are so diametrically opposed to mine that I hardly know what to say. For many years both summer and winter, I have been wearing underclothing of Scotch wool next to the skin, and I have certainly derived more comfort and benefit from it than from cotton underclothing.

I also differ from the doctor somewhat in regard to the amount of bathing. As a young man I was very enthusiastic about the value and necessity of the daily bath, but after I had been practising medicine for some ten years, I read a paper by Hebra, my master in Vienna, in which he discountenanced the too free application of water to the skin, and showed that it was those who bathed most who suffered the most from skin diseases. My own experience since then has taught me that the two free use of water to the skin does harm rather than good.

Dr. C. C. Ransom: Dr. Bulkley has perhaps overlooked the fact that the majority of the patients he sees are suffering from skin diseases. I do not think there is any real connection between frequent bathing and the production of skin diseases. The Turkish bath attendant is often in the bath for hours, and he usually has a beautiful skin. Weakness from bathing I believe is due to the fact that the bath is unwisely taken.

Dr. W. Duffield Robinson, of Philadelphia, read a paper on the

CLIMATOLOGY OF NUDITY,

dealing with the subjects of light, heat and atmosphere. The author noted the neglect of light in medical climatology and the tendency to lay stress much more largely on air. In a previous paper Dr. Robinson showed to the Association the penetration of various fabrics by light. The author introduced his subject by considering the physics of light, its absorption by the body. He suggested that the rash, the blood engorgement of the skin, in measles, scarlet fever and erysipelas is nature's effort toward securing light, energy and effective oxygen compounds in the blood in the greatest quantities. Dr. Robinson suggests that quinine in solution, as it must be in the blood, absorbs ultra violet and violet waves of light, and speedily emits them in colors, fluorescence, and asks: Can quinine, carrying light, thus bring death to the malarial plasmodium and destruction to its toxins? As bearing on the power of the nude human skin to absorb all kinds of light waves, the successful photographing has been reported in absolute darkness of a nude subject just after he has been very freely exposed to a copious bath of strong sunlight. Photographers have to keep glass intended for coating for negatives in absolute darkness for long periods to insure the escape of absorbed actinic waves. Lupus has been cured by concentrated sunlight. Dr. Robinson contended that the x-rays are not a form of light; that true burns cannot be produced by them and that they are not bactericidal.

Dr. W. F. R. Phillips, of the Weather Bureau: I believe that in the future study of climatology greater advances will be made in the study of light than in the study of barometrical pressure. The two factors which we should study carefully in connection with climatology are heat and light, those two forms of energy which our organism appreciates most keenly, and which it can be demonstrated are effective upon us. It seems strange that the effect of light upon the organism has not been noted earlier, because even in the very oldest physiologies the statement is made that animals in the light absorb much more oxygen than they do in the dark; that hibernating animals, even when taken out of their abode while asleep, would absorb more oxygen than before they were taken out. Experiments upon human beings have shown the same thing. In the early seventies, when the fact was brought out that light was a bactericidal agent, attention was also called to the fact that oxygen and ozone, which are powerful oxidizing agents, were perfectly powerless in the dark. They must be exposed to light; otherwise they are perfectly inert. The early experimenters were of the opinion that exposure to light did not alter the chemical composition of fluids in which germs might be growing, but I think subsequent investigators have proven very conclusively that the exposure of a culture medium to light does so profoundly alter an ordinary medium that the germ which occupies it is no longer able to be active.

Dr. Solly: I am fully convinced of the value of light and its powerful influence in climate, and perhaps when one is considering the subject of high climate, it is one of the most important factors. Dr. Weber recognized this years ago, as well as many others. We must investigate these factors side by side, and we want to get facts about the different points, and not jump to the conclusion, because a man writes a paper on one part of a subject, that he means to limit his belief to that factor only, whether it be diminished barometic pressure, or heat, or light, or humidity, or what not. These factors are closely interwoven, and it is only by taking each one singly that we can disentangle the meshes. I do not refer to the meshes to which Dr. Judd called our attention yesterday.

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[1] See No. 5, page 104 of the Journal.

Dr. Wm. M. Gibson, of Utica, presented a paper on

THE BEARING OF EMBOLISM ON THE COURSE OF VALVULAR HEART DISEASE.

After general consideration of mitral disease, cerebral and pulmonary embolism and venous thrombosis, the author cited a case of cystic kidney and accompanying inflammatory tissue having origin by embolism from endocardial inflammation; also a case of mitral regurgitation in which an area of skin on the left thigh and the outer surface of the right leg showed small infarctions and a low state of nutrition bordering on gangrene for weeks. The tax suddenly thrown on compensation by the occurrence of gangrene is very liable to produce extreme dilatation even if the patient rallies against the general effects of septicemia.

Dr. Gibson cited a case of mitral stenosis of long standing in which sudden gangrene of the right foot and leg developed after an attack of influenza and right lobar pneumonia. Amputation above the knee arrested the gangrene and the stump healed kindly; but a recurrence of pneumonia, probably embolic, proved too much for the patient's strength. An examination of the amputated leg disclosed an organized clot nearly two inches long at the bifurcation of the popliteal artery. Dr. Gibson also furnished the history of a remarkable case of embolism of the mesenteric artery following fracture of the humerus caused by a fall from a bicycle. The patient was a man seventy years old, who had had several attacks of acute rheumatism in a period of thirty years, but had escaped endocardial disease until the winter previous to his injury. An exploratory laparotomy revealed a gangrenous fold of intestine due to embolism, which had occurred with violent symptoms on the day following the injury. Death occurred on the third day.

Dr. H. L. Elsner, of Syracuse, read a paper on

THE CARDIAC ASTHENIA OF PNEUMONIA.

The author believes that too much attention has been directed to the heart alone, disregarding entirely the condition of the peripheral vessels, particularly the arteries. Taking up the various drugs the author believes that the indiscriminate use of nitroglycerin is a growing evil with the profession in this country, especially as applied in cases of pneumonia. The writer has seen patients treated with some of the numerous cardiac tonic tablets now found in profusion on the market, all of them containing digitalis with nitroglycerin and a variety of other so-called heart tonics, and exhibiting the most alarming cardiac and respiratory insufficiencies, with rapidly lowering arterial tension. Dr. Elsner cautioned against the use of veratrum viride, but advocated strychnia and digitalis.

Dr. Elsner's method consists in administering every fifteen minutes fifteen drops each of the compound spirit of ammonia, the compound spirit of lavender and the tincture of valerian. This is kept up day and night until the pulse shows improved tone and the heart action is decidedly better. Valerian may be omitted if not retained and whiskey or brandy substituted. Spartein sulphate in quarter-grain doses with four to six grains of caffein are given every two, three or four hours. Tokay wine was recommended. Dr. Elsner was doubtful about the value of oxygen and considered its usefulness as yet unsettled.

Dr. Walker: I have had such satisfactory results with nitroglycerin in pneumonia, first using it at the suggestion of Dr. Da Costa, that I wish to say a word in its defence. In my experience it has benefited these patients more than all the ammoniacal stimulants. I remember a very severe case of pneumonia which I saw about two years ago. The patient was a boy. I gave him one one-hundredth of a grain of nitroglycerin every two hours for at least two weeks with nothing but beneficial results. I recall another case, a lady who came to Philadelphia from Winchester. During her visit she developed pneumonia and her physician said she could not possibly recover. Under the use of nitroglycerin, however, the heart improved and the patient made a good recovery

I wish to mention another therapeutic agent which I have found of great service in cardiac asthenia, and that is dry cupping. My patients are dry cupped as long as the engorgement persists and whenever new pains occur.

Dr. Curtin: Nitroglycerin loses its effect in about three hours. In order to have a continuous effect, the dose should be repeated every two or three hours.

Dr. Judson Daland: I recently had an opportunity to make some experiments with digitalin on an individual who was in normal health, with the exception of a slight bronchitis. I increased the dose of digitalin (Merck's) until the patient was taking one-quarter of a grain every four hours, and the drug produced almost no effect.

Dr. Babcock: I have no doubt that theoretically Dr. Elsner's treatment is successful and practically he has accomplished what he wished to. But we have all seen cases of pneumonia with paresis of the capillaries, in which nitroglycerin has been of the greatest benefit. It depends on the way in which it is used. As pointed out in the admirable paper of Dr. H. C. Wood about a year ago, nitroglycerin, in doses of one one-hundredth of a grain, placed on the tongue, is a very valuable heart stimulant, whereas larger doses will do harm. In larger does it is a cardiac paralyzant, while in small doses it indirectly stimulates the heart's action. In these cases of capillary paresis we have all seen the benefit of digitalis, strychnia and nitroglycerin, but not until the latter has been added.

Dr. Jacobi: Digitalin, which I first tried many years ago, I regard as a useless product.

Dr. Elsner: I expected, in presenting this paper, to meet with adherents of the nitroglycerin treatment. I dare say that in the majority of the cases which are cited the nitroglycerin was given in connection with other remedies which we know are effective heart stimulants, that is, strychnia and digitalis.

Dr. L. D. Judd, of Philadelphia, presented a paper entitled

REMARKS BASED UPON A FURTHER EXPERIENCE OF THE USE OF CALOMEL IN DIPHTHERIA.

Dr. Harold Williams, of Boston, read a paper entitled

THE EFFECTS OF VIOLENT AND PROLONGED MUSCULAR EXERCISE UPON THE HEART.

His paper consists of the report of examinations held upon long-distance runners and of a study based thereon of the effects of such violent and prolonged exercise upon the heart. The paper includes preliminary studies made upon athletes immediately before and after long practice runs, and a detailed study of the results of an examination recently held upon Marathon runners. In this examination records were made of the weight, pulse, temperature, respirations, urine and heart, before and after the race. The significance of heart murmurs heard in the second left intercostal space and their diagnostic value are discussed at some length. The conclusions arrived at are: The fallacy of general statements made in regard to the effects of exercise upon the heart; the importance that every heart and every form of exercise should receive special consideration; and that the effect upon the heart of such long-distance running as is described in the paper is chiefly to be regarded as a participation of the muscular stricture of the left ventricle and its muscular mitral valve in the resulting general muscular exhaustion.

One of the runners in this contest presented some very interesting features. After a practice run of five miles he showed a temperature of 98°, pulse 100, respiration 32, a faint trace of albumin and a sphygmographic tracing of high arterial tension. After the twenty-five-mile race he showed a loss of 4.9° in temperature and four and a half pounds in weight, respiration 24, one tenth per cent. of albumin with numerous casts, and a pulse of 104 and of exceedingly low tension. All the runners showed an extreme condition of general muscular exhaustion. A significant fact was that those who won first and second place had no murmurs, while others had murmurs after the race. The greater the muscular vigor the less the liability to murmur.

DR. JOHN C. MUNRO, of Boston, read a paper on

EMPYEMA FROM A SURGICAL STANDPOINT.

In the first place, he advocated the use of ether as an anesthetic, although he used chloroform in double empyema in children where struggling and coughing must be reduced to a minimum. The author has had delayed expansion or incomplete permanent expansion in both pneumococcic and streptococcic empyemata, but where the operation has been done soon after the formation of pus immediate expansion has taken place in both types, although, as a rule, complete expansion is more likely to be slower in the pneumococcic cases, that is, full resonance is not noted before several weeks. The deaths in Dr. Munro's cases have come from embolus from hearts displaced by a left pleural cavity filled with pus; from a relapse or an extension of a pneumonia, and in the streptococcic cases from a rapid general infection. The latter cases are occasionally so rapidly fatal that no matter how early the cavity is emptied nothing is of avail.

DR. V. Y. BOWDITCH: I agree with the reader of the paper so thoroughly that I have little or nothing to add. It has always been my custom to refer the case to a surgeon for operation at once if pus is found in the pleural cavity, unless it be a case of pyopneumothorax in conjunction with advanced phthisis, in which case I question whether a permanent opening is advisable from the fact that it is merely an additional source of discomfort to a hopelessly ill patient and occasional aspiration may be sufficient to relieve urgent symptoms. With regard to the use of the pneumatic cabinet, I have had no experience with it in empyema, but it suggests itself as a valuable adjunct in the expansion of the lung. I should like to hear from those who differ from Dr. Munro about the advisability of immediately operating when pus is found.

DR. HAROLD WILLIAMS suggested that perhaps the unfavorable results which have been reported were due to the manner in which the anesthetic was given rather than to the anesthetic itself.

DR. HOWARD S. ANDERS read a paper on

THE RELATION OF LOCAL METEOROLOGICAL CONDITIONS TO THE INFLUENZA EPIDEMIC IN PHILADELPHIA IN THE WINTER OF 1898–1899.

He has made a careful study of the atmospheric pressure, mean monthly temperature, maxima and minima, the mean daily range and mean variability, the relative humidity, the precipitation, the prevailing direction, total movement and velocity of the wind and the general weather conditions during the months of October, November, December and January for the years 1895 to 1899 inclusive. Dr. Anders shows that during November and December, 1898, there were several volleys of attack, as it were, in which influenza suddenly overcame numbers of people for three or four days or a week and then seemed to subside to a degree to be followed by other exacerbations and remissions of invasion; these attacking periods were invariably preceded by sudden thaws, thick ill-smelling fogs and relatively warm, moist and calm weather; they were apparently introduced by cold, clear, dry and windy weather. These changes appeared to be unusually sudden, extreme, frequent and rapid. Fogs were noted. The conclusions are still uncertain.

DR. GUY HISNDALE, of Philadelphia, read a paper on

THE COLD WAVE OF FEBRUARY.

After tracing the meteorological conditions leading up to this cold wave, which was a continuation of three distinct waves, he showed the effect on the community in the loss of life by which 104 persons perished between January 29th and February 13th. Twenty-four of these died in Colorado by freezing and by avalanche; in Texas 15; in Pennsylvania 11, and in New York 10. The hardships from scant food and fuel supply were more widespread than in any other cold wave of which we have records in this country.

The new record established for Washington was — 15°, — 7° at Baltimore and — 6° for Philadelphia.

The snowfall in Philadelphia began on February 11th at 9 P. M., and continued until the 14th at 1 A. M., during which time 18.60 inches fell. The wind was from the northeast and blew at times at the rate of sixty miles an hour. The lowest barometer was 29.92 inches. The estimated monetary loss in Philadelphia was $2,500,000, and in the country at large $20,000,000. Food rose in price and there was a shortage in meat, coal, milk, fresh vegetables, oysters, fish and flour. The financial loss was incalculable.

One of the most remarkable phenomena was the flow of ice down the Mississippi River on the 17th of February past New Orleans and into the Gulf of Mexico, an event never before witnessed during the memory of man. Ice an inch thick formed at the mouth of the Mississippi, in East and Garden Island Bays and the temperature fell to 10° on the 13th. Another phenomenon was the fall of snow at Jacksonville, Florida.

DR. R. G. CURTIN, of Philadelphia, read a paper on

CARDIO-ESOPHAGEAL GUSH AND CLICK SIMULATING A HEART MURMUR.

The author believes them to be extrapericardial, esophageal. They are synchronous with the action of the heart and as far as the author knows, not heretofore described. In one case the sound was more distinctly heard when the ear was held in front of the open mouth than when applied to the chest. It sounded like a short gush of air from the throat modified by the upper air passages giving it a low-pitched, grunting sound. The sound continued while the patient was talking and breathing. In some of the other cases the sound could be heard across the room or further.

Dr. E. O. Otis, of Boston, read a paper entitled

NOTES ON TUBERCULIN TEST.

Dr. Langmaid: In the early days of tuberculin I saw a striking example of the injurious effects following its injection. Unknown to me, five or six patients in my service at the Massachusetts General Hospital were injected with the remedy, and shortly afterwards in passing through the ward, I noticed that something was amiss with the larynges of those patients. I had never before seen a larynx in such a terrible condition. My assistant then informed me that he had been induced to allow the injection of tuberculin to be made in a number of my patients. I therefore immediately forbade its further use in my clinic. Since then, of course, the tuberculin has been much modified.

I would like to ask Dr. Otis what the outcome was in the cases of cervical adentitis in which the tuberculin was used? Did the patients show any subsequent evidences of tuberculosis in the bones or in any other tissues of the body? Suppose he does get the evidences of tuberculosis in these cases of cervical adenitis, what does he expect the future course of such patients will be? What will be the outcome of these tubercular patients?

Dr. Otis: The primary object of this series of observations was in order to determine, if possible, what proportion of cases of enlarged glands in the neck were tuberculous in character. The only one I could find who had investigated this subject was Valland, and his evidence seemed to me unsatisfactory. The result of the injections in the various cases indicated in a measure the treatment. Valland and others are of the opinion that tuberculosis which manifests itself at first as a cervical adentitis frequently goes on to pulmonary tuberculosis.

The injections were made principally on hospital patients and were not objected to and no bad results followed.

Quinine in the United States Army. — We learn from the *Medical News* that more than 125,000,000 grains of quinine have been taken by United States soldiers during the past year. It is said that some of the military patients in the army hospitals in Cuba and Puerto Rico took as much as 300 grains a week during several weeks. Hardly any of those who were in service in the West India Islands failed to take some quinine during their stay. A military correspondent writing from Puerto Rico recently said that practically none of the soldiers had been entirely exempt from malarial disturbances on that island and that while the malaria was usually not severe it was very obstinate.

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PROPHYLAXIS AGAINST SMALL-POX.

With the continued prevalence of sporadic cases of small-pox, particularly in view of approaching colder weather, it would seem that every possible measure should be taken to prevent its spread. The power to accomplish this end lies largely with the boards of health of the several States, who should certainly have the warmest support of the people at large. That such support is usually lukewarm until actual danger threatens we know too well, but the importance of the matter evidently demands that all legitimate means should be taken to instruct the people, without alarming them unduly, in regard to the nature of the disease and methods of its prevention, beyond the mere fact of vaccination.

We are glad to call attention, in this connection, to an excellent circular printed and distributed by the State Board of Health of Indiana which is calculated to do much good in the way of educating the masses of the people in matters about which they are more than likely to gain erroneous opinions from the daily press. The circular of four rather finely printed pages is addressed to the people of Indiana, and is headed "Small-pox and its Prevention." The language is direct and simple and calculated to attract the attention of any one into whose hands it may come. It is stated that the disease has already appeared in twenty-six counties of the State, with a total number of nearly three hundred cases, of which, however, only four have thus far been fatal. The fear is expressed that with the coming of cold weather the disease will assume a more virulent form, and vaccination is urged before this possibility becomes a fact. The circular then goes on to state that if properly done there is no danger in vaccination, and describes briefly the process of vaccination, and the nature of the lesion resulting when it is successful, with the general causes of sepsis from careless after-treatment. All this seems to us an admirable method of winning the confidence of those who need vaccination, and whose minds are sure to be distorted by the folly of the antivaccination fanatics.

Following this is a statement as to the differential diagnosis of small-pox, warning against the possibility of mistaking it for chicken-pox. The lesions are described in perfectly simple language and their peculiarities insisted upon, with the added warning that it is safer to err on the side of over-caution in a matter of so much importance to the health of the community.

The remainder of the circular is taken up with directions regarding isolation, care of the sick-room, disinfection and, finally, by an address, put in concise form, to the public by the Indiana State Medical Society, upon the prevention of tuberculosis and small-pox. Regarding small-pox, the Society makes the following appeal:

"That the ordinary sanitary measures thoroughly applied, though of the highest value and by no means to be neglected, have nevertheless not proven sufficient to control the spread of small-pox; that in vaccination and revaccination accurately and thoroughly applied there is an almost absolute preventive of small-pox; that though with the lapse of years after succcessful vaccination the protective influence may decline and small-pox may be contracted, the disease is robbed of most of its dangers; that properly applied, in the hands and throughout under the direction of competent physicians, vaccination is attended with but insignificant risks, the disease-preventing and death-preventing effects vastly outweighing such risks; that upon the basis of these convictions, the State Medical Society does invite and urge the public to a full confidence in the preventive value of vaccination against small-pox, and does urge the public to relax in no direction its vigilance in the carrying out of this disease-preventing and life-saving measure."

This action of the Indiana Board of Health should be followed by other States in which small-pox has appeared or is threatened. There can be no question that the disease is propagated through the ignorance of the people, and sometimes, let us add, of physicians, as to the nature and physical appearances of the affection. Our own experience in Massachusetts bears this out. Not infrequently during the last few months cases have been discovered relatively late in the course of the disease, after affording ample opportunity for its transmission to others. This danger is enhanced by the mildness of the affection, as recently manifested.

Since this is so, and since for various reasons cases are apt to go unrecognized and thereby become a menace to others, it is the part of policy for those in authority to disseminate knowledge which will tend to minimize this danger. By this means it is probable that a much more ready recognition of the disease would be attained, inasmuch as the people would tend to become interested and to co-operate more fully with the appointed guardians of the public health than is at present the case. We hope that other States will see fit to follow in the footsteps of Indiana, for in the case of small-pox public education means a more successful prophylaxis than is likely to be attained by law and compulsion.

AN ARMY SANITARIUM FOR TUBERCULOSIS.

By direction of the Secretary of War, the Surgeon-General of the Army has recently been authorized to establish a general hospital at Fort Bayard, N. M., as a sanitarium for the treatment of officers and enlisted men of the army suffering from pulmonary tuberculosis, and hereafter transfers of enlisted men suffering from that disease may be made to the new hospital upon the recommendation of medical officers of the army. Orders have been issued to the quartermaster's department to put in a good state of repair such buildings at Fort Bayard as the surgeon-general may designate as necessary for the establishment of the hospital. The surgeon-general is also authorized to provide for the care and treatment of discharged soldiers entitled to the benefits of the United States Soldiers' Home, Washington, D. C, who may be sent to the sanitarium by the Board of Commissioners of the home. The expenses for the maintenance of such discharged soldiers will be paid from the funds of that institution.

The establishment of this sanitarium is the logical outcome of the practice which has prevailed since 1892 of transferring soldiers in the early stages of phthisis to the various military stations in Arizona, New Mexico and Southern California, in order to give them the advantage of a more favorable climate. While no large number has been so transferred, the results have been sufficiently favorable to warrant the action just taken — about twenty per cent. of such transfers having been followed by recovery, while the progress of the disease has been arrested in a large proportion of cases. Heretofore, these phthisical individuals were scattered among the posts of Apache, Huachuca, Grant, Bayard and the barracks at San Diego, and their treatment was merely incidental to the routine hospital work at these stations. This practice presented obvious disadvantages, both to the patient and those with whom he was placed in contact, and it is believed that under the new system considerably more favorable results may be anticipated. It will be remembered that the abandoned military reservation of Fort Stanton, N. M., was a few months since transferred to the Interior Department for use by the Marine-Hospital Service in the treatment of consumption, and it seems rather unfortunate that these two sanitaria, only a short distance apart, could not be combined into one large establishment, instead of being maintained as separate institutions. At present the navy, in which a high proportion of pulmonary tuberculosis necessarily exists, has no place for the reception and scientific treatment of the incipient consumptive, nor has its enlisted force the numerical strength to warrant the establishment of a third institution of this character to meet its particular needs. It would seem, therefore, as if both reason and economy demanded a single large Government sanitarium, modelled on the plan so successful in its workings at the Army and Navy General Hospital at Hot Springs, Ark., where are admitted the officers, cadets and enlisted men of the military and naval service, the officers of the Revenue-Cutter Service and Marine-Hospital Service and the honorably discharged soldiers and sailors of the regular and volunteer army and navy. This hospital has been ably administered and well patronized, and shows that there need be no disadvantage or official friction where patients are derived from various sources. A favorable climate is recognized as the most powerful factor in inducing recovery in tuberculosis, and provision should be made by which all classes entitled to receive medical attendance from the Government should be equally favored in this respect. The multiplication of establishments for this purpose is needlessly expensive, and if consolidated under one head, preferably a medical officer of the army trained for the position by previous command of one of the immense military hospitals which have been in constant operation since the outbreak of the war with Spain, their capacity for good would be increased and an excellent administration assured.

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A SIGN OF PROGRESS.

It will be remembered that a few years ago Dr. Weir Mitchell published a vigorous protest against the lack of productiveness in research work of large institutions, chiefly of those devoted to the care of the insane. He pointed out that in spite of the best possible opportunity, practically nothing had been accomplished up to the time at which he wrote. The suggestions made by Dr. Mitchell were not all graciously received, but they undoubtedly had a certain effect, as unpleasant suggestions are apt to, in arousing men engaged in institution work to a renewed sense of their possibilities. In any case, whatever the reason may have been, it takes no very critical eye to see that a change of far-reaching character has been introduced and is becoming more and more evident each year. This has been demonstrated in several ways. First and most important, by the appointment of trained men to positions in institutions at which patients remain for long periods of time. It is being clearly recognized that the duties of institution physicians are much broader than is implied in the mere physical care of those entrusted to them. If the hospital completely fulfils its function, the patients must be studied by those who have ample time and training for such study, and this should be continued into the post-mortem room and laboratory. As a result of this growing feeling pathologists have been appointed, and with these appointments the whole spirit of institution life has changed. They have developed, in many cases, into prolific fields of research, to the lasting benefit of the patient, as well as to the cause of science. In other words institutions have become hospitals and not merely asylums, a term which we find everywhere, and rightly, falling into disuse.

With the development of the spirit of research has naturally and inevitably come the growth of the laboratory, as a necessary adjunct to all well regulated hospitals. Apart from the individual laboratories which now exist in nearly all of our institutions, we have, within the last few years, seen a plan take root and grow in New York City, under the direction of Dr. Ira Van Gieson, which is without doubt destined to prove of incalculable value to the development of investigation in the insane hospitals of New York State and of the whole country. We refer, of course, to the Pathological Institute of the New York State Hospitals. In this we have a central station, to which members of hospital staffs may come to learn methods, and from which they go to carry out work in the several institutions to which they may belong, the associates of the laboratory itself meanwhile devoting themselves particularly to the various problems which psychiatry and allied sciences present.

As a natural consequence of this new enthusiasm, the need has grown for a means of publication of the results of research. This has led, on the part of New York State, to the publication of the *Archives of Neurology and Psychopathology*, an admirably edited and printed quarterly, to which we have previously had occasion to refer in these columns. Individual institutions are following this example, and we may expect to see a constantly growing number of such publications as time goes on. For example, as we write, we have before us a volume of 236 pages, done in the very best style of the bookmaker's art, entitled "The Bulletin of the Ohio Hospital for Epileptics," and edited by Dr. A. P. Ohlmacher, who is also the chief contributor. In it Dr. Ohlmacher presents the results of his researches on the pathology of epilepsy, a paper of much importance, with various collateral matters of more than usual interest. The only regret is that such an admirable publication should not have a wider circulation.

We regard it as a most hopeful sign of the times that opportunities are now everywhere being grasped, that valuable material is being used, instead of being almost universally neglected, as was the case not many years ago. We are gradually learning the lesson that the institution which deals with more or less fixed patients suffering often from chronic disease is the place of all others for the investigation of some of the most subtle and important problems of medicine. Dr. Mitchell's protest could not have been uttered at the present time, true as it may have been when he wrote, for now some of our very best work is coming from the institutions he was holding up to criticism, and more is sure to follow. This fact certainly marks a significant step in advance.

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MEDICAL NOTES.

Danger of Epidemics in Porto Rico. — Owing to the appalling loss of life from the storm in Porto Rico, the sanitary condition of the island is thought to be in a dangerous state and a serious epidemic of disease is feared.

A New Building for McGill University. — We learn from *Science* that McGill University proposes to erect at the cost of $70,000 a building for its departments of hygiene, pharmacology and medical jurisprudence. In the medical department of this university Dr. T. W. Burgess has been appointed professor of mental diseases.

Yellow Fever in Florida. — It is reported that between twenty-five and thirty cases of yellow fever have occurred at Key West, though not in a virulent form. A careful house-to-house canvass is being made and strict quarantine regulations established. It is probable that the number of cases is increasing, but the situation can no doubt be held in control.

Insanity in England. — The recently issued annual report of the English Commissioners in Lunacy shows, according to the *Medical Record*, a great increase in insanity in England and Wales. On January 1st of the present year there were 105,086 persons adjudged insane, an increase of 3,114 over the previous year. The increase occurred among those of all social grades, being greatest, however, among paupers. It is thought a Government inquiry will be made into the causes of this increase.

The New Pathological Museum at Berlin. — The *Philadelphia Medical Journal* states that the completion of the magnificent new museum of pathological anatomy in connection with the Royal Charité Hospital may be regarded as one more triumph of its illustrious director, Professor Rudolph Virchow, and as significant of the wonderful strides that have been made in this branch of medical science at Berlin in the past as well as of the brilliant promise of the future.

Medical Students in the Swiss Universities. — According to the *British Medical Journal*, the total number of students of medicine in the universities of Switzerland in the summer semester of 1899 is 1,153, of whom 344 are women; of these only 25 are Swiss. The students are distributed among the several universities as follows: Basel has 128, of whom 3 are women; Berne 247, of whom 87 are women; Geneva 277, of whom 90 are women; Lausanne 151, of whom 41 are women, and Zürich 350, of whom 123 are women.

BOSTON.

Acute Infectious Diseases in Boston. — For the week ending at noon, September 6, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 45, scarlet fever 14, measles 1, typhoid fever 34.

The Boston Floating Hospital. — The trips of the Floating Hospital have been discontinued after a very successful season.

NEW YORK.

The Heaviest Patient on Record. — Perhaps the largest patient ever received at Bellevue Hospital was a trombone player, thirty-four years of age and weighing four hundred pounds, who was taken there on September 2d, suffering from hemiplegia. It required eight men to lift him from the ambulance, and in the ward to which he was taken two cots were lashed together and especially braced to sustain the man's weight.

Gymnastics in the Vacation Schools. — A pleasing feature of the winding up of the vacation schools was the first annual gymnastic tournament of the pupils of the public playgrounds and open-air gymnasiums maintained by the Board of Education, which was held at Crotona Park, in the Borough of the Bronx, on September 1st. This is an entirely new branch of public-school work, and the exhibition attracted much interest. There were entered thirty-two teams of ten boys each, who did work on the vaulting bar, parallel bars, combination ladder, and tumbling mats. There were also some boxing and wrestling matches.

A Family Treated for Rabies. — A whole family, consisting of father and mother, and three children, who were recently bitten by a pet dog, believed to be suffering from rabies, at their home in Hamesford, Ontario, has been received at the New York Pasteur Institute for treatment.

ARMY NOTES.

Eucalyptus and Malaria. — Investigations, under orders from General Brooke, have been instituted in Cuba with reference to the eucalyptus globulus as an antimalarial agent. This tree, which is largely planted in the Roman Campagna and by the French in Algeria, is said to have rendered former malarial districts much less unhealthful. The city of Mexico is cited as another instance, where the Vigo Canal, the floating gardens and other malarial districts are now well stocked with young trees, with the result that places which were once marshy and unhealthful have been rendered dry and salubrious. General Wood is reported to have strongly endorsed a requisition for these trees for Santiago.

Increase of Hospital Facilities in the Philippines. — The chief surgeon at Manila has been directed to take immediate steps looking to the enlargement of hospital facilities in the Philippines to conform to the increased force of 63,000 men which it is expected will be available for duty in December. As the time required for the erection of large frame hospitals, such as were erected in this country at Hampton, Savannah and San Francisco, is at least six months, it will be necessary to depend upon buildings already constructed, supplemented by tent hospitals. For the latter purpose 500 hospital tents, in addition to those already in Manila, have recently been forwarded, and the chief surgeon has been instructed to have these hospitals in readiness prior to the arrival of the newly raised volunteer troops from the United States.

An Army Medical Examination at Manila.— Recent orders constitute the medical officers on board the hospital ship *Missouri* into an examining board, for the purpose of passing upon the merits of candidates for commissions in the medical corps now serving in the Philippines. At the last examination, held during the past winter, the medical men serving in the *Orient* were debarred by distance from appearing as candidates. There are now several existing and anticipated vacancies in the corps and these Surgeon-General Sternberg has justly decided should be filled from the score or more applicants who have rendered such valuable service at the front. The examining board is directed to convene as soon as Manila is reached.

Movements of the Army Hospital Ships. — The army hospital ships *Relief* and *Missouri*, now at San Francisco and New York respectively, will leave for Manila about the end of August. The *Relief* carries a full load of medical stores and a detachment of twenty female nurses. The *Missouri*, now being refitted for the trip, will sail *via* Suez, carrying a large amount of medical supplies, a number of medical officers and a detachment of the hospital corps, numbering one hundred and fifty men.

Illegitimacy in the British West Indies. — The report of the registrar-general for the island of Jamaica, for the year 1898, deplores the falling of in marriages among the poorer classes, the rate per 1,000 population having undergone a steady annual decrease from 5.5 per 1,000 in 1891 to 3.7 in 1898. This is a discouraging indication of the social conditions on the island but is consistent with the high and increasing rate of illegitimacy, since of the 28,447 births no less than 17,729 — or 62.3 per cent. — occurred out of wedlock. In 1897 the proportion of illegitimacy was 61.1 per cent., this figure being much above the average for the preceding decade. The proportion of deaths of legitimate and illegitimate children under one year old to each 100 births of same was 13.87 for the former and 20.08 for the latter. The report compares the illegitimacy in Jamaica with that of the other British West Indian colonies, using the latest statistics, showing the rate of illegitimate births per 100 births as follows: British Guiana, 72.6; Dominica, 69.5; Antigua, 68.5; Jamaica, 62.3; St. Lucia, 59.38; Trinidad, 58.1; St. Vincent, 56.4; Grenada, 49.63; British Honduras, 36.73; Bermuda, 13.2. In Jamaica the blacks outnumber the whites in the proportion of 44 to 1, and are said to be largely relapsing into the semi-barbarous state prevailing among the blacks of San Domingo and Haiti. The low amount of illegitimacy in Bermuda corresponds with the unusually small proportion of venereal disease noted among the British troops on that station.

A Recent Medical Requisition. — An idea may be obtained of the magnitude of the work of the medical department in the Philippines from a requisition for medical supplies made by the chief surgeon of the troops now serving in those islands. The requisition, recently received and filled, included 540 items, among them being 10,000,000 quinine tablets; 7,500,000 grains of quinine in bulk; 20 tons of epsom salts; 5,000 bottles of paregoric; 3,000 bottles of iodoform; 8,000 bottles of collodion; 5,000 bottles of chloroform; 2,500 tins of ether; 10,000 quarts of whiskey and 7,000 quarts of alcohol. There were also 600,000 compound cathartic pills; 1,000,000 tablets of strychnine; 1,600,000 tablets of salicylate of soda; 12,000 yards of mustard plasters; 3,000 yards of adhesive plaster; 50,000 yards of plain gauze; 5,000 yards of unbleached muslin; 50,000 sterilized bandages; 96,000 roller bandages and 4,000 pounds of absorbent cotton. The order also included 5,000 pieces of each kind of crockery and cutlery necessary to equip hospital mess tables.

RECORD OF MORTALITY

For the Week ending Saturday, August 26, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	—	—	—	—	—	—	—
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis . . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	219	96	18.86	9.66	12.42	1.84	.46
Baltimore . .	506,389	187	74	30.21	4.77	23.32	3.01	2.65
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	—	—	—	—	—	—	—
Washington .	277,000	114	36	30.80	11.44	11.44	12.32	4.40
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	25	—	72.00	36.00	64.00	—	—
Nashville . .	87,754	45	22	20.00	13.00	15.55	2.22	2.22
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	108,240	39	21	51.20	2.56	43.52	—	5.12
Fall River . .	95,919	50	28	52.00	8.00	52.00	—	—
Cambridge . .	89,724	33	17	33.33	3.03	24.24	3.03	—
Lowell . . .	88,641	28	15	46.41	17.85	42.84	—	—
Lynn	66,703	—	—	—	—	—	—	—
New Bedford .	66,340	20	9	35.00	5.00	35.00	—	—
Somerville . .	66,101	21	7	23.80	4.76	23.80	—	—
Lawrence . .	57,263	26	12	22.10	22.16	19.25	—	3.85
Springfield . .	56,501	14	4	35.70	—	21.42	7.14	—
Holyoke . . .	43,424	17	11	58.80	5.88	52.92	—	—
Brockton . .	37,278	6	4	33.33	—	33.33	—	—
Salem	36,883	17	10	35.28	—	23.52	5.88	5.88
Malden . . .	34,613	3	—	—	—	—	—	—
Chelsea . . .	33,468	10	2	10.00	—	—	10.00	—
Haverhill . .	32,022	7	1	14.28	14.28	14.28	—	—
Gloucester . .	30,589	11	6	—	—	—	—	—
Newton . . .	29,716	5	3	20.00	—	20.00	—	—
Fitchburg . .	29,438	10	6	30.00	10.00	20.00	10.00	—
Taunton . . .	28,167	14	3	21.42	7.14	21.42	—	—
Everett . . .	25,338	4	4	50.00	—	25.00	—	—
Quincy . . .	23,549	9	6	66.66	11.11	66.66	—	—
Pittsfield . .	22,643	5	1	—	—	—	—	—
Waltham . .	22,296	6	2	33.33	—	—	16.66	—
North Adams .	20,971	2	2	—	—	—	—	—
Chicopee . .	17,842	8	2	12.50	12.50	12.50	—	—
Medford . . .	16,511	6	2	—	16.66	—	—	—
Newburyport .	14,915	5	3	60.00	—	60.00	—	—
Melrose . . .	14,032	2	—	—	—	—	—	—

Deaths reported 981; under five years of age 407; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 301, consumption 86, acute lung diseases 45, diarrheal diseases 230, typhoid fever 32, diphtheria and croup 18, whooping-cough 8, cerebro-spinal meningitis 8, scarlet fever 3, small-pox 1.

From whooping-cough Boston 4, Washington and Providence 2 each. From cerebro-spinal meningitis Boston 3, Baltimore, Washington, Worcester, Holyoke and Waltham 1 each. From scarlet fever Boston, Lowell and New Bedford 1 each. From small-pox Boston 1.

METEOROLOGICAL RECORD

For the week ending August 26th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...20	29.81	76	81	70	81	84	82	S.W.	S.E.	3	1	O.	O.	
M..21	29 87	68	73	63	80	100	90	N.E.	E.	3	12	O.	G.	1.41
T...22	29.89	66	69	63	95	96	96	S.E.	S.E.	5	4	O.	F.	.01
W..23	29.96	66	69	64	96	92	94	N.E.	N.E.	4	5	O.	O.	
T...24	30.01	64	65	62	97	99	98	N.E.	N.	14	9	O.	O.	.02
F...25	30.04	66	70	63	85	90	88	E.	S.E.	5	5	O.	C.	
S...26	30.15	65	70	60	80	70	75	N.E.	E.	12	2	O.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 2, 1899.

E. R. Stitt, passed assistant surgeon, detached from the Bureau of Medicine and Surgery, September 25th, and ordered to the "Hartford."

W. M. Garton, assistant surgeon, detached from the "Annapolis," when placed out of commission, and ordered to the Naval Academy. Order of August 28th modified: when detached from the "Annapolis" ordered to the Norfolk Navy Yard for duty on the "Franklin," instead of to the Naval Academy.

I. N. Hurd, pharmacist, detached from treatment at the Naval Hospital, Mare Island, Cal., and granted sick leave for three months.

J. C. Rosenbleuth, passed assistant surgeon, detached from the "Nashville" and ordered to the Naval Hospital, Chelsea, Mass., for treatment.

M. S. Guest, passed assistant surgeon, detached from the Boston Navy Yard and ordered to the "Wabash."

H. A. Dunn, assistant surgeon, detached from the Washington Navy Yard, September 2d, and ordered to the Port Royal Naval Station.

A. Stuart, assistant surgeon detached from the Port Royal Naval Station, September 2d, and ordered to the "Yankton."

D. B. Kerr, assistant surgeon, detached from the "Yankton" and ordered to the "Marietta" upon report of relief.

M. K. Johnson, assistant surgeon, detached from the "Marietta" and ordered to the "Nashville."

R. Waggener, pharmacist, ordered to the Army and Navy General Hospital, Hot Springs, Ark., for treatment.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING AUGUST 24, 1899.

Carmichael, D. A., surgeon. Granted leave of absence for thirty days. August 23, 1899.

Wasdin, Eugene, surgeon. To proceed to Marshall, Va., on special temporary duty. August 18, 1899. Detailed as delegate to the International Medical Congress to meet at Brussels, Belgium, September 4, 1899. August 21, 1899.

Pettus, W. J., surgeon. Granted leave of absence for one day. August 19, 1899.

Stimpson, W. G., passed assistant surgeon. Granted leave of absence for thirty days from August 19, 1899. August 18, 1899.

Oakley, J. H., passed assistant surgeon. To proceed to Paducah, Ky., on special temporary duty. August 21, 1899.

Wickes, H. W., passed assistant surgeon. Granted leave of absence for ten days. August 23, 1899.

Fricks, L. D., assistant surgeon. Detailed as inspector of unserviceable property at Norfolk, Va. August 21, 1899.

Caminero, H. S., acting assistant surgeon. Detailed as quarantine officer for the port of Guantanamo, Cuba. August 22, 1899.

RECENT DEATHS.

William H. Cammer, M.D., of Brooklyn, died on August 30th, after a brief illness. He was seventy-eight years old and was born in Madras, India. His medical studies, which were begun in London, were completed in Germany, and in 1848 he came to the United States. For sixteen years he was examining physician for the Immigration Commissioners at the old Castle Garden Station.

James Feeley, M.D., of Williamsburg, Borough of Brooklyn, died suddenly on August 30th, of cardiac disease. He was born in London, Eng., and was fifty-five years of age. At the time of his death he was chief of the Surgical Staff of St. Catherine's Hospital.

John J. Linson, M.D., died of cardiac disease at his home in Tarrytown, N. Y., on August 27th. He was born in New York City in 1837 and was a graduate of the College of Physicians and Surgeons During the Civil War he served as surgeon of the 6th New York Heavy Artillery. He is credited with having invented the plan of marking men with nitrate of silver to prevent bounty jumping. For three years he was president of the Westchester County Medical Society.

BOOKS AND PAMPHLETS RECEIVED.

Tetany, with Illustrative Case. By George W. Miles, A.M., M.D., Oneida, N. Y. Reprint. 1896.

Chemicolegal Testimony: Strychnin. By G. H. Meeker, M.S., Ph.D., Philadelphia Reprint. 1899.

A Review of Recent Legal Decisions affecting Physicians, Dentists, Druggists and the Public Health, together with a Brief for the Prosecution of Unlicensed Practitioners of Medicine, Dentistry or Pharmacy, with a paper upon Manslaughter, Christian Science and the Law, and Other Matter. By W. A. Purrington, of the New York Bar, Counsel of the Dental Society of State of New York, etc. New York: E. B. Treat & Co. 1899.

Practical Diagnosis: The Use of Symptoms in the Diagnosis of Disease. Fourth edition, revised and enlarged. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital; Member of the Association of American Physicians, etc. Illustrated with 205 engravings and 14 colored plates. Philadelphia and New York: Lea Brothers & Co. 1899.

On the Relation of the Nervous System to Disease and Disorder in the Viscera. Being the Morison Lectures delivered before the Royal College of Physicians in Edinburgh in 1897 and 1898. By Alexander Morison, M.D. (Edin.), Fellow of the College; Member of the Royal College of Physicians in London; Physician in Charge of Out-patients to the Great Northern Central Hospital and the Children's Hospital, Paddington Green, etc. Edinburgh and London: Young J. Pentland. 1899.

A Text-book of Mental Diseases, with Special Reference to the Pathological Aspects of Insanity. By W. Bevan Lewis, L.R.C.P. (Lond.), M.R.C.S. (Eng.), Medical Director, West Riding Asylum, Wakefield; Lecturer on Mental Diseases at the Yorkshire College; Examiner in Mental Diseases to Victoria University. Second edition, thoroughly revised, enlarged and in part rewritten, with illustrations in the text, charts and 26 lithographed plates. Philadelphia: P. Blakiston, Son & Co. 1899.

The Medical Complications, Accidents and Sequelæ of Typhoid or Enteric Fever. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital, etc. With a special chapter on the Mental Disturbances following Typhoid Fever. By F. X. Dercum, M.D., Clinical Professor of Diseases of the Nervous System in the Jefferson Medical College. Philadelphia and New York: Lea Brothers & Co. 1899.

Progressive Medicine: A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital, etc. Volume I. March, 1899. Surgery of the Head, Neck and Chest; Diseases of Children; Pathology; Infectious Diseases, including Croupous Pneumonia; Laryngology and Rhinology; Otology. Philadelphia and New York: Lea Brothers & Co. 1899.

Pulmonary Tuberculosis: Its Modern Prophylaxis and the Treatment in Special Institutions and at Home. Alvarenza Prize Essay of the College of Physicians of Philadelphia for the year 1898. Revised and enlarged by S. A. Knopf, M.D., Paris and Bellevue Hospital, N. Y., Physician to the Lung Department of the New York Throat and Nose Hospital; formerly Assistant Physician to Professor Dettweiler, Falkenstein Sanatorium, Germany, etc. With descriptions and illustrations of the most important sanatoria of Europe, the United States and Canada. Philadelphia: P. Blakiston, Son & Co. 1899.

Original Articles.

INTUSSUSCEPTION.[1]

BY JOHN C. MUNRO, M.D., BOSTON.

That intussusception is not rare is shown by the fact that over 500 cases have been reported within the last twenty-five years. According to Leichtenstein, 40 per cent. of all cases of intestinal obstruction are due to this lesion. Probably three-fourths of the cases occur in infants, though no age is exempt, even the fetus at full term not escaping. The lesion is due to the swallowing by one portion of the gut of its neighboring piece which has become constricted in consequence of a vigorous contraction of its circular fibres. According to Power, children are predisposed apparently on account of the greater length of the mesentery.

All cases should be considered, in the interest of the patient, to be surgical from the beginning. A strangulated hernia has long since ceased to be a medical disease; how much more should an internal strangulation with its similar possibilities be within reach of surgical interference if necessary. As in appendicitis, every case may not demand operation, but the responsibility should be placed in the hands of one who is ready and able to operate at the earliest opportunity.

Intussusception may be caused by sudden blows or injuries, muscular efforts, tumors of various kinds, typhoid or tubercular ulcerations, diarrhea and possibly vomiting and coughing.

The invagination is found in more than half of the cases in the ileocecal region, though other portions of the intestinal tract may be involved, Chiari and Engel each having seen a partial invagination in the stomach. The jejunum is comparatively rarely affected.

The symptoms in a typical case are sudden and acute abdominal pain, usually coming on at night, vomiting and stools containing mucus and blood. There may be diarrhea or obstipation. A tumor, not necessarily sausage-shaped, can be felt in the abdomen, generally on the right side, but until peritonitis has begun, spasm is absent or slight in degree. As the intestine becomes more and more constricted, congestion, stasis, infiltration and necrosis follow. Owing to the greater elasticity of the constricting ring as compared with the ring in external hernia, we are less liable, comparatively speaking, to find strangulation. Furthermore, the inner tubes being more liable to become gangrenous than the sheath, peritonitis may be escaped by the passage of the gangrenous portion along the digestive tract. But, in actual practice, it is not safe to rely on so slight an advantage, or to consider the condition less serious than it is, to wit, one of the most serious than can confront the surgeon.

Intussusception may be acute, chronic, chronic with acute exacerbations, single or multiple, direct or reversed.

Peritonitic adhesions may not form for weeks, or may begin with the onset of the invagination.

Spontaneous recovery may take place by disinvagination or by separation of the inner tube and evacuation later; in the latter way several feet of gut may be lost, one observer (Peacock) having seen eight pieces, aggregating twelve feet, passed during the course of three years. Disinvagination without any interference beyond medical treatment occasionally takes place, but such a fortunate outcome is rarely to be anticipated. Of spontaneous separation Rydygier says that it is very satisfactory but rare, "and to speculate on a chance accident is not an established therapeutic procedure." Many such cases die later of perforation, peritonitis, stricture, etc. According to Senn, young children and infants seldom, if ever, recover in this way.

Treatment by mechanical distention with liquids, air or gas may be successful if employed early, that is, within the first twenty-four or forty-eight hours at the utmost. In acute cases it is best given with full anesthesia and the patient inverted, all preparations for laparotomy in case of failure, necessity or doubt having been made. The pressure should be slight, not over two pounds if gas be used, or if a liquid, the reservoir should not be over two or three feet above the patient. A low intussusception may rarely be pushed back by a finger or tube passed into the rectum.

There is considerable shock from such a simple procedure, and many cases of rupture of the intestine during injection have been recorded. It is difficult to reduce the final inch of the invagination, and without actual inspection one cannot tell whether the reduction has been complete or not, so that the cases of recurring intussusception are probably due to the failure of complete disinvagination and not to a fresh, independent attack. Barker says that there is a tendency of the bowel to unroll itself *up to* the point at which it first began, but no farther; in other words, the supposed reduction is not a complete one, and abdominal palpation under such conditions may fail to show any tumor.

In brief, injection is justifiable in chronic cases; where the patient refuses operation in acute cases; when beyond surgical aid and within a few hours after the onset of the attack. If the first attempt in acute cases is not successful it is useless to make a second trial.

All authorities urge operation in one form or another, as early as possible in acute cases and at once after trying a simpler procedure, such as injection, for the same reason that one should be prepared to attack a hernia after failure to reduce it by taxis. In chronic cases it is unwise to delay over a week, simple attempts at reduction having been made meanwhile. The patient should be watched closely to forestall any acute attack. As in operating on the appendix in the interval, the risk of a laparotomy is reduced to its minimum.

After opening the abdomen there are various methods of dealing with the many conditions found. Of these we may consider artificial anus, entero-anastomosis, disinvagination or reduction, complete and partial resection.

Artificial anus has very little to recommend it. There is scarcely a recorded recovery in an acute case. Occasionally a chronic case has survived, and an acute case where a resection has followed the artificial anus which was resorted to to tide the patient along temporarily. As it does not relieve the strangulation or its consequences except the distention and obstruction, it must be looked upon merely as a makeshift or an evidence of faintheartedness.

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[1] Read before the Massachusetts Medical Society, June 13, 1899, and recommended for publication by the Society.

Entero-anastomosis has very little more to recommend it. The intestinal current is, to be sure, reestablished, but the invagination with all its possible and probable consequences still remains. A few cases, less than a dozen, of recovery in adults have been reported, most, if not all of them, being in chronic intussusception.

Disinvagination or reduction is the ideal operation, and if the case is seen early, before necrosis and firm adhesions have taken place, the outlook for its successful employment is good. Everything depends on the interference being early. Fifteen years ago Treves found that the mortality was only 30 per cent. in cases easily reduced, as against 91 per cent. in those reduced with difficulty, and since then, with the improvement in technique and diagnosis, the early operation shows a much lower death-rate.

Where the reduction is not easy on account of firm adhesions there is always a risk of tearing the bowel or of gangrene from the prolonged pressure, and in such suspicious cases it is safer to isolate or drain the area involved. Chronic cases are not necessarily difficult to reduce, even after weeks or months of invagination. In reducing, Senn advises that the edema be treated first as in a phimosis and then that countertraction be made below the apex in order to prevent folding, in the sheath and middle cylinders; occasionally insufflation will add materially in the manipulation. To prevent re-invagination if it appears liable to take place, he also suggest that the mesentery be shortened.

Where, owing to adhesions, tumors, necrosis or perforation, disinvagination is not possible, a resection in one form or another must be resorted to. Probably the simplest method is that devised by Maunsell or some modification similar to that described by Rydygier. The entering gut is sutured to the sheath at the neck without disturbing its position, and then through a longitudinal incision in the sheath the invagination is delivered and amputated near the neck, the free edges of the stump being sutured together, controlling in that way the mesenteric vessels. After dropping the stump back into place, the opening in the sheath is closed. If the invagination cannot be delivered through the side opening after amputation it may be left to come away later in the stools. Where possible a typical Maunsell operation may be done. In this way the least possible amount of intestine is sacrificed and the mesentery is quickly and easily controlled. The use of buttons or spools is unnecessary.

Where the sheath is gangrenous a complete excision is enforced, end-to-end or lateral anastomosis being employed. Here plates or buttons may be used if thought best. Occasionally it may be found that all of the intussusceptum and a portion only of the sheath may be removed. If the intussusception is low down resection may at times be done through the rectum without opening the abdomen.

As, for the most part, all data and methods are based on intussusception in the child and in the ileocecal portion of the intestine, it may be well, in view of the two personal cases reported to-day, to consider, in more detail, invagination in adults and especially when it takes place in the jejunum.

Adding to Braun's table made in 1885 and to Rydygier's table made in 1895 14 cases of reduction or resection in adults over sixteen years of age reported since, we have a group of 72 cases altogether. Undoubtedly there have been many more cases that have been operated upon, but so far as could be discovered no more have been recorded.

Of 21 recoveries after reduction — including the cases of Perceval (1888), Stretton (1894) and Barker (1897) — 13 were in the ileocecal or colic region, four were iliac, one jejunal and three unknown. Thirteen were chronic cases, seven acute, and one unknown.

Of 13 fatal reductions — including the cases of Davies-Colley, White (1889), Richardson (1892) — nine were ileocolic, one each, iliac and jejunal, and two unknown. Seven were acute and six were chronic, probably some of the latter being operated upon during an acute exacerbation. Shock and peritonitis were the main causes of fatal issue.

Of 17 recoveries after resection — including the cases of Hartley (1892), Wassiljew and Munro (1898) — 14 were ileocolic and one each was iliac, colic and jejunal. Six were acute or chronic with acute exacerbations, and nine were chronic, while two were unknown. In two cases (Mikulicz and Wassiljew) the resection was secondary to an artificial anus.

Of 21 fatal resections — including the cases of Abbe (1891), Senn, Robson and Munro (1897) — nine were ileocolic, seven iliac, one colic, two jejunal and two unknown. Fourteen were acute or chronic with acute exacerbations, five were chronic and two unknown. One (Esmarch) was secondary to artificial anus. Nearly all died of peritonitis or shock.

The jejunum was involved in only five of these cases:

(1) White's case, an acute invagination ten inches long and two and one-half feet from the pylorus, died on the table, the operation being abandoned.

(2) Stutsgaard's case, caused by a lipoma and of unknown duration, died in five days of peritonitis after resection of 128 centimetres.

(3) Robson's case, of seven days' duration, died after resection of four feet and an end-to-end anastomosis.

(4) Borch's case of acute ileojejunal invagination recovered after disinvagination.

(5) Writer's case of recovery after resection of thirty-two inches of jejunum.

The earlier cases, like those reported by Velse, Fuchsius and others at the beginning of the present century were naturally cases of reduction, many of them being easily replaced. When in recent years resection began to be employed it was at first almost uniformly fatal, but with the improvement in technique the mortality has fallen nearly one-half, and in all probability it will never be much less because, with earlier diagnosis and operation, resection will be replaced by reduction, leaving only the desperate and neglected cases for the more serious operation.

Where the lesion involves the upper portion of the intestine any procedure must of necessity be fraught with more danger than in the cases in which the lower part of the tract is involved, but fortunately the latter region is far more frequently affected, so that with early surgical supervision and early interference in both acute and chronic cases after a judicious trial of simpler, non-operative means, many more patients should be saved. It remains in the hands of the general practitioner to realize the grave possibilities in all cases and to protect himself and his patients by early resort to the surgeon, who, on his part, must appreciate that death, just as in strangulated hernia or in acute appendicitis, is too often the price of a useless delay.

As a contribution to the statistics of operation for intussusception in adults, the writer will add two cases of his own. Both have been briefly reported in the Boston City Hospital Medical and Surgical Reports, Series X, but it may be allowed to give the history of one a little more in detail, the fatal one being dismissed in a few words.

Case I. Male, thirty-seven years old, was admitted to Dr. H. W. Cushing's service at the Boston City Hospital with a history of abdominal pain, obstipation, distention and tenderness in the region of the appendix for sixty hours. Operation under ether. Intussusception of the lower end of the ileum eight inches long and with beginning gangrene was found. Amputation proximally seven inches from the invagination and distally close to the cecum, or about one inch from the invagination, with end-to-end anastomosis, was made. Patient in poor condition at time of operation. On the following day he was still very ill and got out of bed against orders. Sixty hours after operation he died, a partial autopsy showing the abdomen to be full of feces from a rupture in the intestine on the proximal side of the joint, which was tight.

The history of the case of recovery after resection is as follows:

Case II. Chin Yuen, a Chinese laundryman, twenty-one years old, entered Dr. F. H. Williams's service at the Boston City Hospital, October 21, 1898, with a history of intermittent abdominal pain in right upper quadrant for three weeks. There was also an indefinite history of abdominal pain nine months previously, but as the patient talked very little English no definite connection between the two attacks could be obtained. Considerable nausea and vomiting. Bowels regular. Sleep poor on account of pain. During paroxysms he rolled about the bed moaning, and lay preferably on his belly. Pulse 90, regular and of good strength. Heart and lungs negative. A moderately lax, tympanitic abdomen, tender on deep pressure, more resistant on the right side, with increased localized resistance in the right hypochondrium. Two days later there was a leucocytosis of 13,500.

October 27th. No vomiting for five days; the face has lost the drawn expression and he no longer cries with pain. Better appetite and sleep.

October 31st (four days later). No abdominal pain since the 27th, bowels regular, general condition much improved and for several days he has been up and dressed ready for discharge, but two days afterward, on November 2d, he again had an attack of abdominal spasm and passed some blood at stool. Transferred to Dr. George W. Gay's service under the care of the writer. Examination without ether showed a tumor filling the pelvis and pushing the anterior wall of the rectum backwards, the tumor extending upwards along the right iliac fossa to the right hypochondrium. Spasm of the abdominal muscles. In view of his previous history it seemed best to delay in the hope that he would again quiet down enough to allow operation in the interval, but as the symptoms did not improve operation was performed on November 5th.

Operation under ether. — Incision three to four inches long at the outer edge of the rectus, exposing a sausage-shaped tumor extending from beneath the left lobe of the liver to deep in the pelvis, twelve to fourteen inches in length. Towards the lower end were three gangrenous areas that ruptured on handling, allowing pus and feces to escape. After clamping the bowel above and below the intussusception, the mesentery was cut parallel to the gut and the vessels controlled with a continuous half-hitch catgut suture, but owing to the abundant vascular supply additional ligatures were required. In order to gain a little room and to save as much of the bowel as possible the gut was disinvaginated for an inch or more at the neck, but after delivery the circulation was so poor that an additional inch was amputated. After suturing each stump-end with a continuous catgut suture to control the bleeding, an end-to-end anastomosis was made with two rows of a continuous, right-angle silk suture. Owing to the edema and swelling of the gut at the lower end, a good approximation was difficult, but so far as could be seen the joint was a tight one. The mesentery of the upper portion was bluish, and in one place had a small inflammatory patch, but there was apparently life enough to warrant its being retained. To have amputated more gut in order to exclude this bit of mesentery would have necessitated another parietal incision, which in the patient's condition was not justifiable at the time.

A half-pint of salt solution had been injected into the bowel before making the anastomosis; afterwards the abdominal cavity was washed out with hot salt solution, the lower three-quarters of the incision closed with silkworm gut, iodoform wicks and a glass drain being carried in at the upper angle and isolating the region of the joint from the general cavity.

The patient stood the operation, which lasted an hour, fairly well; the pulse at the close being 130 to 140, regular and of fair strength. Strychnia, salt solution and brandy had been given under the skin. Repeated one-quarter grain doses of calomel, and stimulation were ordered.

Good recovery from the operation followed, the bowels moving within twenty-four hours by enema, and broths being retained without vomiting.

November 7th. All wicks loosened and some removed under chloroform, the remainder being taken out two days later and replaced by a light packing.

November 11th. Intestinal contents, bile and pancreatic fluid escaped from the sinus to-day, but the general condition of the patient remains good. He was then put on rectal feeding, but as symptoms of starvation appeared a second operation was advised.

November 15th. *Operation under ether.* — At the bottom of the sinus a small opening into the bowel lay an inch and a half to the inside of the line of the parietal wound, so a second incision was made close to the median line. The opening into the gut, one-half inch in diameter, lay in the midst of gangrenous and granulation tissue. Considerable time was wasted in trying to close this hole, and then the incision was enlarged and the fresh adhesions broken down in order to allow access to the bowel. Owing to its adhesions and short mesentery it split open, not at the original anastomosis, but apparently in line with the mesentery that was considered doubtful at the first operation. The patient's condition would not warrant prolonged operation, so the ends were sutured together with ordinary silk in mattress sutures passed deeply and at some distance from the edges. Apparently a tight joint was secured. Iodoform gauze drainage. There was considerable shock, but the patient recovered quickly and showed no evidence of peritoneal disturbance. The wicks were removed and he was gaining steadily, when, on the sixth day (November 21st), leakage from both wounds appeared. As the general condition continued satisfactory, a third operation was not undertaken until November 26th, when, under ether, a fine opening admitting a probe, at the bottom of the median incision, was found lying in firm, healthy tissue. This could be easily and completely closed with fine silk. The entire median wound was then thoroughly curetted, filled with strong permanganate solution and closed with silkworm-gut sutures, a small rubber-tissue drain being carried obliquely through the first lateral incision. No shock followed this operation.

Two days later, food, with pancreatic fluid and bile, appeared as of old, but the patient was in good condition, eating solid food and gaining steadily.

December 1st. Considerable digestion of the skin, controlled, at Dr. H. W. Cushing's suggestion, by dressing with tincture benzoin compound.

December 9th. General condition improving rapidly; lateral wound closed; apparently no pancreatic fluid, but a little pus from the sinus.

December 17th. Again a slight escape of pancreatic fluid and bile.

January 18th. The discharge continues about the same, the skin being completely protected by the benzoin.

January 25th. Three heavy silk loops (those used at the second anastomosis) discharged to-day. Patient in excellent condition.

February 4th. Lateral sinus, which reopened temporarily, has again closed.

February 18th. Patient cheerful and helpful about the ward.

March 17th. Discharge is now barely sufficient to moisten litmus paper, upon which it uniformly gives an acid reaction.

March 27th. Sinus healed. Patient fat and healthy.

April 11th. Wounds firmly closed; patient discharged wearing an abdominal swathe.

At the time of operation the intussusception, which was seen to be in the jejunum, was apparently a reversed one, but careful examination later showed that it was a direct invagination. The specimen, when measured after preservation in alcohol, showed that at least thirty-two inches had been excised.

It would have been better to have operated at the time the patient was ready to be discharged, or, at the latest, when the recurrence of the acute symptoms began, as in that way a partial excision might have been substituted for the complete one. No cause in the shape of a tumor or ulcerations could be found.

Anthrax Epidemic. — A slight epidemic of anthrax, according to the *Journal of the American Medical Association*, has appeared among cattle in southern Chester County, Pa. The disease has also appeared in the region of Chambersburg, four cattle and two horses having died within the past few days.

THE GROWTH AND EXTENSION OF CARCINOMA.[1]

BY WILLIAM T. COUNCILMAN, M.D., BOSTON.

The carcinoma is a tumor which arises from epithelial tissues and is characterized by unlimited growth locally and by the formation of tumors of a similar structure in other parts of the body. When we examine its microscopic structure we find that it is composed of two sorts of tissue: (1) epithelial cells arranged for the most part in solid masses, which vary in their size and form, growing in spaces which are called alveoli; (2) connective tissue which surrounds the alveoli and bears the blood-vessels for the nutrition of the cells in the alveoli. This connective tissue is called the stroma. Neither stroma nor blood-vessels penetrate the masses of epithelium. When we examine normal epithelial structures we find a very similar arrangement of tissues — epithelial cells growing in the closest juxtaposition with connective tissue, but never penetrated by it. Whether we consider covering epithelium or glandular epithelium, the arrangement of tissue is always the same.

If we take any normal epithelial structure and suppose that the cells at some point begin to multiply with unlimited activity and penetrate into the adjoining connective tissues, we have the structure of the carcinoma. It is not sufficient for the epithelium to proliferate. Epithelial tissues are the most active of any tissues of the body. Both the covering and the glandular epithelial cells are constantly becoming used up in the course of their physiological activity, and the loss is constantly repaired by the formation of new epithelial cells. This power of regeneration is sufficient not only for the ordinary wear and tear of the tissues, but extensive losses of cells are as easily repaired. Further, the epithelium may be excited to greater activity by various means, and large masses of tissue composed principally of epithelium may be produced. I say principally of epithelium, for, in consequence of a definite law of nutrition, when a tissue is growing actively and requires more food, the old blood-vessels will enlarge and new ones be formed. In consequence of this, along with the epithelial masses, considerable connective tissue with blood-vessels will be produced. An epithelial growth of this kind repeats the formation of the normal structures and is called typical. There is no penetration of the connective tissue by the growing masses of epithelium. There is no normal prototype for the structure of the carcinoma. We express this by saying that the simple hyperplasia we have been speaking of is typical, while the carcinoma is atypical.

When we compare the epithelium in the different epithelial structures of the body, we find differences in the size and form of the epithelial cells, and in their arrangement. These differences are to a certain extent apparent in the carcinomas which arise in different parts, and from the histological examination of the tumor we can say with considerable accuracy from what tissue it has arisen. To explain the growth of the carcinoma it will be necessary to consider for a moment the structure of the connective tissue. This is essentially formed of fibres, between which are cells. It carries the blood-vessels everywhere, and in it the lymphatics arise. In the tissue the cells lie in spaces, which communicate with adjoining spaces, and from the enlargement and coalescence of these spaces the lymphatics are formed. If we suppose that a carcinoma begins its formation by the epithelium growing outward into this tissue, then the growing cells of the tumor at once find their way into this system of communicating spaces and continue to grow in them. Every mass of epithelial cells is within such a lymph space of the tissue.

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[1] These remarks were illustrated by the projection of photo-micrographs. — Read before the Massachusetts Medical Society, June 13, 1899, and recommended for publication by the Society.

When we examine sections from the centre and periphery of a carcinoma we see certain differences in structures. In the periphery the cells stain more sharply and more of them show the peculiar changes in the nuclei by which we recognize cell division than do the cells in the centre. The same thing is seen more clearly when we make a section directly through a small carcinoma. The most active growth is in the periphery. In the centre the alveoli are small, the cells have degenerated, and in some cases have disappeared altogether. All the blood-vessels of a tumor enter from the periphery, and here the best nutrition is offered the cells. The atrophy which goes on in the centre is partly to be accounted for by the compression and occlusion of the vessels by the growing epithelial masses between which they must pass, and partly by the peripheral masses making more active demands for the nutriment which the vessels contain. The size of the single alveolus also has limits. The epithelial masses receive their nutrition also from the periphery because blood-vessels do not penetrate within them. In consequence, the cells on the outside proliferate and the newly-formed cells are pushed into the interior, and with the enlargement of the mass are further and further removed from the source of nutrition. As the alveolus enlarges, degeneration takes place in the central cells. Each alveolus then becomes in its growth a type of the whole tumor. The malnutrition of the centre of the tumor affects not only the epithelial alveoli but the connective-tissue stroma. It loses its characteristic structure, the fibres blend together into a dense mass, and the cells atrophy. It contracts just as cicatricial tissue does, and hence arises the central depression so characteristic of carcinoma in certain places.

Certain names are given the tumor to express the differences of relation between stroma and alveoli. The hard dense tumor due to central degeneration, having small alveoli and dense stroma, is called scirrhus. The softer tumor, with larger alveoli and softer stroma, is called medullary. Both scirrhus and medullary are seen in the same tumor. The hardness of a tumor is frequently only an evidence of the activity of the peripheral growth.

Every structure gives way before the growing epithelial masses. This is partly due to pressure and partly to the fact that the epithelial cells demand the nutrition which is provided for the opposing structures. Even the non-maligant tumor presents higher claims for nutrition than the normal tissues. It is not uncommon to find a fatty tumor in an individual so emaciated that almost all the normal fat has disappeared, but the fat cells of the tumor not only suffer no diminution in size and number, but continue to increase. The carcinoma not only grows peripherally as a solid mass, but in various places small masses of cells push out independently into the tissue and form new centres of growth which gradually coalesce with the central mass. The contraction of the tumor due to central degeneration is particularly seen in carcinomas of the alimentary canal. In this the central part of the tumor is connected with the lumen. The degenerated necrotic portions are invaded by bacteria, which find there a suitable soil for growth, and inflammation and ulceration results. In the stomach the necrotic portions are digested by the gastric juice. The stricture of the intestine results both from the masses of the tumor pushing into the lumen and from the contraction which constantly accompanies the degeneration.

The carcinoma not only tends to grow locally in the way we have seen, but similar tumors are formed elsewhere. In carcinomas these secondary or metastatic tumors are found in those lymphatic glands which are connected with the primary tumor by lymphatic vessels. In carcinomas of the alimentary canal the secondary growths are found not only in the lymphatic glands but in the liver, the connection being by blood-vessels of the portal system. The metastases repeat the structure of the primary tumor. Differences in the size and arrangement of the cells which characterize the primary tumor are found in the secondary. The same tendency to degeneration and the same form is seen in the secondary. Something capable of producing the same growth must be carried from the primary tumor to form metastases. We can trace the growth of the metastases much better than we can the growth of the primary tumor. By examining those lymphatic glands of the axilla removed with a carcinoma of the breast, which to the naked eye present no enlargement or deviation from the normal, the beginning of the metastasis can be seen. It begins in the periphery of the gland where the lymphatics coming from the primary growth enter. Cells of the same character as those in the primary growth are found in the lymph sinuses, and they grow here, the remainder of the gland forming the stroma.

The growth advances along the lymphatics in two ways. Solid masses of cells probably connected with the primary growth may push their way along the lymphatic vessels. I have seen all the lymphatic vessels of the scrotum injected with carcinoma this way, separate nodules being formed at intervals by more active proliferation of the cells in the lymphatics. In the carcinoma of the stomach it is not at all uncommon to find the lymphatics of the peritoneum over the tumor filled in this way with masses of cells. Secondly, not only can we trace these masses of cells in the lymphatic vessels, but by examining the tissue which is in the neighborhood of a carcinoma and which is apparently not affected, we can often find single epithelial cells within the lymphatics. In certain cases the tumor cells may push their way into blood-vessels. In carcinoma of the alimentary canal metastases both by the lymphatics and blood-vessels is the rule. This is probably to be explained by the presence of such numerous and thin-walled veins in the tissue.

We may certainly regard the metastases as due to the conveyance, by either the blood-vessels or lymphatics, of cells from the primary tumor to a distance. The proof of this is the close connection of the cells of the tumor with the lymphatic system, the presence of cells showing similar structure, mode of growth and tendency to degeneration in the secondary tumors, the beginning of secondary tumors in the lymphatic glands where the lymphatics enter the gland, and the presence not only of cell masses but of individual cells in the lymphatic vessels. The full recognition by surgeons of the intimate relation between the cells of the tumor and the lymphatics has led to those methods of operation which have so reduced the danger of recurrence. We know that no carcinoma can be found so recent in its development that the lymphatic glands belonging to the part may not be affected. Hence these are removed with the primary tumor. Further, that the way of extension is by the passage of cells from the primary tumor or along the lymph vessels. It is of no use to remove the primary and secondary growth and leave a long street between the two which almost certainly contains straggling cells capable, each of them, of producing a new growth. Hence tissue containing lymphatic vessels connecting primary growth with lymphatic glands is removed as far as possible. Cells from the tumor, each capable of developing a new tumor, may be implanted in the tissues by the knife in the course of operation; hence the care exercised in avoiding incision into the tumor in the course of operation.

When we come to the question of the essential cause of carcinoma we enter the domain of theory. Of these theories we have, first, the influence of trauma, which is supposed to irritate tissues and to cause them to proliferate. Trauma alone has little to be said for it. The infrequency of carcinoma in those parts which are most exposed to trauma and its frequency in those parts least exposed speaks against this. No parts of the body are so exposed to trauma as the hands and feet, no parts less exposed than the mammary gland and the uterus. Even in the pessary days of gynecology carcinoma of the uterus was not made more frequent. Carcinoma of the lower lip, due to smoking, is a favorite example for the traumatist. Why the infrequency of carcinoma in the upper lip, which must be just as much exposed? It would take an accomplished juggler to hold a cigar in the lower lip. The appearance of the tumor at the period of life when traumas of all sorts are less apt to take place speaks also against it.

(2) The theory of Thiersch that the essential element in the production of a carcinoma is a degeneration of the connective tissues, in consequence of which the epithelium more easily grows into it. Such degeneration, if true, should be capable of demonstration, but has not been demonstrated.

(3) The theory of embryonic residues of tissue included in the normal tissues and capable of the enormous capacity of growth which characterizes embryonic tissue. This theory, though not original with Cohnheim, was taken up by him and advocated with all the force and charm which characterizes his work. In favor of this it must be said that there is much analogy between tumors and embryonic tissue, and that such remains of embryonic tissue may exist in the body and that tumors may develop from them. Considered purely as a theory, there is undoubtedly more to be said in favor of it than of any of the others. A modification of this theory has been advocated by Ribbert, who supposes that not only such embryonic tissues develop into tumors, but that when masses of epithelium become separated from their organic connection with other cells they may develop into carcinoma. There is danger in even discussing these theories that one may be tempted to advance one.

Probably the theory which of late is having the most attention paid it is that of the parasitic origin of carcinoma. From a purely theoretical point of view, there is much which speaks for and more against it. It must be considered a theory, for as yet parasites have never been demonstrated in a carcinoma, or certainly not in such a connection with it that they should be considered as causal. From a theoretical point of view, there are certain things which at first sight seem to favor the parasitic theory. First, the apparent increase in the number of deaths caused by the malignant tumors. If these tumors are due to embryonic causes or trauma, or such constautly operable causes, there would be no likelihood of increase. If due to parasites they could, like the other infectious diseases, show periods of increase and decline. There can be no doubt, from the numerous articles which have appeared on this subject, that the general mortality statistics show on the face a marked increase in cancer mortality in the last twenty-five years. It is possible to take mortality statistics and prove many things by them. Only those who know how mortality statistics are gathered, who see the crude returns before they are interpreted by the clerks in health offices and arranged in fair columns of figures, know their full unreliability. The exponents of protection and free trade have shown what can be done with the fairly accurate economic statistics. The more accurate statistics of insurance companies do not show this increase. The apparent increase deduced from the general statistics can be referred to a number of causes. There has been an increase in longevity, due principally to diminished mortality in the infectious diseases. Carcinoma is essentially a disease of later life, and more people reach what may be termed the carcinoma age. The diagnosis of carcinoma, especially of the internal organs, has become more accurate, and deaths are now properly attributed to this disease which were formerly put down under other heads. Deaths from carcinoma were formerly concealed as much as possible, so great was the horror of the disease and the fear of heredity. Hospital surgeons gain a general idea of increase from the number of cases who come to the hospital for operation, due to the great success which now attends such operations. The disease carcinoma in some respects shows a similarity to the chronic infectious diseases. Like these, it commences in some locality, and from this it extends to other parts by means of the blood or by lymphatic vessels. In carcinoma, as in infectious diseases, there develops after a variable time, a condition of wasting and malnutrition, which is termed cachexia. When we examine more closely, the analogy is not so evident. In the first place, the tissue lesions are totally different. There is a great deal of similarity in the lesions of all the infectious diseases. They consist in a combination of degeneration and proliferation of tissue. In certain of them, as in tuberculosis, the character of the degeneration produces a typical lesion from which it is possible to make a diagnosis, though not with absolute certainty. All the new tissue formed is of an indifferent type and of the general character of the granulation tissue of inflammation. In the metastases the same general character of lesion is produced as in the primary. Opposed to this, in carcinoma a definite tissue is produced consisting of epithelium growing into a connective-tissue stroma. It is not an indifferent tissue which might arise from proliferation of the connective tissue, but is a definite tissue formation consisting of epithelial tissue in a definite relation to connective tissue. Moreover, the metastases show the same type. It is possible to have in the liver secondary to an adenocarcinoma of the rectum an almost perfect reproduction of the glands of Lieberkühn. If the cells are small in the primary growth, if they have any peculiarity in arrangement, if they show any peculiar form of degeneration, the same is true of the metastases. The metastasis which has been used by the exponents of the parasitic theory as showing the analogy between carcinoma and infectious diseases cannot be produced by parasites alone. In the infectious diseases the primary lesion is usually at some point which is open to infection from without, as the lungs in tuberculosis. In carcinoma the disease is most frequent in those parts in which the ordinary infections are most rare. Certain peculiar bodies are found included in the cells of carcinoma which have been considered as parasites. It is perfectly true that we do find in the epithelial cells of carcinoma small structures of whose nature we are for the most part ignorant. We do not better the situation by saying, therefore, they must be parasites. They show no definite size or form, they have no definite reaction to the aniline dyes, and if parasites, they differ from any known type. It is not impossible that carcinoma may be due to the invasion of the tissue by a parasite. If true, the invasion must take place only in the latter half of life, in places least exposed to invasion of the ordinary infectious agents, the parasite must enter every cell, causing it to proliferate and grow in a peculiar way, and must be carried with the cell into other parts of the body and there again cause the same peculiar cell growth.

The enormous advance in our knowledge of disease in the last twenty-five years has scarcely affected the malignant tumors. The classification has been improved and we know their structure rather better, and that is about all. There is need now not of any new theory, but of close investigation. The parasite theory must be taken up and definitely proven or set aside. The question of their inoculability must be determined. The investigation should cover not only the malignant tumors in man, but possibly a more fruitful field may be found in the tumors of lower animals, particularly the common tumors of fish. Such investigations are being carried out in various places in other countries and in this, and we confidently believe that the results of these investigations will lead to an increase of our knowledge and, with this, increase in our power to relieve.

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TWO CASES OF INJURY OF THE CORD RESULTING FROM FRACTURE OF THE SPINE.[1]

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(Concluded from No. 10, p. 235.)

Microscopical examination. — Sections were made at various levels and stained with hematoxylin and eosin; hematoxylin and picric acid and acid fuchsin; Unna's alkaline methylene-blue and eosin; Weigert's myelin-sheath stain: and Pal's modification of this followed by acid fuchsin; and according to Marchi's method.

Sections at the level of the third cervical segment showed marked dilatation of the blood-vessels of the pia, and of the anterior and posterior nerve roots. Numerous dilated blood-vessels are found throughout the cord, both in the white and in the gray matter, and also numerous hemorrhages in all parts of the cord, many of them in the white substance and of considerable size. These radiate in many cases from the gray matter of the cord toward the periphery. Throughout the white substance there is seen a large number of enormously swollen nerve fibres, staining homogeneously with hematoxylin, and there is also considerable edema. This condition is in general more marked near the gray matter of the cord, and is seen in both the posterior, lateral and anterior tracts; still a considerable number of these swollen fibres are seen at the periphery, notably in the lateral tracts. Throughout the posterior horns there are extensive hemorrhages, while the anterior horns are almost completely destroyed by hemorrhage, especially the lateral horns and the outer portion of the anterior horn, where none of the normal structures can be made out. Here and there among the mass of red blood corpuscles are seen irregularly oval masses staining homogeneously with hematoxylin, which are evidently remains of nerve cells. In the area of hemorrhage there is a moderate number of cells, chiefly leucocytes with vesicular polymorphous nuclei and a few large phagocytic cells with small more deeply staining nuclei. Many of these cells are filled with dark brownish pigment, and a considerable amount of this pigment is seen lying free. In some of the perivascular lymph spaces in the neighborhood of the hemorrhagic areas are numbers of leucocytes and phagocytic cells loaded with pigment. The sections stained by Marchi's method show that these cells have taken up a considerable amount of degenerated myelin. There is also a considerable amount of degenerated myelin throughout the section, not more marked in one part of the cord than in another. The myelin sheaths of many of the enormously swollen fibres spoken of above show as thin black or grayish lines surrounding the swollen axis cylinder.

Sections from a little above the first level show much the same condition except that the hemorrhages in the white matter are few and small, and the hemorrhages in the posterior horns are smaller, and a portion of the inner border of the anterior horn has escaped destruction, at which place a few nerve cells can be seen which are fairly normal.

Sections from about the level of the seventh cervical segment show great dilatation of the blood-vessels of the gray matter of the cord. There is also a small hemorrhage at the tip of the right anterior horn. In the middle of the left posterior column is a circular area, which is very edematous, and contains a great many enormously swollen nerve fibres, and quite numerous leucocytes filled with dark reddish-brown pigment. Here also there is dilatation of the blood-vessels of the nerve roots and the pia. Sections stained by Marchi's method show a diffuse fatty degeneration of nerve sheaths and axis cylinders in all parts of the cord, though most of the fibres are unaffected. There is also a well-marked degeneration of the nerve roots, the anterior and the posterior ones being about equally affected.

Sections from various levels of the cord stained by Weigert's and Pal's methods show no degeneration of the ascending or descending tracts. There are no hemorrhages in the pia.

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[1] From the Pathological Laboratory of the Boston City Hospital. — Read before the Boston Society for Medical Improvement, May 8, 1899.

Summary. — This cord showed at the level of the third cervical segment a narrow area where there were almost complete destruction of the cord, complete destruction of the gray matter, by hemorrhage, and very numerous and large hemorrhages in the white substance, with destruction of some fibres and marked swelling of many of the remaining fibres, damage which was probably sufficient to cause nearly complete interruption of conduction in the fibres which had not been torn. The hemorrhage in the gray matter had extended upward and downward, chiefly in the anterior horns, for a distance of about half a centimetre, and areas of hemorrhage or remains of hemorrhage were seen at quite a distance from the part of the cord which had been crushed, one especially in the anterior horn as low as the seventh cervical segment. There was also a moderate diffuse degeneration of nerve sheaths and fibres throughout the cord, to about the same extent in the anterior, lateral and posterior tracts both above and below the injured area, and a degeneration, moderate in amount, of the fibres of both anterior and posterior nerve roots, though not as marked as in the first case. This case, like the first one, showed no signs of secondary degeneration of ascending or descending nerve tracts, and probably for the same reason, and there were also no hemorrhages seen in the pia.

The consideration of these cases of injury of the spinal cord brings up several questions of importance. In both the greatest damage to the cord was evidently caused by compression, probably produced by displacement of one vertebra upon the other, though accompanied in the first case by fracture, as frequently happens. Certainly the narrow area of softening in the second case could have been produced in no other way than by direct compression. In this case no fracture of the bodies of the vertebræ could be made out at the autopsy. In the first case the compressed portion of the cord was greater, and more fractures of the vertebral bodies were present. In neither case was there any pressure directly upon the cord found, either from fragments of bone or from hemorrhage. This was also true of the case reported by Dr. Courtney and myself, and in the three other autopsies at the Boston City Hospital on cases of fracture of the spine in the cervical region. Thus we see that in all the six cases of fracture of the spine in the cervical region which have come to autopsy at this hospital since 1881 there has been no instance of pressure from either hemorrhage or fragments of bone. The pathological changes found were in both cases those of a myelomalacia, with hemorrhages, probably the direct results of the pressure which is produced at the time of the accident. That the cord is not found compressed at the autopsy is because of the ease with which the dislocation is reduced either ante or post mortem, a point to which attention has been called by Thorburn, Kocher, Wagner and Stolper, and others. No fractures of the substance of the cord were seen, though in the first case the softening, as is often the case, was excessive, and the cord was exceedingly difficult to handle even after hardening. Certainly judging from the sections of the three cases of injury of the cord from fracture of the spine which I have made, the case reported by Dr. Courtney, and the two reported in this paper, I must look with suspicion upon such changes as have recently been reported by Dr. Taylor. Hemorrhage as a cause of pressure was not found in any of the six cases referred to, and must certainly be rare, and probably cannot be diagnosticated except when of the gravescent type. In these three cases there was extensive hemorrhage into the substance of the cord, which in the two cases now under consideration extended in the gray matter of the cord both above and below the area of crushing. The presence of these areas of hemorrhage in cases where there has been direct injury of the spinal cord shows that the direct effects of the crush are not the only conditions with which we have to deal, and the chance of hematomyelia following trauma makes the possibility of relieving the symptoms by operation much smaller. It seems somewhat doubtful, however, whether this condition is primary, as Bailey has claimed, but certainly these hemorrhages are found after trauma, and that, too, in the less severely injured cases, though it seems more likely that they are due to direct injury to the cord in most cases rather than to any possibility that the cord, with intact vertebral column, can be stretched to a sufficient extent to produce these hemorrhages. These hemorrhages into the substance of the cord, as is well known, are more apt to occur in the gray matter, though cases are reported in which they have been found in other locations. They frequently extend for a considerable distance above and below the crushed portion of the cord. Probably these hemorrhages varying in extent in the two sides of the cord explain the often observed fact of different levels on the two sides of the body of the upper border of altered sensation.

Another point of interest in these cases is the absent knee-jerk in the first case, and the much diminished reflexes in the second one. This fact of the loss of the reflexes, especially the tendon reflexes, — for the superficial reflexes more often vary, particularly the plantar reflex, — in cases of serious injury of the spinal cord has attracted great attention, and many explanations have been brought forward. This loss was first spoken of as a constant symptom in cases of complete interruption of conduction in the spinal cord in 1882 by Bastian. He attempted to explain this as due to the interruption of tracts from the cerebellum and brought forward the supposed antagonism of the cerebrum and the cerebellum to explain various phenomena in a very ingenious way. Bruns, in Germany, accepted Bastian's conclusions and facts, but hesitated to produce any theory in explanation. Since that time many writers have taken up the subject, each showing more ability in opposing fatal objections to the theories offered by his predecessors than in himself offering any sufficient explanation. Stieglitz rejects Bastian's theory as not sufficient, and thinks that the degeneration of nerve fibres requires time, and that during this period conduction is still present, and that this degeneration of fibres inhibitory of the knee-jerk acts as an excitation of these fibres, and hence has an inhibitory influence, because of the specific energy of nerve fibres. He thinks this action is easier to understand because this inhibition from the higher centres probably acts through local inhibitory centres in much the same way that the vagus acts upon the heart. Herter and Sternberg explain this phenomenon by much the same mechanism, but adduce as the irritant the crushed portion of the cord, acting upon the upper end of the lower uninjured cord. Fraenkel thinks the absence of the knee-jerk can only be explained by assuming an arc to the brain, the ascending limb of which he places in the tract of Gowers, but it is difficult to imagine a constant stimulation of this arc from the periphery, nor can Fraenkel satisfactorily explain that the time interval involved in the production of the knee-jerk is too short for the transmission of any impulse to the brain and back to the muscle. Gerhardt explains the phenomenon by an inhibition similar to that in traumatic epilepsy. Egger ascribes it to a functional disturbance which in time can lead to an organic lesion of peripheral nerves and muscles, which produces the permanent loss.

Whatever the explanation, the fact remains certain that in a large proportion of cases of serious injury to the spinal cord in the cervical or upper dorsal region the knee-jerks are lost, and often permanently. This, however, cannot be assumed as evidence in itself of a total transverse lesion of the cord, as too many cases have been reported in which the knee-jerks have been increased, either throughout the disease or in its later course, when examination of the lumbar cord showed it to be normal, as the case reported recently by Senator, and by Fürbinger, though in the latter the examination was not reported fully. Bischoff analyzes a number of cases from the literature and attempts to prove that in cases of total transverse lesion the reflexes may be either absent or increased, and that, conversely, with partial lesion either condition may be present. Bruns, however, has subjected these cases of retained knee-jerk with complete transverse lesion of the cord to a merciless criticism, and rejects them all. Bischoff calls attention also to the fact that operative experiments upon the cerebellum, tumors, and cases of atrophy of the cerebellum all tend to show that the action of this organ upon the knee-jerk is rather inhibitory, and that therefore destruction of paths from the cerebellum would tend to cause the increase of this reflex. He finally concludes that the cause of the loss of knee-jerk in these cases must be a local one, and that this must be in the peripheral nerve, and ascribe it to anemia produced by circulatory changes resulting from the shock of the accident. We have not spoken of shock as a cause of the loss of the reflexes, as that could only be a temporary cause, while the loss is more often permanent. As Bruns was the first, so he has remained almost the only one who has published a case in which the lumbar region of the cord, the peripheral nerve, and the muscles have all been examined carefully, though at least half a dozen other cases, as Senator's second case, have been reported where a sufficient examination of the lumbar cord has been made, to afford a firm basis for Bastian's claims. Van Gehuchten has recently clearly stated the conditions of loss of the reflexes. The muscle tonus is only the expression of the continuous stimulation of the motor cells of the anterior horn, which is produced by the other neurons in relation to which the cell is placed. These neurons are:

(1) The fibres of the posterior nerve roots.
(2) The cortico-spinal pyramidal fibres.
(3) The descending cerebellar-spinal fibres.
(4) The fibres of the posterior columns, arising chiefly from the mid-brain. These descending fibres lie in the comma tract of Schultze, and in the borders of the antero-lateral tracts.

The pyramidal fibres have an inhibitory influence. The posterior nerve roots bring a certain amount of stimulating influence, while the cerebellar fibres, and the posterior descending fibres act apparently energetically as a stimulating influence. Hence the loss of reflex movements can only recur under three conditions:

(1) An anatomical or functional interruption at some point of the reflex arc.

(2) From an abnormally strong inhibitory action upon the motor cells, as from shock.

(3) By a diminution of the nervous tone of the cells of the anterior horn below a certain minimum, as occurs in transverse lesions of the cervical and upper dorsal cord, and occasionally in partial lesions.

The first of these two patients lived eight days, and so the loss of the reflexes in this case cannot be ascribed to shock, but it is possible that this may have been a cause in the second case, where death took place upon the third day. While I cannot advance an explanation of the disappearance of the reflexes in severe transverse lesions of the upper part of the spinal cord, I wish to call attention to the fairly well-marked degeneration of both posterior and anterior nerve roots in all three of these cases examined by me, as shown by the use of Marchi's method, which has been used, so far as I have been able to find, only by Bischoff, though in this connection I wish to call attention to the changes in the structure of the cells of the anterior horn recently described by Marinesco. The presence of these changes and degenerations is in favor of the theories of Egger and Bischoff, and that such changes should occur at a distance from the actual lesion cannot surprise us when we consider the marked circulatory and nutritive changes which accompany severe injuries of the spinal cord, as shown by the marked sweating so often seen. It seems probable, therefore, that in these cases of total interruption of conduction in the spinal cord in its upper regions we have to do in different cases with different causes for the abolition of the reflexes. In cases of fracture with severe crush of the cord, in addition to factors which come into play in the cases of destruction of the cord by slow compression, there are often the functional and degenerative changes in the reflex arc itself, probably produced by the changes in circulation, and this may be operative in the cases of partial destruction of the cord, where conduction has been lost for a time after the injury, without absolute interruption of the continuity of all the fibres in the cord. Such an explanation, however, will not suffice for the case of Bastian, more than once referred to by Bruns, in which the knee-jerks were absent at times and present at others, always appearing and disappearing with changes in the sensation, which were always completely abolished when the knee-jerks were absent, and returned with their return. Here we must, I think, assume disturbances of conduction of fibres from the cerebrum and cerebellum, and no more satisfactory explanation has yet been given than that first brought forward by Bastian, and by Jackson, and recently by Van Gehuchten. We have at all events in this loss of the knee-jerk an added symptom from which we may infer a severe injury of the upper portion of the spinal cord.

Cases of fracture or dislocation of the spinal column are probably more frequent than is generally supposed, as many of them are slight, and in these the spinal cord escapes or is only very slightly injured, as we see in many of the cases reported by Kocher, and by Wagner and Stolper.

We cannot take up in so short a paper the various forms of injury of the spinal column in detail, but the method of production is of importance, and these are of three chief classes.

(1) Direct crushing blows upon the arches of the vertebræ.

(2) Falls upon the head or buttocks, usually producing a crush of the bodies of one or more vertebræ.

(3) Forced flexions, or more rarely extensions, of the spine, producing dislocations, with or without fracture, which are usually of the bodies of the vertebræ, and of the articular processes only.

The question of treatment of these injuries is of course the most important one with which we have to deal, and in regard to this our conclusions will vary with the conditions present. In the cases of no injury or only slight injury of the spinal cord the problem is a comparatively simple one. The normal relations of the bony parts must be restored by manipulations or operation, or both, so far as is possible, due care being exercised to avoid injury of the spinal cord. Where the cord has been seriously injured, as is unfortunately frequently the case in the fracture-dislocations of the cervical region, we should endeavor to ascertain the extent of this damage, and the question arises whether we are able to do this. I think we can certainly answer this question in the affirmative, as Herter did in 1891. It is on the following factors that we must base our opinion as to whether we have a total transverse lesion of the cord or a partial one. The first point which influences our decision is the history of the onset of the symptoms, whether sudden and at once, or gradual and after an interval, the first being seen in the cases of complete crush. Then in these cases the motor paralysis is complete and generally of the flaccid type, while in the partial injuries it is more apt to be partial, and accompanied by muscular spasm. The same condition of complete or partial impairment of sensation in these two classes of injury is also seen, and we should include all forms of sensation, not neglecting that of localization, which Fraenkel believes to have a close relation to the knee-jerks. The condition of the reflexes also affords us aid, as they are more apt to be abolished in the complete transverse lesions, though this is somewhat variable, and particularly so in regard to the plantar reflex, which is often retained when the remaining reflexes are lost. The complete paralysis of the sphincters of the bladder and rectum again points to a severe injury of the cord, but here we should guard against considering the ability of the bladder to retain a certain amount of urine as an indication that it is normal, a point to which Thorburn and others have called especial attention. In paralysis of the bladder there remains a certain amount of tonic contraction of the sphincter, and this permits the bladder to become filled, when the urine escapes not by dribbling, but in considerable quantities, the discharge often being brought about by a change of pressure, as in changing the position of the patient. Again, priapism is more common in the severe injuries of the cord, as is also the severe sweating, and the involuntary muscular twitchings in the paralyzed muscles. On the other hand, pain is more often present in the partial lesion, meaning by this symptom, of course, spontaneous pain in the paralyzed limbs. Most important of all, perhaps, in enabling us to decide that the lesion is only a partial one are variations in the symptoms of paralysis, loss of sensation and others, which show that conduction through the injured portion of the cord has not been entirely lost.

From these symptoms, then, we can draw conclusions as to the condition of the spinal cord, and I know of no one who has claimed to be able to produce favorable results by operation on cases of total crush of the cord. It is then only in cases where the lesion of the cord is a partial one that we can hope for relief, though it is sometimes claimed that the chance of the interruption of conduction being produced by pressure upon the cord warrants us in operating upon even apparently hopeless cases. A careful study of a large number of cases reported by Wagner and Stolper, and Kocher, as well as from the literature in general, shows us that this condition is extremely rare either from hemorrhage or from fragments of bone. The cases in which pressure from fragments of bone exists are practically limited to those in which the arches of the vertebræ are crushed by direct violence. In other cases the strong anterior ligament is seldom broken, and this prevents fragments of the bodies of the vertebræ from pressing upon the cord, so that nothing can exert pressure except the continued displacement of one vertebra upon another, and this is produced in the large majority of cases by forced flexion of the spinal column, and is usually remedied by hyperextension of the spine, perhaps aided by slight extension, followed later by fixation in some manner, in all cases where the bones have not already resumed their normal position when the patient is first placed upon his back by bystanders or others. The only class of cases then that remains in which operation offers any hope of aid are, as Thorburn concludes, those in which the arches have been crushed by direct violence, either by blows upon the back, bullet wounds, or the way in which the patient has fallen. In these cases, and practically in these cases alone, have we a reasonable chance of finding continued pressure upon the spinal cord, and relieving it by operation, though even here the final result must depend upon the damage done to the cord, for the estimation of which I have tried to give the indications in this paper. In conclusion, I can only state that in all cases of injury of the spinal column severe enough to injure the cord, we are unfortunately apt to find that irreparable injury has been done to the cord, either from hemorrhage into its substance, or complete crush of it, so that the prospect of relief of symptoms of these cases by operation is slight, and we can only sorrowfully say in regard to this field of surgery of the spine, as Brissaud does: "Je reste convaincu que la chirurgie de la moelle épinière est pleine de promesse, comme l'enfer est pavé de bonnes intentions."

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GROWTH AND SOCIOLOGICAL CONDITIONS.

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The following investigations in juvenile anthropometry show experimentally the influence of sociological surroundings upon the growth of children.

Further demonstration of the influence of such conditions can be found in a work [1] (by the writer) published by the United States Bureau of Education.

Influence of unfavorable conditions on the life and physical development of youth is shown in the following table of Pagliani:

TABLE I.

Number of persons.	Age. Years.	Average weight. Kilogrammes.	Average height. Centimetres.	Average chest girth. Centimetres.	Average lung capacity. Cubic centimetres.	Average muscular force. Kilogrammes.
9	10	24.51	126.3	61.0	1,660	66.5
34	11	26.18	128.1	61.2	1,700	68.5
45	12	28.38	132.1	62.8	1,860	79.0
41	13	31.75	137.5	65 2	2,045	95.0
28	14	33.06	140.0	66.4	2,100	105.0
23	15	39.36	148.6	69.5	2,445	118.5
15	16	41.47	151.2	70.3	2,485	121.0
9	17	43.20	151.3	71.6	2,660	136.0
6	18	44.55	154.3	72.6	3,115	142.0
4	19	46.65	156.0	74.2	3,125	150 0

These measurements were made on the inmates of an institution in Italy.

In Table II by Weissenberg the number in some of the groups is not large, but the figures show a general regularity.

The poor are less in height and weight than the wealthy classes.

INFLUENCE OF POVERTY ON NUTRITION.

In Table III Vazhnoff shows the influence of unfavorable conditions on nutrition among Russian children.

DEGENERATION OF GROWTH.

According to Liharzik, growth is regular, and all deviation tends to produce disease, as disease also produces deviation. A large head is frequently accompanied with a contracted chest; here mental action may be slow — probably from deficient supply of purified blood. Boys of small frames often have rather large heads and are deficient in repose of character. City-bred children are usually more vivacious, but have less power of endurance than children reared in the country.

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[1] Experimental Study of Children, including anthropometrical and psychophysical measurements of Washington school-children; measurements of school-children in United States and Europe; description of instruments of decision in the laboratory of the Bureau of Education; child study in the United States; and a bibliography. Reprint (from Annual Report of United States Commissioner of Education for 1897-98), 325 pages, 8vo. Washington, D. C., 1899.

In the report of the anthropometric committee of the British Association for the Advancement of Science are given the results of observations in over 50,000 individuals. In Table IV is shown how the growth degenerates as we go lower in the social scale: there is a difference of five inches in average statures between the best and worst nurtured classes in the community.

From this table will be seen the relative statures of boys of the age of eleven to twelve years under different social and physical conditions of life. The zigzag line running through the means shows the degradation of stature as the boys are further and further removed from the most favorable conditions of growth.

TABLE II.

Age.	Length of body.			Weight of body.			Strength of lift.		
	Poor. Cm.	Middle classes. Cm.	Wealthy. Cm.	Poor. Kilos.	Middle classes. Kilos.	Wealthy. Kilos.	Poor. Kilos.	Middle classes. Kilos.	Wealthy. Kilos.
10 years	124.2	124.7	125.6	25.95	25.69	25.25	36.2	34.6	32.1
11 years	125.9	128.0	131.5	26.99	27.29	27.28	40.1	40.7	40.1
12 years	130.8	134.5	137.8	29.03	30.75	31.97	49.4	54.2	53.2
13 years	133.3	137.7	140.4	32.23	33.34	34.74	54.5	60.8	60.5

TABLE II. — Continued.

Age.	Length of body.			Weight of body.			Strength of lift.		
	Tailor. Cm.	Middle class. Cm.	Smith. Cm.	Tailor. Kilos.	Middle class. Kilos.	Smith. Kilos.	Middle class. Kilos.	Tailor. Kilos.	Smith. Kilos.
13 years	138.4	137.7	138.4	33.52	33.34	33.68	65.4	60.8	67.0
14 years	144.4	144.8	143.8	37.47	37.89	36.59	80.3	80.1	80.3
15 years	147.7	148.2	145.9	40.07	40.98	40.30	81.9	90.6	89.7
16 years	152.5	155.8	149.7	45.52	46.34	40.87	97.1	107.2	111.7
17 years	160.0	160.1	157.4	50.10	51.40	51.40	98.7	119.9	138.0
18 years	159.0	161.1	161.0	50.76	53.98	52.84	120.8	129.6	136.8
19 years	161.0	164.1	165.0	54.24	56.75	61.50	123.0	143.4	175.0
20 years	164.5	164.0	163.3	54.67	56.60	57.10	124.7	149.9	175.2
21–25 years . . .	162.5	164.8	166.5	55.37	58.51	61.69	132.0	143.7	185.5
26–30 years . . .	162.9	165.9	167.8	56.91	61.69	63 86	126.4	142.8	170.9
31–40 years . . .	162.4	164.3	167.2	58.09	60.45	63.91	105.0	133.0	165.0
41–50 years . . .	164.1	164.2	164.8	59.53	62.92	62.40	97.30	124.5	152.5

TABLE III.

Age.	Nutrition.													
	Boys.							Girls.						
	Poor.		Medium.		Good.		Total number.	Poor.		Medium.		Good.		Total number.
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	
1 year . . .	51	25	90	44	64	31	205	20	25	30	37	31	38	81
2 years . . .	38	21	68	37	76	42	182	7	15	19	41	20	44	46
3 years . . .	22	20	43	39	45	41	110	2	10	4	21	13	69	19
4 years . . .	7	13	25	47	21	40	53	1	16	4	68	1	16	6
5 years . . .	2	17	4	36	5	47	11	..	..	1	..	2	..	3
6 years . . .	..	..	..	..	1	..	1	..	..	..	..	..	..	..
Total .	120	21.3	230	40.9	212	37.7	562	30	19	58	37	67	44	155

WELL-TO-DO CLASSES SUPERIOR IN HEIGHT AND WEIGHT.

Dr. Paul Hasse in 1880 measured 2,806 children in Gohlis-Leipzig — 1,386 boys and 1,420 girls. The average heights and weights at different ages are shown in Table V.

Comparing the poor with the well-to-do classes, the results show that for boys of the same age the height varies from 0.7 to 4 centimetres in favor of the well-to-do classes; for girls it varies from 1.7 to 4.1 centimetres in favor of the well-to-do. The children of the well-to-do classes excel also in weight for the same age; for boys the excess runs from 0.3 to 4.7 pounds; for girls from 1.6 to 4.6 pounds. In general the difference between the classes is not so great as in other places, as in Freiburg and Turin, except in Boston, where the difference between the classes is less marked.

Hasse also gives data concerning the weak or defective children, who generally cannot attend school regularly. Such children are usually abnormally developed or have some chronic ailment. In the primary schools nine per cent. belonged to this class. A striking fact is this, that in many cases these children in certain years were over normal; that is, were taller and heavier than other children. This suggests that there is a certain normal relation between mental and physical development, the finding of which is one of the aims of anthropometry.

TABLE IV.

Height.	Total number of observations.	Public schools, country.	Middle-class schools.		Elementary schools.				Military asylums.	Industrial schools.
			Upper towns.	Lower towns.	Agricultural laborers, country.	Artisans, towns.	Factories and workshops.			
							Country.	Towns.		
60 inches . . .	6	2	..	3	..	1	..	..	..	..
59 inches . . .	16	2	3	5	2	2	..	..	1	..
58 inches . . .	35	9	9	8	5	0	2	..	2	..
57 inches . . .	66	11	17	13	4	4	5	5	7	1
56 inches . . .	118	21	23	27	14	4	10	3	15	..
55 inches . . .	230	28	35	57	32	15	13	17	33	..
54 inches . . .	329	33	53	68	47	24	36	20	46	2
53 inches . . .	361	15	55	58	47	26	34	38	84	4
52 inches . . .	441	14	37	61	58	36	52	59	118	6
51 inches . . .	370	6	25	40	36	28	45	57	123	10
50 inches . . .	367	7	23	27	32	17	46	61	143	11
49 inches . . .	252	2	8	20	14	12	31	40	114	11
48 inches . . .	132	..	3	1	7	4	11	20	76	10
47 inches . . .	102	..	3	4	5	7	5	13	59	6
46 inches . . .	22	..	..	..	1	1	3	7	7	3
45 inches . . .	12	..	..	..	..	..	..	1	10	1
44 inches . . .	1	..	..	..	..	..	..	..	..	1
43 inches . . .	1	..	..	..	..	..	..	..	1	..
42 inches . . .	1	..	..	..	..	..	..	..	1	..
Total . . .	2,862	150	294	392	304	181	293	341	840	66
Average height . .	52.60	54.98	53.85	53.70	53.01	52.60	52.17	51.56	51.20	50.02
Mean height . .	52.5	55.0	54.0	53.5	53.0	52.5	52.0	51.5	51.0	50.0

TABLE V.

Age.	Height.		Weight.	
	Boys. Cm.	Girls. Cm.	Boys. Pounds.	Girls. Pounds.
6–7 years	110.2	109.3	42.7	40.9
7–8 years	114.4	113.7	45.8	44.7
8–9 years	119.4	117.7	49.3	48.1
9–10 years	123.9	124.0	53.4	52.4
10–11 years	129.1	128.6	57.5	57.0
11–12 years	132.4	133.9	61.9	63.2
12–13 years	138.2	139.5	69.1	70.5
13–14 years	140.7	145.1	71.8	77.2
Over 14 years . . .	146.2	149.1	79.8	86.5

A PENSION FOR A DISTINGUISHED PHYSICIAN. — According to the *Lancet* for August 5th, her Majesty's government, on the recommendation of the governor-general of India in council, has conferred on the distinguished physician Sir Joseph Fayrer, as a reward for distinguished and meritorious service, a pension of £100 per annum.

Clinical Department.

AN EXTERNAL APPLICATION IN SCARLET FEVER TO SHORTEN THE PERIOD OF DESQUAMATION AND DIMINISH THE DANGER FROM IT.

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

IT is thought that scarlet fever is disseminated in part by means of the epithelium which is shed during desquamation. To prevent the spread of the scales during this time an application should be made to the skin and we can choose one that combines several qualities. It should be harmless to the patient, sticky enough to diminish the mechanical dissemination of the peeled skin and yet promote its removal and hasten the return of this organ to a healthy condition, and also have some germicidal properties. I have found glycerin mixed with hydrogen-dioxide solution containing a little free hydrochloric acid, which latter contributes germicidal properties to the mixture, to answer this purpose; one part glycerin to seven parts of a ten-volume hydrogen-dioxide solution. If the amount of hydrochloric or nitric acid in the dioxide solution is very small more may be added, but if the solution contains one-twentieth to one-tenth of one per cent. it will probably have considerable germicidal action if in contact with the scales for some time.[1]

Several years ago, in the scarlet-fever wards of the Boston City Hospital, I demonstrated that the period of desquamation could be shortened by the use of this mixture. The method which I used may be briefly described by quoting from a paper which I published in the *American Journal of the Medical Sciences*, August, 1895.

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[1] It should not be brought in contact with colored fabrics.

"In scarlet fever it seems to me desirable to prevent the dissemination of the epithelial scales which are often shed abundantly, and to hasten the removal of the layer of epithelium in order to free the normal skin. For this purpose I have the patient rubbed all over daily — avoiding the hair — with a mixture containing seven parts of ten-volume hydrogen-dioxide solution and one part of glycerin; if the patient finds this too sticky, the proportion of glycerin may be reduced. A quarter of the body may be done at a time, and some hours later another quarter and so on. As soon as any portion of the skin is normal the application may be there dispensed with." The average length of the period of desquamation may be reduced if this treatment is properly carried out. To shorten this period is desirable in private practice and in a hospital it has a money value. Take, for example, 1,000 cases; if this treatment will shorten the stay of the patients only three days (I found the average more than this) we have a total of 3,000 days, or eight years, saved.

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Medical Progress.

REPORT ON PROGRESS IN THORACIC DISEASES.

BY GEORGE G. SEARS, M.D., AND JOHN W. BARTOL, M.D., BOSTON.

(Concluded from No. 10, p. 241.)

OPEN DUCTUS BOTALLI.

The comparative frequency of cases of congenital cardiac defect persisting without essential impairment of development or marked circulatory disturbances, is again illustrated by two instances of open ductus Botalli reported by Burghart[7] and Drasche.[8] Both patients were adults, twenty-one and twenty-eight years of age, and neither showed anything of special significance in previous history or general examination; there was no cyanosis or evidence of defective blood supply.

In the first case there was visible pulsation in second intercostal space to left of sternum, apex beat strong and heaving just outside nipple line (space not stated), dulness from upper border of fourth, extending toward right as far as mid-sternum; above this dulness, however, was a "ribbon-shaped" area of dulness two and one-half to three centimetres broad, running upward near left sternal border; in the second left intercostal space was felt a strong thrill which seemed transmitted up and to the left, but could be felt everywhere over precordial area; in the second left space a sharply localized murmur occupying systolic interval and extending into diastole; no second sound except after rest in bed; murmur plainly heard ten centimetres from body; aortic sounds masked by pulmonic murmurs which were also heard in left interscapular region. From above facts, observer concludes that ductus was open, but he infers that there was probably also pulmonary stenosis.

In the second case pulsation was visible in the second and fifth intercostal spaces and a thrill palpable in second and third; apex in fifth, heaving; dulness beginning in second space and extending to right one centimetre beyond left sternum border; at apex systolic murmur, second sound pure; in second left space a peculiar systolic murmur of marked intensity; second sound somewhat accentuated and followed by a soft murmur; the systolic murmur at times quite rough and "whirling," loudly transmitted to carotids; over aortic area a systolic murmur and faint second sound. At autopsy (death due to caustic-potash poisoning) was found a small, thin-walled heart; the aorta and pulmonary artery touched each other at site of ductus Botalli, through which could be passed a probe three millimetres in diameter; through foramen ovale could be passed a bristle only. It was assumed that both systolic and diastolic murmurs were due to stream of blood pouring into pulmonary artery from aorta, where pressure is at all times greater.

The important diagnostic signs are considered to be a systolic murmur of extraordinary intensity, variously described as rasping, whirling, rustling, buzzing, or even musical, heard loudest in first or second left intercostal space, where also generally pulsation is visible and a thrill palpable; diastolic murmurs are less often heard. The area of heart's dulness is somewhat increased and Gerhardt describes as characteristic the ribbon-shaped area of dulness in the first and third space, corresponding to the dilated pulmonary artery.

ACUTE ENDOCARDITIS.

Harbitz[9] has made a careful study of all the cases of endocarditis which have come under his observation during the past four years. Forty-three of these were classed as infectious, of which seventeen were due to the streptococcus, five to the pneumococcus, eight to the the staphylococcus and three to other specific organisms. In addition there were ten cases of healed infectious endocarditis. Although due to the ordinary pyogenic bacteria they differed so markedly both in the pathological appearances and clinical history, that a division into two groups is fully justified. The first is represented by those classes whose point of origin is found as a rule in some local collection of pus and which run a rapid course as a fulminating pyemia with high fever. At the autopsy a diphtheritic membrane is usually found in the valves as well as ulcerative and necrotic foci in the valvular substance, and occasionally at their bases abscess cavities are seen running deeply into the cardiac muscle. At the same time multiple abscesses are found as a rule in the skin, heart, spleen, kidneys, eyes, etc. These cases illustrate the classical description of malignant endocarditis and most commonly result from infection with the pyogenic staphylococci.

In the second group, due chiefly to streptococci or pneumococci, the inflammation of the endocardium does not appear as one symptom of a general infection, but rather as the central focus from which the infection was spread. A striking feature is their long duration, four, six or even ten months elapsing between the appearance of the first symptom and the death of the patient. The onset of the disease is gradual, the first symptoms consisting of slight fever, rheumatic pains and malaise, which gradually give way to more serious manifestations, dyspnea, cough, hemorrhages, cyanosis and edema. Fever may be slight throughout, or it may be remittent or intermittent. Symptoms connected with the kidneys are often so pronounced that clinically the case is regarded as one of hemorrhagic or parenchymatous nephritis. Pathologically, destructive changes, ulcerations or abscesses, are rarely found, nor does a cellular infiltration or necrotic foci appear in the neighboring valvular tissue. The process, as a whole, appears to be an old one in the stage of organization, that is, it shows a tendency to cure. In these cases there are no pustules or abscesses in the skin, kidneys or heart, and no infected suppurating infarctions. The numerous infarcts in the kidneys and spleen are pale and dense, and the foci of softening in the brain are not suppurating, although the emboli causing them were detached from vegetations from an infectious endocarditis, loaded with bacteria. The kidneys are in a condition of acute or subacute parenchymatous or hemorrhagic nephritis. Bacteria are rarely found and the cause of the condition is probably a toxic one, secondary to the endocarditis; no rigid line can, however, be drawn between the two classes, since some cases due to streptococci or pneumococci run an acute course, while cases due to the staphylococcus may, though rarely, run a chronic course. They may also approach each other in their other clinical symptoms as well as in their pathological appearances.

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[7] Deut. med. Woch., 1898.

[8] Wien. klin. Woch., 1898.

[9] Deut. med. Woch., February 23, 1899.

Among the non-infectious cases of endocarditis he examined six occurring in acute rheumatism, in all of which a crop of small, warty excrescences was found along the line of closure of the valves, but never ulcerative or diphtheritic patches. Bacteria could not be demonstrated even by culture. These negative results were of interest since they failed to demonstrate either the microbes which have been claimed to be specific, or the attenuated forms of the ordinary pus products to which etiological importance has been ascribed. In nine cases of tuberculosis warty or polypoid growths were found in the valves, but the cultures were sterile in them all. In one instance a few tubercle bacilli were found in a cover-glass preparation, and in two others guinea-pigs died after inoculation with the valvular excrescences, but the causal relation between the endocarditis and the tubercle bacilli is very doubtful.

He has also found in other diseases, Bright's, carcinoma, etc., excrescences in the line of closure of the valves, without being able to discover any bacteria, so that it still remains to him an unsolved problem, whether to ascribe them to one or more infectious agents or to a form of chemical action from abnormal metabolism.

VESICAL ASTHMA.

Under this head Pawinski[10] reports several cases of paroxysmal dyspnea occurring in elderly men whose enlarged prostates had led to the accumulation of residual urine in the bladder. In every case there were changes in the circulatory and respiratory apparatus, such as arterio-sclerosis and emphysema. They were usually, however, to be regarded as incidental to age rather than as real pathological conditions, although in a few the pathological changes were more marked, as shown by the presence of a chronic myocarditis or valvular lesions. Treatment of these conditions failed to cure, while the effects of catheterization were so conclusive that it was impossible to doubt that retention was the cause of the trouble. He lays much less stress on reflex action than on auto-intoxication in explaining this relationship, as he believes the latter to be responsible in a majority of cases, from the similarity of the symptoms to those accompanying other cases of self-poisoning; a bladder wall which is no longer sound, owing to the prolonged retention of urine, being capable of absorbing toxic substances.

BRONCHITIS AND ARCHITECTURE.

Gee[11] says, in conclusion of the Lumleian Lecture on bronchitis and allied disorders, that it is highly probable that most catarrhs are due to a specific infection and are often dependent on contagion from man to man. The means of prevention are therefore to be found in ventilation and cleanliness, if, indeed, ventilation is not a form of cleanliness. Patients catch their catarrh either in badly ventilated houses or in buildings where men most congregate, especially in offices, shops and churches. Large shops, museums and libraries are purposely unventilated to prevent the injury of their contents by dust or smoke, while churches are never properly aired because their architecture does not admit it. The revival of Gothic architecture has been, from the sanitary point of view, a great mistake, and modern dwellings are no better than the churches. In domestic sanitation people have fixed their attention too exclusively upon drainage and the water supply; light and air are not reckoned. The well of the staircase ought to be a reservoir of pure air and to have an independent supply from without, yet in most houses it is ventilated only through the rooms, in fact is not ventilated at all, while the rooms themselves are not much better off. The subsidiary and merely ornamental arts, which do no more than please the eye, are studied to the neglect of that far greater art which promotes the happiness and welfare of the whole man, the art of preserving health.

DISPLACEMENT OF THE HEART IN PLEURAL EFFUSIONS.

From a careful study of a number of cases of pleural effusion by percussion, auscultation and the radiograph as well as by experiments on the cadaver Carrière[12] arrives at the following conclusions: In left-sided effusions cardiac displacement almost invariably occurs, but if the effusion be less than one litre and more than 700 grammes the apex maintains almost its normal situation, save that in the vertical position or in the right lateral decubitus it is lowered from two to four centimetres and tends to approach the median line. When more than one litre has accumulated the heart is so displaced that its long axis tends to become vertical, while the apex is lowered and moved toward the right, until in the presence of two and a half to three litres it is found in the neighborhood of the xiphoid cartilage. With more than three litres of fluid present the heart is moved *en masse*, together with the mediastinum, toward the right, but it remains vertical with the apex near the xiphoid. Twisting of the heart on its axis is never observed.

In right-sided effusions under one litre there is no cardiac displacement, except that with the patient in the vertical or left lateral position the apex is displaced two to four centimetres to the left; with more than one and less than three litres present the apex is displaced from three to eight centimetres. With larger amounts the displacement does not exceed ten centimetres. Double effusions lower the heart *en masse* and tend to straighten its axis.

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[10] Rev. de Méd., March 10, 1899.

[11] Lancet, March 18, 1899.

[12] La Presse Méd., December 17, 1898.

DISPLACEMENT OF HEART IN PLEURISY.

Pitres[13] in a short note says that he has been led to the somewhat paradoxical conclusion that displacements of the heart in pleurisy, far from being a source of danger to the patient, should be regarded as a providential proceeding to protect the central organ of circulation from the increased intrathoracic pressure. A pleural effusion exercises an eccentric pressure in all its surroundings, while the mediastinal displacement has the effect of moving the heart *en masse* and not by a movement of rotation on its axis, which is anatomically impossible. The acting agent in protecting the heart is the pericardium with its solid attachments above and below. An effusion into the pleura lowers the diaphragm, which draws in the pericardium, rendering it tense and vertical, thus displacing the heart and giving an opportunity for the auricles to function, etc. In a bilateral pleurisy this mechanism is not possible, hence its danger.

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Reports of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Twenty-first Annual Congress, held in Chicago, May 22, 23 and 24, 1899.

FIRST DAY.— MORNING SESSION.

PRESIDENT'S ADDRESS.

The President, **William E. Casselberry, M.D.**, of Chicago, delivered the following address:

The honored custom of an address from the chair affords opportunities for suggestion looking to the welfare of our organization and of the department of medicine which it represents which would not find expression in any set paper or formal discussion. I think all are conscious of the change in the drift of laryngological practice wrought of recent years, first, by the evolution of nasal pathology, and secondly, by the appropriation of the ear. From a physician treating affections of the throat and chest, the laryngologist is fast becoming a surgeon with a routine of practice limited to local measures as applicable to the upper respiratory tract alone. While freely conceding progress has been realized along local surgical lines I deprecate the tendency of the day to deal with the throat and nose exclusively in a mechanical way as if they were organs detached. I believe it engenders narrowness of thought, and that, through habitual disuse, there is gradually lost to the physician much of that fundamental knowledge of pathology and applied therapeutics which is so essential to the welfare of the patient. There are now nasal enthusiasts whose idea of the subject entire seems to consist in the establishment of a wide patency of the nostrils.

The intimacy of the ear with the throat and nose is conceded. The laryngologist has the treatment of aural affections actually thrust upon him. Even the patient's discernment convinces him that the laryngologist's skill and equipment are the means best adapted to the end. And having appropriated the ear one should cultivate an exhaustive knowledge of the organ, but as an addition to laryngological lore, not as substitute for a part thereof. Aural enthusiasts have developed among laryngologists whose commendable studies of the ear have been a help but who centre their attention so forcibly upon that organ as to convey the impression of neglect of fundamental laryngological precepts.

Add to these our *confrères* in smaller towns who find it expedient to group together the eye, ear, nose and throat and we encompass numbers who to-day are posing as laryngologists whose education, interests and restricted routine of practice put them out of touch with important medical and systemic phases of the subject.

Do latter-day laryngologists as a class habitually endeavor to establish the real diagnosis in the earliest demonstrable stage of pulmonary tuberculosis? Are not such patients liable to come first before us with their irritable throats, hacking cough, tendency to hoarseness and inclination to rhinitis?

It is not claimed that the laryngologist must of necessity embrace in his practice all pulmonary diseases — that is a matter of choice and expediency; but it is urged that he be ready to apply all the arts of diagnosis and that he be conversant with every resource known to medicine in the treatment of pulmonary conditions for the benefit of cases of laryngopulmonary tuberculosis, laryngobronchitis, bronchial asthma in association with ethmoiditis, and other conjoined pathological conditions of the upper and lower respiratory tracts.

Nor will it answer to omit attention to the heart, aorta and mediastinal contents. Paralysis of a vocal cord through pressure on the recurrent nerve by an aneurism is a simple proposition, but more complicated ones which require a high degree of diagnostic skill are continually encountered.

Regarding the treatment of pulmonary conditions, especially tuberculosis, cases which are not complicated by affection of the throat are naturally claimed by the department of internal medicine. It is not possible, nor even desirable, to draw an absolute line at this point between laryngology and internal medicine; in practice they are bound to overlap, but conceding that if drawn anywhere it would be here, there remains a considerable proportion of pulmonary cases in which the upper respiratory tract is so far implicated that they fall naturally under the care of the laryngologist. Hence, as before said, he should be conversant with every resource known to medicine in the treatment of pulmonary states. He should be a good systemic therapeutist and continue to cultivate the art of prescribing, realizing the uses as well as the limitations and abuses of internal medicine. Above all, one should study the conditions of natural immunity and susceptibility in order that having made an early diagnosis one may direct the mode of life and place of abode best adapted to arrest the disease and overcome the susceptibility. This implies a ready familiarity with sanitation, hydrotherapy, climatology and sanitarium resources and methods. We get little convincing information concerning climatic effects upon laryngeal tuberculosis. While Heryng, Krause, Gleitsman and others have demonstrated the value of surgical measures in suitable cases of laryngeal tuberculosis, there are yet so many which are unsuitable for this line of treatment that one turns with gratification to the reports of Solly and Levy from the Rocky Mountain region to find that unmistakable laryngeal tuberculosis in the proportion of 20 per cent. recovers in that climate, and that another 20 per cent. lives along indefinitely, greatly improved. Carefully studied reports from other resorts would be welcome and laryngologists at large should thoroughly familiarize themselves with the principles of climatology in order to intelligently serve their patients.

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[13] La Presse Méd., April 24, 1898.

In connection with bronchial asthma, studies in nasal pathology have furnished gratifying information concerning the associated polypoid changes in the ethmoid region, and they tend inferentially to establish a vasomotor defect as the common cause of both the nasal and bronchial symptoms. Pronounced relief and often a practical cure may be effected by nasal treatment. This the laryngologist is much more likely to secure if he show himself willing and ready to assume full charge of the case, attending not only to the nasal surgery but exhausting the pharmacopeia and climatic resources to bring the fullest measures of cure or relief.

For a familiarity with bacteriologic technique there is a constant need in the practice of laryngology. The hunt for the Klebs-Löffler bacillus is already popularized. The search for the Cannon-Pfeifer bacillus of influenza and for the micro-organisms of pneumonia should be reduced to the same practical basis. "We will be raised in our esteem in the degree that we add a little more science to our art."

All laryngologists are familiar with the many throat conditions which appear as salient features of underlying systemic states and yet in the overswing of the movement toward localism general pathological data, systemic therapeutics and hygienic aids are not always utilized to the utmost. How often is edema of the larynx merely secondary to chronic nephritis, and laryngeal ictus simply the forerunner of locomotor ataxia? Indeed I might enumerate indefinitely associated throat and systemic states, but I have said enough, I think, to support the contention that the laryngologist should continue as of old to be first of all a good physician and after that something more, a specialist.

Nor need a man with this breadth of view be any less skilled in the operative technique of tonsillotomy, in the correction of deviated septa, the surgery of the collateral sinuses and the mastoid operation. He can appreciate the disadvantage of nasal obstruction just as well as another who perceives that only.

Let us profit by each other's experience, search along liberal lines and endeavor to realize Emerson's conception of power: "A cultivated man, wise to know and bold to perform, is the end to which nature works."

Dr. J. W. Farlow, of Boston, read a paper entitled

IS THE SO-CALLED "AMERICAN VOICE" DUE TO CATARRHAL OR OTHER PATHOLOGICAL CONDITIONS OF THE UPPER AIR PASSAGE?

By "American voice" is meant the characteristic nasal twang so commonly noticed in Americans. Conditions of the larynx and fauces which cause their own distinctive vocal impairment are not here considered. We do not mean by the term "American voice" the thick voice and that of low carrying power. Any condition which hinders the passage of air into the nose tends to diminish the nasal resonance, and does not contribute to the production of the nasal voice.

Where we have anterior septal deviations and spurs, the air during vocalization vibrates abnormally in the nasal chambers; so also when the nose is narrowed at the tip, and where we have anterior polyps or anterior turbinal enlargements. Frequently is seen chronic catarrhal inflammation of the mucosa without hypertrophy. From all these causes there results anesthesia and paresis of the soft palate, and some tones which should be formed in the mouth are formed higher in the nasopharyngeal space. This explains the occurrence of the nasal twang after operations for the removal of adenoids, which is apt to persist until the palate has regained the tonus lost from disuse. Atrophic rhinitis does not seem to cause a nasal voice.

It is convenient to classify our patients for purposes of this study into those up to twelve years, those between twelve and thirty, and those above thirty. In the first class the nasal voice is common, but the lesions enumerated above, which might seem to stand in a causative relation thereto, are not common. In the second class these lesions are more common than in the first class, but the occurrence of the nasal voice is not more common, and does not appear, therefore, to have any constant relation with the apparent formative causes. In the third class the nasal voice is less common than earlier in life. From the foregoing considerations, it is obvious that the nose is not the determining factor in the formation of the nasal voice, because the nasal lesions do not determine the classification into nasal and non-nasal voices. The voice can often be improved by training without any medical or surgical interference, and pathological states have more to do with the range and power of endurance of the singing voice than with the quality in the medium register. The nasal voice is more often a matter of imitation. Good public speakers and actors often have poor vocal organs from a purely anatomical point of view.

Anterior obstructions are common in all civilized races. Some of the most pronounced nasal voices are heard in country villages. In the United States the great influx of foreigners has introduced all sorts of vocal sounds into common speech, and we are quite indifferent to the best methods of speaking. Hence, children should be carefully trained in this respect — for in them imitation of the vicious vocal methods they constantly hear is the most potent factor in the production of the nasal voice. Every fall our daily papers are filled with the advertisements of singing-teachers, but for every one who aspires to sing there are one hundred who use the voice for conversation only. These latter are content to speak after the manner of the community in which they live, and no thought is given as to whether this is a proper manner or not.

Dr. G. Hudson Makuen, of Philadelphia, opened the discussion. He said that far more attention should be given to proper methods. As a rule, physicians know little about the subject. Laryngologists should instruct singing-teachers. The "American voice" is due to the excessive tension of our modern life. We should cultivate the gospel of relaxation, for our "push," so called, is fast getting to be a national calamity. The active anatomical factor in nasal voice is probably a low-hanging palate during speech. The sound vibrations are centered in the post-nasal space. We must train the levator palati muscles, which can be done by having the patient practise several times daily with open mouth before a mirror.

Dr. L. Amory de Blois, of Boston, thought that racial condition had much to do with the character of the voice. We are all familiar with the guttural of the German, the vibratory nasal French voice and the high-pitched voice of the Yankee, while the English voice, no matter what the social rank, is always of an agreeable, low pitch.

Dr. John O. Roe, of Rochester, said that the nasal sinuses had much to do with voice production, as they act as resonators. The voice depends on the size of the cavities and on their shape, both of which vary greatly. Anterior nasal obstruction does not cut off the influence of the resonators, while posterior obstruction does. So, also, the peculiarities of the various languages are a factor. Those who use many consonants, as Germans and Russians, have low-pitched voices, while an excessive use of the. vowels, as in French, conduces to the opposite result.

Dr. A. W. de Roaldes, of New Orleans, spoke of American conversational habits, and of the fact that in the South the conventional voice tone was much lower than in the North. This might be due partly to a mixing of various race bloods in the former section, and to the lazier mode of life. The negro voice was not much addicted to tonalities.

Dr. Thomas Hubbard, of Toledo, thought that much of our high-pitched speaking was due to the noise of our American cities, where it was often necessary to speak in a loud, high tone in order to make one's self heard. So, also, the ear becomes, from its noisy environment, obtunded to the appreciation of such misuse of the voice.

Dr. Farlow said that the low palate was often due to lack of use, but was not the original cause of nasal voice. It was secondary and not primary in its causative relation. As to the influence of the sinuses. he said that nasal voice was common in children in whom the sinuses were scarcely at all developed. English is spoken in many countries, in none of which does the voice have the same qualities as in this country. Voice is not, therefore, primarily a matter of language. As to city noises entering into the question, he had often noticed the most pronounced cases of nasal twang in country villages.

Dr. James E. Newcomb, of New York, read a paper on

ADENOCARCINOMA OF NOSE, WITH REPORT OF CASE.

Allusion was made to the fact that two cases of this nature had been reported to the Association two years ago, and that up to that time there were on record the notes of twenty-three similar cases in which the clinical diagnosis had been verified by microscopical examination. The writer's case was that of a woman aged sixty-one years of age, a widow of American parentage, who had suffered since June, 1898, with obstruction of the left naris, and almost daily nosebleed. The latter had been severe on one or two occasions, but had never required any operative interference At times there had been a slight watery discharge with a slightly offensive odor. She had lost some flesh and strength. In September last she had blown from that side of the nose what she described as a "fleshy bean" and which was probably an ordinary polyp.

The left middle turbinate was found considerably enlarged, and the mucosa over it seemed to be in a condition of polypoid degeneration. About it were some fleshy proliferations, which bled easily upon manipulations with the probe. There were no glandular enlargements and no pressure symptoms. The masses were removed under cocaine anesthesia without incident. The report of the microscopist was adenocarcinoma. Radical interference was refused by the patient.

In looking over the literature of the subject during the last two years, Dr. Newcomb had been able to find the records of six additional cases. Cancer of the nose is relatively rare. Gurit was able to find only four cases out of a total of 9,554 cases of cancer of all organs. It is claimed that there is nothing more than coincidence between the association of the ordinary polyp with carcinoma. Tissier, who has written at length upon this phase of malignant disease, does not believe that the epitheliomatous degeneration of simple polypi has ever been definitely proven. What we know, he says, about the etiology of polypi explains their occurrence in a cancerous nasal fossa. On the other hand, Plicque states that it is pretty frequent after the ablation of numerous benign polypi, to find new polypi appearing composed this time of epitheliomatous tissue. Dr. Newcomb could hardly accept the truth of the latter statement, for polypi were very numerous and were often removed by very crude means, while the occurrence of cancer here was so rare.

Mention was also made of a surgical procedure proposed by Dr. Dawbarn. It consisted of the ligation on both sides (a suitable interval occurring between the two operations) of the eight branches of the external carotid artery and the excision of the entire trunk of this vessel in the attempt to starve the growth by shutting off its blood supply.

Dr. George Woolen, of Indianapolis, related the history of a case of malignant disease of the nose occurring in a girl of eight years, following an injury received two years before. Nasal polypi, so-called, were removed and pronounced by the microscopist to be non-malignant and only simply mucoidal in character. Pressure symptoms were prominent. The growth was found to recur over an increasing area and the case was pronounced to be non-operable. The later clinical history clearly demonstrated the fact of malignancy.

Dr. J. L. Goodale, of Boston, mentioned a case of adenocarcinoma of the nose occurring in a man of fifty-one years. The left naris was filled with a soft bleeding mass, showing after removal and examination a fibrous stroma with epithelial cell nests. There was bulging of the eye, much pain and nasal obstruction. Removal was followed by recurrence.

Dr. Newcomb, in closing the discussion, urged hearty co-operation and association of the clinician with the microscopist in the management of cases of doubtful nature in their incipiency.

(To be continued.)

A Third Attack of Typhoid Fever. — M. Pérochaud (*Gazette médicale de Nantes*, July 22d) records a case of a third attack of typhoid fever in a man forty-eight years of age. The attack proved fatal. — *New York Medical Journal.*

THE BOSTON
Medical and Surgical Journal.

THURSDAY, SEPTEMBER 14, 1899.

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THE REPORT OF THE PAUPER INSTITUTIONS TRUSTEES.

THIS document is of more than usual interest, owing to the active development which has been going on of late in the institutions of Boston devoted to the care of the dependent poor. As most of our readers know, there has been a vigorous attempt made during the last few years to raise the institution at Long Island out of the level of a mere asylum for the non-insane, but destitute and inefficient, part of the population into a position of dignity and significance from a broadly medical as well as charitable point of view. To this end, so far as the hospital side is concerned, a staff of visiting physicians has been appointed, who make medical visits as frequently as the somewhat unsatisfactory boat service permits, and whose aim it has been to establish the methods of well-organized hospital routine in the diagnosis of disease, and in the care of the patients under their charge. A training school for nurses, to which we have before had occasion to refer in these columns, has been established, and is rapidly developing into a success. Out of an almshouse hospital, with but scant medical attendance, has grown a hospital, to which the public at large and the medical profession may rightly look for practical work of a high character, and, it is hoped, later for researches of value. The opportunity in this last line, that of original scientific research, lies unquestionably in the very fact of the chronic character of the diseases there under observation. The material is there; the enthusiasm for research only is lacking, a spirit which, no doubt, it will require time and precedent to establish. In the meanwhile it is well to remind our readers that such a hospital exists near at hand, whose function it is to treat persons suffering from chronic forms of disease and to study their diseases by modern methods.

The report before us is interesting in many ways, and first from the admirable consideration of the problem of pauperism, or, in last analysis, the problem of physical and mental incapacity, which it is quite within the province of the broad-minded physician to investigate. The "rounder" question is taken up and the intention expressed of studying even more carefully than has yet been possible the manifold causes which lead to this repeated passage of certain persons through the various public institutions. Statistics of much interest are brought to bear upon the subject, but it is clearly a matter, like many other social evils, which will require a long period of painstaking study before broad conclusions may be drawn. To the physician the questions of alcohol and syphilis are all-important in this connection, for to one or the other of these two causes may certainly be attributed much of the degeneracy and incompetency everywhere observable, but particularly conspicuous in an institution devoted to the care of those who through excesses of various sorts are brought to a condition of absolute dependence. It has somewhere been remarked and is always a significant fact that the difference between the degeneracy of the pauper and of the well-born is rather one of appearance than fact. Precisely the same influences permeate society at large and it is merely chance circumstance which makes conspicuous the disgrace of the one and shields the downfall of the other. The broadly human problems which an institution like Long Island presents certainly reach from the top to the bottom of society. Because our opportunities for study are solely at the bottom in no way alters the fundamental problem. It is clearly the intention of the trustees to work out the problems which the institution offers, as a glance at their report shows. For example, the detailed histories of three families are given in the form of tables, which must be of great interest to the student of degeneracy.

Regarding this matter, the report says:

"One cannot look into the antecedents of an almshouse population without coming across some of the tangled and interwoven threads of pauper and semi-criminal and defective relationships. Three such instances are given, one of which leads back to a home in the old Crystal Palace building on Lincoln Street. It is only in retrospect that we get full sight of the ramifications from such centres of degenerate life; although they should not be accepted as representing frequent conditions, it is worth while to study them with care, so that if possible in the case of persons of similar tendencies now coming into and going out of the almshouse, through the full co-operation of all municipal, educational and philanthropic organizations which touch these lives at any point, we may set some check to the contagion. There is already a natural check to it, if we can trust the general evidence of our records, as an examination of the cases of pauperism in the second generation shows a tendency to elimination by infertility and early death."

All these matters we maintain are so intimately associated with the general health of the community that they become medical as well as social problems.

Turning, however, to that part of the report which concerns itself chiefly with the strictly medical side of the work, we find a highly encouraging outlook for the future. The visiting medical staff reports progress in every direction, which has been due in great measure to the hearty co-operation it has received from the trustees, superintendent and resident medical staff. With all the difficulties attending the care of the class of patients of which the hospital is largely composed, an excellent degree of discipline has been attained, and a distinctly hospital spirit introduced.

In the words of the report, "No one thing has conduced more to orderliness than the commitment to proper hospitals of noisy and troublesome insane patients. The policy has been to transfer those persons who, through their disordered mental state, have interfered with the welfare of non-insane patients, thereby relieving the hospital of patients for whom it is not intended and also assisting toward a proper classification of the dependent poor." It would seem to us altogether desirable that this policy be consistently carried out. The principle is undoubtedly sound, and it is the duty of the city to provide accommodation in all cases for the troublesome insane, in institutions where they will be neither a menace nor a disturbing element to patients who are not mentally affected.

It is also of interest to note the fact that since the introduction of adequate methods of infant feeding the deaths due to digestive disturbances have been reduced to one-quarter of what they were, a result perhaps partly due to the equipment of a sunny nursery. During the period immediately after the war with Spain one hundred and twelve soldiers were treated, with no deaths.

The visiting staff in concluding their report make the following statement: "In conclusion, we beg leave to state that, in our opinion, one of the most pressing medical needs of the city is a properly appointed hospital to which those suffering from incurable disease may be sent. This need the Long Island Hospital should supply more completely than is at present the case. To this end we hope that in time persons may be admitted to the hospital for temporary or permanent treatment, without the stigma which attaches to the name of pauper. Could this be accomplished, we feel sure that the range of usefulness of the hospital would be materially extended."

◆

SCIENTIFIC STUDY OF PHYSICAL TRAINING.

In our issues of August 31st and September 7th was published a paper by Dr. Eugene A. Darling, on "The Effects of Training. A Study of the Harvard University Crews." We desire to call attention not so much to the details of Dr. Darling's interesting investigation, for which we would refer our readers to the original paper, as to the significance of such studies in general with reference to the highly important matter of athletic training.

As in every other question which excites much public attention, there have been two fairly well-defined points of view regarding the effects on the participants of athletic contests requiring a high degree of skill and muscular effort. The enthusiast for sport has strenuously maintained that only good results to the individual and to the general cause of physical development. The more conservative, but often no less interested, believer in athletic sports has urged that the training incident to one of our great college contests is inconsistent with physiological laws and, on the whole, is harmful rather than helpful to the individual, and hence to the general cause of athletics. Both of these opinions have no doubt been sincerely held, and many theoretical arguments have from time to time been adduced in support of one or the other view. The point of interest, however, is that a matter capable of approximate demonstration has been so long neglected, and no really scientific study made of the men undergoing training, to determine the actual results of the contests upon their bodily processes and organs. It is clearly a matter about which it is useless to theorize when certain definite facts may readily be determined. When facts are exhausted, theories may be in place, but not before.

It is for this reason that Dr. Darling's investigation is of great significance. He has had the opportunity of studying a body of highly trained men both before and after a contest requiring a high degree of skill and muscular endurance and has tabulated his results. He has found that certain changes in the circulating apparatus and excretory organs are easily demonstrable by means of the methods of physical diagnosis now at the disposal of any well-educated physician. The positive results he has given us are of the greatest importance in themselves and as a basis for further investigation, and the way has thereby clearly been opened for a substitution of fact for theory. Williams and Arnold have also done valuable work in the same line in determining certain physical conditions resulting from long-distance running. The methods which these investigators have adopted need merely to be extended, as Dr. Darling admirably points out, until we have a science instead of a theory of physical training. There is here evidently a field for much good work. The metabolic processes must be studied; the excreta examined chemically, the manifestations on the part of the nervous system closely scrutinized; statistics extending over years must be compiled and compared, and when all this is done we may frame our theories. Unquestionably the greatest need of the present is to tabulate exactly the physiological effects of training and of violent athletic contests, in order that we may as soon as possible get at a criterion, which will bear scientific analysis. This is certainly possible, and such work as Dr. Darling has just published does much to hasten the day. That it has been so long in coming is undoubtedly a reproach to our methods of physical training hitherto in vogue, and should be a stimulus to renewed work along these lines in the future. We have no doubt that many obscure questions will thereby be settled.

MEDICAL NOTES.

The Yellow-Fever Situation. — No new cases of the disease have developed at New Orleans. Cases at Mississippi City are reported as mild and doing well. At Key West up to a few days ago there had been 135 cases and 10 deaths. Several passengers on the steamer *Lampasos*, from Galveston and Key West to New York, have shown suspicious symptoms, and one has developed the disease. In Cuba during the month of August there were 55 cases and 20 deaths.

Death-Rates of Abstainers and Drinkers. — According to the *Medical Record*, of 4,234 deaths collected by the British Medical Association the ages of death in classes were registered, together with the cause, and the average of death for each class computed with the following result: Total abstainers lived on an average 51.22 years. The habitually temperate class lived on an average 62.13 years. Careless drinkers lived on an average 59.67 years. The free drinkers lived on an average 57.59 years, while habitual drunkards lived on an average 52.03 years.

Hospitals in the Philippines. — In view of the increased army now being sent to the Philippines, we learn from the *Medical News* that Surgeon-General Sternberg has issued orders for an increase of the medical department and hospital accommodations at Manila. As six months is required for building a large wooden hospital, it will be necessary to depend either upon tent hospitals or upon buildings already constructed which may be obtained for the purpose, so five hundred hospital tents have been ordered. Two hundred and fifty members of the hospital corps will be sent on the *Missouri* and twenty female nurses on the *Relief*. Four experienced surgeons of volunteers, with the rank of major, are now under orders for Manila in addition to the commissioned medical officers belonging to the new volunteer regiments.

BOSTON.

Acute Infectious Diseases in Boston. — For the week ending at noon, September 13, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 60, scarlet fever 14, measles 6, typhoid fever 38.

NEW YORK.

Improved Building Laws. — The members of the Tenement House Commission which was appointed in 1894 to study the field of tenement house construction and report to the Legislature, and whose recommendations were later embodied in building laws, have expressed the unqualified opinion that the new building code of the City of New York, which has just been prepared by the Building Code Commission, will tend to improve the construction of tenement houses as well as of other buildings. The reduction in the thickness of walls and of floors, rendered possible by the improved methods of construction now in use, which the new code permits, is regarded as an advantage in tenement houses, and the section of the code applying to fire appliances is looked upon as especially advantageous for tenements.

Charges against the Society for Prevention of Cruelty to Children Dismissed. — Albert Stickney, appointed referee by the Supreme Court to inquire into the charges of mismanagement preferred against the Society for the Prevention of Cruelty to Children, has filed a voluminous report in which he sustains in every instance the claims and defence put in by the Society, and praises its management in the highest terms.

A Dinner for Naval Pharmacists. — The Manhattan Pharmaceutical Association is making arrangements to give a banquet in honor of the pharmacist of the *Olympia* at the time of the Dewey celebration, to which the pharmacists of Admiral Sampson's escorting fleet are to be invited. The *Olympia's* pharmacist is said to be the youngest officer of his grade in the service. In June, 1898, a bill was enacted providing for the appointment of twenty-five pharmacists, with the rank of warrant officers. These appointments were made from among the senior apothecaries in the service, with the exception of the apothecary of the *Olympia*, who, for distinguished services, was promoted to this rank, although he had been in the service only about ten years.

Death of Sister Consalva. — Sister Consalva, who was for thirteen years the Mother Superior of the Sisters of St. Francis of the Poor in charge of St. Peter's Hospital, Brooklyn, died at the hospital on September 4th. When she became Mother Superior of the Sisters at St. Peter's that institution was located in a small frame building, and it was chiefly through her efforts that the fine structure now occupied by the hospital was built. She was a native of Germany, and sixty-seven years old.

Miscellany.

PUBLIC MONEY FOR PRIVATE CHARITIES IN NEW YORK.

On September 7th Controller Coler presented in the Board of Estimate and Apportionment a resolution embodying the terms and conditions on which he thinks it advisable that any public moneys appropriated from the city's budget for the support of private charities should be dispersed. Accompanying it was an exhaustive report on the general subject of such appropriations, to which the controller has been devoting so much attention in the last few months. In it he gives expression to the belief that the best results will be obtained if the Board of Estimate will decide upon a policy which should first decide clearly the relations to be established between the city treasury and private charitable institutions, and then move toward that end by gradually conforming the appropriations in the budget to that ideal in such a manner that progress shall be made as rapidly as may be consistent with the desire to avoid crippling excellent charities which have been led to depend for many years upon public assistance.

The city's appropriations for paupers in private institutions increased from $1,845,872 in 1894 to $3,131,589 in 1899, and in view of the additional responsibility placed upon the Board of Estimate by the Stranahan Act, the controller says, he made a thorough investigation of the existing conditions. All institutions receiving public moneys were requested to submit sworn statements as to their work and finances, and these, together with special reports from the State Board of Charities, the State Charities Aid Association, the Charity Organization Society and the New York Medical League, accompany his report. A considerable portion of the latter is devoted to medical charities, in which the present system finds its greatest abuses, and in commenting on this topic Mr. Coler says, in part:

"While sometimes overcrowded, it frequently happens that the city hospitals are not filled to the limit of their capacity, and it would seem as though the city should not deal with private hospitals except as subsidiary aids or adjuncts to the public institutions. It stands to reason that as long as there are vacant beds in the city hospitals, and the city is at the same time subsidizing private hospitals at a cost greater than the expense of caring for patients in its own institutions, a wrong is done to the taxpayers. If private hospitals are to receive public assistance at all, it would certainly seem that payments should be made only at some uniform rate approximately the same as the cost *per capita* of maintenance in the public institutions (not including the cost of general administration, which would be constant in any event)."

The appropriations for dispensaries for next year, he recommends, shall be limited to one-half the amount appropriated in 1899.

THE ETIOLOGY OF BERI-BERI.

THE *British Medical Journal* refers to an interesting contribution to the subject of beri-beri, in which Dr. Laurent gives an account of a sharp epidemic of this disease which attacked the Annamite soldiers forming part of the French troops of occupation of Chautabun (Siam). Acting on the view of Dr. Brémaud that fat plays an important part in the prevention of beri-beri, steps were taken to include this important article of diet in the rations, and in forty-eight hours the epidemic was arrested. That the absence of fat in the dietary is not the sole factor in the production of the disease was proved by the fact that one of the worst cases occurred in a Frenchman, but he was the only European attacked, and rapidly recovered on removal from Chautabun. This case would point to an infectious factor. On his return to Saïgon, Dr. Laurent had an opportunity on the voyage of visiting the island convict settlement of Poulo-Condore, where he found beri-beri very prevalent — in fact, there had been 360 deaths from it in the year, and there were no fewer than 160 cases under treatment. His experience of the influence of fat on the course of the Chautabun epidemic led him to recommend its trial, with beneficial results. Commenting on the foregoing, Dr. Brémaud refers to his experience of the Poulo-Condore Settlement in 1877–78, when the cutting off of fat in the dietary of the convicts was followed by a severe outbreak of beri-beri with many deaths. The epidemic immediately ceased when the original fat-containing diet was resumed. Dr. Brémaud also observed an outbreak on board the English vessel *Ilione* in 1879, whilst in charge of a consignment of coolies shipped from Pondicherry to Martinique. During the voyage, which lasted four months, Mohammedans only were affected by the disease. On religious grounds they systematically abstained from fat (pork). The other coolies who partook of the pork escaped. These facts certainly point to the importance of fat, and there should be no difficulty in putting the views of the French observers to the test. In this connection it would be interesting to know what part fat formed of the dietary of the Richmond Asylum, Dublin, before the appearance of beri-beri there. There can be no doubt that suet, dripping, fat pork, the fat of milk, and so forth, are most valuable articles of diet, and their exclusion from the dietary a fruitful factor in the development of rickets, tuberculosis, and possibly of leprosy also.

HOSPITALS AND MATRIMONY.

THE *Medical Press and Circular* very sensibly comments as follows on the relation between nurses and medical officers in institutions where they are naturally much thrown together.

"A discussion which ought by rights to have been relegated to the silly season has been carried on in one or more of the New York newspapers concerning the matrimonial propensities of the nurses employed in the large general hospitals of the metropolis, though it is not pretended that the practices complained of are by any means limited to this *milieu*. The allegations in the main do not impugn the morality of the nursing fraternity, or shall we say sisterhood, but it is asserted that nurses and doctors 'flirt and carry on,' and that many nurses regard the hospital as a field for the matrimonial campaign. There is doubtless a certain amount of truth in this, for most of us can call to mind numerous instances of marriage between medical residents and nurses and even between nurses and their patients. Whenever a young man of prepossessing appearance is brought into daily and even hourly contact with a comely young woman, shown to advantage in a neat attire, who is not on principle averse from matrimony, there is always the possibility, *Dieu merci*, of a matrimonial sequel, and although a hospital ward is not an ideal *milieu* for Cupid's ravages, the very community of purpose and emotions paves the way to tenderer feelings. The rules at most institutions err, if anything, on the side of severity in the direction of repressing and reproving any intimacy between medical officer and nurse, but though they may hinder flirting pure and simple, neither they nor any rules that female ingenuity, as represented by the matron, may devise can be relied upon to stamp out this very human instinct — nor should we approve them if they did."

THERAPEUTIC NOTES.

TREATMENT OF MASTITIS BY INTRAGLANDULAR INJECTIONS OF CARBOLIZED WATER. — Dr. W. Rubeska,[1] professor of obstetrics in the School of Midwifery at Prague, adopts the following treatment for mastitis in nursing women. As soon as an inflammatory infiltration of the gland is detected the nipple is thoroughly disinfected, and compresses saturated in a 0.5-per-cent. solution of sublimate are applied to it for two hours. Then the excess of milk in the breast is drawn off by aspiration and an ice-cap applied over the breast. When the mastitis begins with a chill followed by fever and severe pains, an injection is at once made into the depth of the parenchyma of the infiltrated organ of two or three cubic centimetres of a three-per-cent. carbolized water. If the beginning of the affection is less pronounced, then the injections may be made on the next day, in case the fever and the pains do not subside. Out of 16 cases in which Rubeska employed this method of treatment, the formation of an abscess was avoided in 14; the temperature became normal on the same day when the injections were made, and by the following day the inflammatory infiltration began to disappear rapidly. In some cases it became necessary to repeat the injection a second or even a third time, on account of the formation of fresh inflammatory points in the same breast or in the opposite one.

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[1] Bulletin Général de Therap., July 30, 149.

The Treatment of Pleurisy by the Local Application of Guaiacol.— Prosoroffsky [2] treated 11 cases of pleuritic effusion by the local application of guaiacol over the skin of the affected side; he finds that the absorption of the effused fluid takes place more rapidly than when any other method is employed, without causing any inconvenience to the patient. The applications are generally repeated six or seven times, after which a fall in the temperature is noted from one to five degrees F., although it rises again in a few hours. The action of guaiacol is explained thus: First, an effect is produced on the peripheral nerves which influences appreciably the vasomotor centres, and secondly, the guaiacol being absorbed by the tissues destroys the noxious agencies elaborated by the pathological process in pleurisy.

Cardiac Medication in the Treatment of Epilepsy. — Bechterew [3] recommends the addition of adonis vernalis to the potassium bromide in the treatment of epilepsy, and refers to a case in which this mixture was employed with success in an adult who was to be subjected to a trephining. In certain cases, which he does not specify, he finds it more advantageous to substitute the adonis by infusion of digitalis, thus, infusion of digitalis 0.5 to 0.75 in 180 of water; potassium or sodium bromide, six to eight parts; codeine, 0.15 to 0.20; of this five to eight teaspoonfuls during the day. No cumulative effects have ever been observed. This therapeutic indication may be explained by the cardiac aura, by the acceleration of the pulse during an attack of epilepsy, by the diuretic effects of the drug, which brings about a carrying away, as it were, of the attack-producing toxin, and by the vasomotor effect (of the vaso-constricting property of adonis vernalis), which counteracts the congestion of the vessels of the brain, as observed in two patients of the author during an attack.[4]

Dermatol in Diarrhea of Children. — Dr. Poix [5] administers dermatol in doses of one gramme per day to children of six months and under, or two grammes and more to older ones. It is administered in any mucilaginous vehicle, a teaspoonful every hour. The results are highly satisfactory.

The Therapeutic Application of Common Table Salt Injections.— Dr. M. Eltz [6] finds that the colon absorbs more readily quantities of normal salt solution than ordinary water. Even in cases in which irrigation is followed by evacuation of the bowels, half or even more of the injected fluid remained in the organism. The solution was employed by the author in many cases of gastric atony, in a few cases of chronic nephritis and once in whooping-cough. In atony of the stomach the author succeeded, by the aid of the injection, in quenching the thirst without burdening the stomach. In nephritis large injections of the normal salt solution one half-hour before the production of sweating in the ordinary course of treatment enhanced greatly the effect of the sudorific. In the case of whooping-cough in a child that was unable during several days to retain a single drop of water, and suffered for two days with complete anuria, a few irrigations with the normal salt solution entirely removed these troublesome symptoms. Among other indications for the employment of this solution he also considers sudden hemorrhages and vomiting of pregnancy. Finally they are also used in cases where rectal alimentation is indicated.

Ichthyol in Anal Fissures.— Conitzer [7] used the drug in eight cases in the following manner: After anesthetizing the parts with cocaine, pure ichthyol is rubbed in on a glass rod, at first daily, and then every other day without cocaine. The stool must be watery.

Bronchitis:

℞ Terpinol } āā . . . . gr. ii
Sodi benzoatis }
Sant. albi . . . . q. s. et ft. pil. No. 1.
Sig. Take six to twelve per day.

Correspondence.

A CORRECTION.

New York, September 10, 1899.

Mr. Editor: — In your issue of September 7th, p. 243, there is the following sentence, meant to be an extract from a paper read by me before the American Climatological Association (*Transactions*, Vol. XV. 1889): "When the child's heart is developing the cavities enlarge, but the wall of the heart does not always grow thicker."

I take it for granted that a great many of your subscribers read your columns with the same attention that I do and are influenced by them. That is why I refer to the grave error contained in the above statement. On p. 244 of the *Transactions* I say: "The heart of the young is comparatively large, heavy and healthy. Its weight in the newly-born is 0.89 per cent. of the body weight; in the adult 0.52 per cent. In the newly-born the cavity is small, 23 c.c. . . . the muscle is massive, equally thick on the right and left sides. . . . During the first five years there is an increase of the heart in bulk and weight, but none in circumference. . . . The cavities dilate rapidly only after the fifth year."

Very respectfully,
A. Jacobi, M.D.

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[2] Deutsche med. Zeit., 1898.
[3] Revue Neurologique, February 15, 1899.
[4] Archivio de Farmac. e. Terap., June, 1899, 311, 312.
[5] Correspondzb. f. Schw. Ærtze, No. 5, 1899.
[6] Therap. Monatsschr., No. 9, 1898.
[7] Russian Therapeutic News, No. 8, 1899.

METEOROLOGICAL RECORD

For the week ending September 2d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...27	30.23	62	70	55	69	74	72	N.E.	N.E.	7	5	O.	C.	
M..28	30.26	64	73	56	70	88	79	N.E.	N.E.	10	6	F.	O.	
T...29	30.33	64	67	61	89	97	93	N.E.	E.	11	6	O.	R.	
W..30	30.29	67	75	59	92	81	86	N.E.	S.	3	8	O.	C.	
T...31	30 17	73	86	60	92	78	85	S.W.	S.W.	8	11	O.	C.	
F....1	30.12	70	77	63	86	100	93	S.W.	N.E.	9	20	O.	O.	
S....2	30.15	64	66	62	93	93	93	S.	N.E.	10	4	R.	O.	.36
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 2, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1155	505	17.36	12 08	9.84	.96	2.32
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	336	117	16.24	10.73	8.70	1.74	3.77
St. Louis . . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	219	96	18.86	9.66	12.42	1.84	.46
Baltimore . .	506,389	182	74	25.30	5.52	20.80	2.20	1.10
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	134	59	28.86	4.44	13.32	12.58	—
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	63	21	23.55	9.42	20.41	1.57	—
Nashville . .	87,754	28	6	14.28	10.71	7.14	7.14	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	108,240	—	—	—	—	—	—	—
Fall River . .	95,919	64	45	49.92	3.12	48.36	—	1.56
Cambridge . .	89,724	29	14	44.85	3.45	37.95	—	3.45
Lowell . . .	88,641	43	25	30.16	6.96	30.16	—	—
Lynn	66,703	—	—	—	—	—	—	—
New Bedford .	66,340	22	11	41.50	16.60	37.35	—	—
Somerville . .	66,101	17	10	58.80	5.88	52.92	5.88	—
Lawrence . .	57,263	30	23	46.66	6.66	36.66	—	10.00
Springfield . .	56,501	14	3	14.28	21.44	7.14	—	7.14
Holyoke . . .	43,424	16	7	31.25	18.75	25.06	—	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem	36,883	14	10	42.84	—	28.56	—	7.14
Malden . . .	34,613	8	2	37.50	12.50	25.00	—	12.50
Chelsea . . .	33,468	8	3	—	12.50	—	—	—
Haverhill . .	32,022	10	6	30.00	10.00	30.00	—	—
Gloucester . .	30,589	—	—	—	—	—	—	—
Newton . . .	29,716	10	6	40.00	—	40.00	—	—
Fitchburg . .	29,438	7	4	28.56	—	28.56	—	—
Taunton . . .	28,167	—	—	—	—	—	—	—
Everett . . .	25,338	3	1	33.33	—	33.33	—	—
Quincy . . .	23,549	—	—	—	—	—	—	—
Pittsfield . .	22,643	9	4	11.11	—	11.11	—	
Waltham . .	22,296	4	1	—	—	—	—	—
North Adams .	20,971	5	2	—	—	—	—	—
Chicopee . .	17,842	4	1	25.00	—	—	—	—
Medford . . .	16,511	5	1	40.00	—	40.00	—	—
Newburyport .	14,915	8	1	12.50	—	—	12.50	—
Melrose . . .	14,032	—	—	—	—	—	—	—

Deaths reported 2,464; under five years of age 1,065; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 547, consumption 260, acute lung diseases 159, diarrheal diseases 364, diphtheria and croup 54, typhoid fever 48, whooping-cough 30, cerebro-spinal meningitis 18, erysipelas 15, scarlet fever 10, measles 6, malarial fever and small-pox 1 each.

From whooping-cough New York 17, Philadelphia 6, Boston 4, Baltimore, Cambridge and Waltham 1 each. From cerebro-spinal meningitis New York 14, Boston 3, New Bedford 1. From erysipelas New York 12, Pittsburg 2, Baltimore 1. From scarlet fever New York 4, Pittsburg 2, Philadelphia, Boston, Providence and Salem 1 each. From measles New York 6. From small-pox Boston 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending August 26th, the death-rate was 26 8. Deaths reported 5,868; acute diseases of the respiratory organs (London) 170, diarrhea 1,587, measles 105, diphtheria 72, whooping-cough 71, fever 58, scarlet fever 25, small-pox (Hull) 1.

The death-rates ranged from 20.8 in Croydon to 38.0 in Salford; Birmingham 30.7, Bradford 24.1, Cardiff 24.1, Gateshead 27.9, Hull 26.3, Leeds 23.2, Liverpool 36.7, London 24.1, Manchester 33.7, Nottingham 30.1, Portsmouth 32.0, Sheffield 29.5, Swansea 22.1, West Ham 25.7.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 9, 1899.

E. H. MARSTELLER, surgeon, ordered to duty in connection with recruiting rendezvous, Buffalo, N. Y., to report at the New York Navy Yard, September 4th.

B. R. WARD, passed assistant surgeon, J. F. CHAFFEE, assistant surgeon, are detached from the "Boston" when put out of commission and ordered home to wait orders.

J. C. DECKER, surgeon, detached from the "Monadnock" and ordered to the "Monocacy," at own expense.

J. STOUGHTON, passed assistant surgeon, detached from the "Monocacy" and ordered to the "Monadnock," at own expense.

SOCIETY NOTICE.

TRI-STATE MEDICAL SOCIETY OF ALABAMA, GEORGIA AND TENNESSEE. — The eleventh annual meeting of the Society will be held in Chattanooga, Tuesday, Wednesday and Thursday, October 24, 25 and 26, 1899.

Those desiring to read papers should send titles to Frank Trester Smith, M.D., Secretary, Chattanooga.

BOOKS AND PAMPHLETS RECEIVED.

The Disinfection of the Alimentary Canal. By A. Jacobi, M.D., LL.D., New York.

Annual Announcement and Catalogue of the Baltimore Medical College, Session of 1899–1900.

Advice to Gonorrheal Patients. By Ferd. C. Valentine, M.D., of New York City. Reprint. 1899.

The Death-dealing Long-tube Nursing Bottle. By Ernest Wende, M.D., Buffalo. Reprint. 1899.

Thirteenth Annual Announcement, University of Oregon, Medical Department, Session of 1899–1900.

Johns Hopkins Hospital Reports. Vol. VII, Nos. 5, 6, 7, 8, 9. Baltimore: The Johns Hopkins Press. 1899.

Cases of Chickamauga Typhoid treated at the Maine General Hospital. By Chas. D. Smith, M.D., of Portland.

Prognosis in Chronic Valvular Affections of the Heart. By N. S. Davis, Jr., M.D., Chicago. Reprint. 1899.

Transactions of the Medical Society of the State of New York for the year 1899. Published by the Society. 1899.

Artificial Feeding of Infants. Angioneurotic Edema. By H. F. Slifer, M.D., North Wales, Pa. Reprints. 1899.

Gastro-enterostomy: Indications and Report of Cases. By Byron B. Davis, M.D., Omaha, Neb. Reprint. 1899.

Mt. Sinai Hospital Reports. Vol. I for 1898. Edited for the Medical Board by Paul F. Mundé, M.D., LL.D. 1899.

Tumors of the Brain (with Reference to Disturbances of Vision). By U. O. B. Wingate, M.D., Milwaukee. Reprint. 1899.

Transactions of the Medical Society of the State of West Virginia, held at Weston, May 17, 18 and 19, 1899. Instituted April 10, 1867.

Treatment of Tuberculosis. A Therapeutic Measure Based on Physiologic Consideration. By J. F. Peavy, M.D., Asheville, N. C. Reprint. 1899.

Forty-fourth Annual Report upon the Births, Marriages and Deaths in the City of Providence for the year 1898. By Charles V. Chapin, M.D., City Registrar.

Some Remarks on Chronic Bright's Disease. Chronic Interstitial Nephritis; Treatment of the Heart Therein. By Arthur R. Elliott, M.D., Chicago. Reprints. 1899.

Aneurism of the Aortic Arch, Ligation of Right Subclavian and Common Carotid Arteries. Surgical Appendicitis. Cranial Injuries of Childhood, and their Treatment. Rectal Carcinoma with Subsequent Colotomy. Femoral Artery and Vein: Their Destruction without Loss of Leg. By B. Merrill Ricketts, Ph.B., M.D., Cincinnati, O. Reprints. 1898–99.

Original Articles.

CORRECTION IN LATERAL CURVATURE.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D., BOSTON.

As lateral curvature is in the main a vice of position and attitude, the treatment is directed chiefly towards the correction of faulty position and attitude. This treatment necessarily depends upon the pathological conditions, which vary at the different stages of development and severity of the affection, and these variations may be described as follow:

(1) Faulty attitudes with absolute flexibility of the spine, and without structural changes of ligaments, cartilage or bone.

(2) A curved position of the spine with flexibility, except to a limited degree in certain portions where the normal flexibility is checked by slight structural alterations of muscles, ligaments, or cartilage.

(3) Curves with limited flexibility of the spine, and with structural changes of the ligaments and cartilages.

(4) Stiffness of the spine, the curve being fixed by structural changes in the ligaments, cartilages and bone.

When individuals have attained their growth, and there is evidence of marked bony change, treatment must necessarily be palliative, but in individuals that have not reached full growth, even if structural changes are present, treatment can be expected to be of service in proportion to the amount of resistance to correction from the shape and structure of the bones.

The treatment in the first and second class would necessarily be largely gymnastic. In the second class the treatment should consist of gymnastics, supplemented by the use of measures for the increase of the flexibility of the spine, that is, the stretching of shortened contracted ligaments. These methods of treatment have already been fully discussed in previous papers on the subject. In the third class of cases, where resistance and flexibility of the spine exist, owing to firm structural changes, treatment by gymnastics and flexibility exercises will not be sufficient, and for these cases mechanical measures have always been attempted. They have, however, never been thoroughly successful as corrective measures, largely owing to the mechanical difficulty that is encountered. The important problem, therefore, before the orthopedic surgeon, is the selection of the best possible means of exerting pressure directly upon the projecting positions of the trunk.

The large number of variety of corsets that have been devised show the need of some method of treatment of the sort, but the great number of appliances used also indicates the lack of serviceableness and defects of most of them. It was supposed that the treatment by plaster jackets suggested by Sayre would be corrective, but the subsequent experience has shown that although this method is of value in caries of the spine, its value is considerably less in lateral than in anteroposterior curves from caries. The reason of this is manifest from the fact that suspension as applied by Dr. Sayre does not sufficiently correct the twist of the spine seen in lateral curvature.

It may frankly be admitted that the difficulties presented by extreme curves may be insurmountable or may be only partially overcome. If more pressure is required and for a longer time than can be borne by the patient for the correction of the curves of the bone, or for adaptive changes in the muscles and ligaments, manifestly no correction can be made.

Conversely, however, experience has taught that if sufficient pressure is applied properly, faulty shapes of bone in growing children can be corrected in various portions of the skeleton, jaw and long bones, and we need this pressure so severe as to be unendurable, provided it be constantly or continuously applied. Bone may be expected to grow straight, if it is prevented from growing crookedly. The softer the bone and the younger the child the more easily is the change produced.

Removable appliances are necessarily less efficient than fixed ones, owing to the difficulty of thorough adjustment after removal, and of fixed appliances, plaster-of-Paris corsets are more easily worn, and more readily adjusted than anything yet devised. It is, however, necessary that they should be applied in such a way as to exert and maintain the desired pressure, as long as it is considered necessary to maintain corrective pressure.

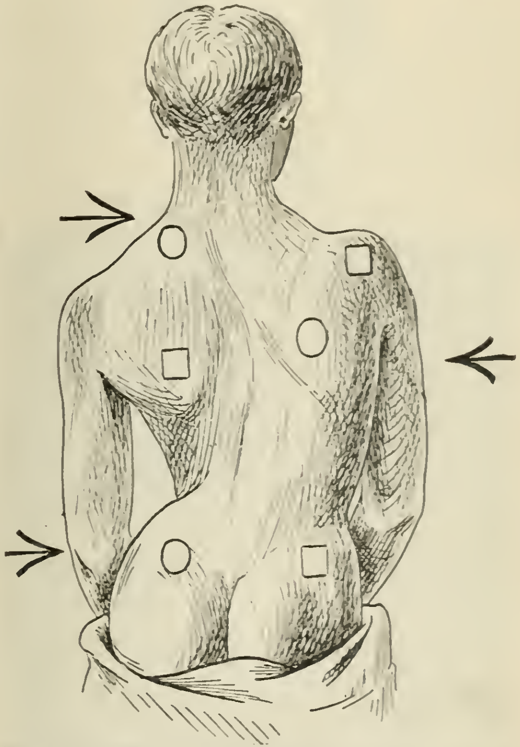

Fig. I. Indicating points of pressure, the square marks pressure in front and the round marks pressure behind.

A plaster jacket as ordinarily applied in lateral curvature often slips on wearing and presses upon the concavity, injuring as much as it corrects, even if it corrects at all. It is manifest that the jacket should be applied with the patient corrected as far as possible, and with the patient kept in the corrected position, until the plaster-of-Paris is sufficiently hard to maintain the correcting pressure, and that this correcting pressure should be as great as can be borne without distress and applied in the best possible directions.

It is not the purpose of this paper to relate the details of the experience gained upon the subject. It will be sufficient to mention that the most feasible way of straightening the spine has been found to be by the removal of the superimposed weight by the recumbent position, rather than by vertical suspension, as the latter is less easily borne by the patient. It is also true that the use of an anesthetic in the correction for lateral curves has manifest disadvantages, and cannot be as frequently applied as is usually necessary for increasing correction in lateral curves.

In cases such as are suited to correction by this method, if the patient is placed upon the back, with or without head and foot traction, the middle line of the trunk can be made straight. Furthermore, if the patient lies with the weight of the trunk supported only upon certain points, where upward pressure is applied, the sag of the unsupported portions of the trunk will serve to aid in the correction of the twist of the trunk. This correction of the twist may be aided by pressing upon the prominent portion of the distorted chest and thorax, using for this purpose hand pressure downward, during the application of the plaster, upon the front of the patient, while the supporting points on which the patient lies exert an upward pressure.

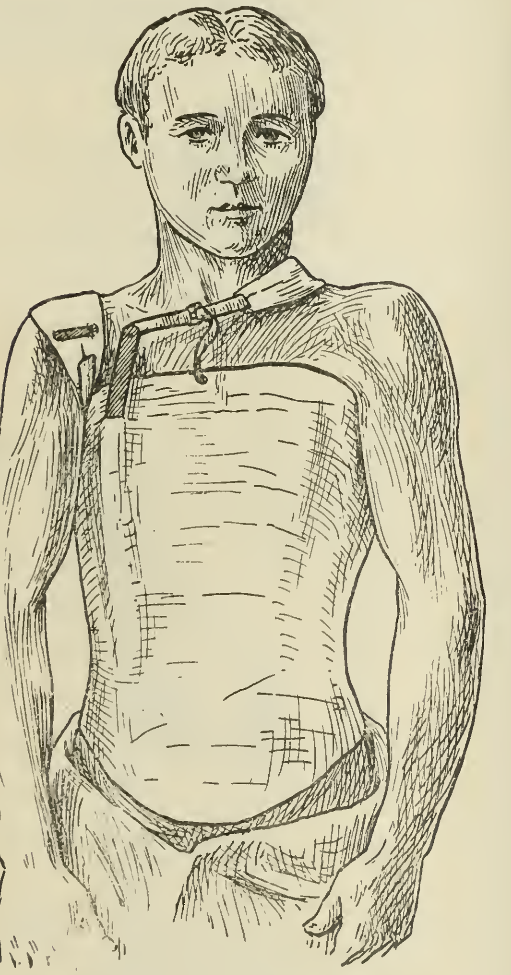

Fig. II. Jacket applied.

In the ordinary curves of lateral curvature the portions requiring correcting pressure in the back are, (1) on the projection of the shoulder, or adjacent part of the thorax, below the scapula on one side, and (2) on the opposite side above the scapula or at the base of the neck, and (3) in the lower portion of the trunk in the lumbar region on the side opposite to the prominent shoulder.

In front, correcting pressure is to be exerted (1) on the thorax at its prominent part on one side; (2), on the head of the humerus or acromial end of the clavicle, and (3) projecting pelvic anterior-superior spine on the other. (Fig. I.)

Pressure in this way can be applied without discomfort to the patient, if supporting rods bearing small, removable plates of aluminum (over which felt is laid) are placed under the recumbent patient's back at the required points, the head, pelvis and thighs being supported by cushions on a table, or by straps stretched across a gas-pipe frame. The plaster bandages are applied as usual. Downward pressure can be made upon the thorax and shoulder while the plaster is hardening, and when the corset is firm the patient sits up, leaving the adequately padded aluminum plates incorporated in the plaster bandage, and exerting constant pressure. It is desirable that the plaster pass over the shoulder, close to the neck

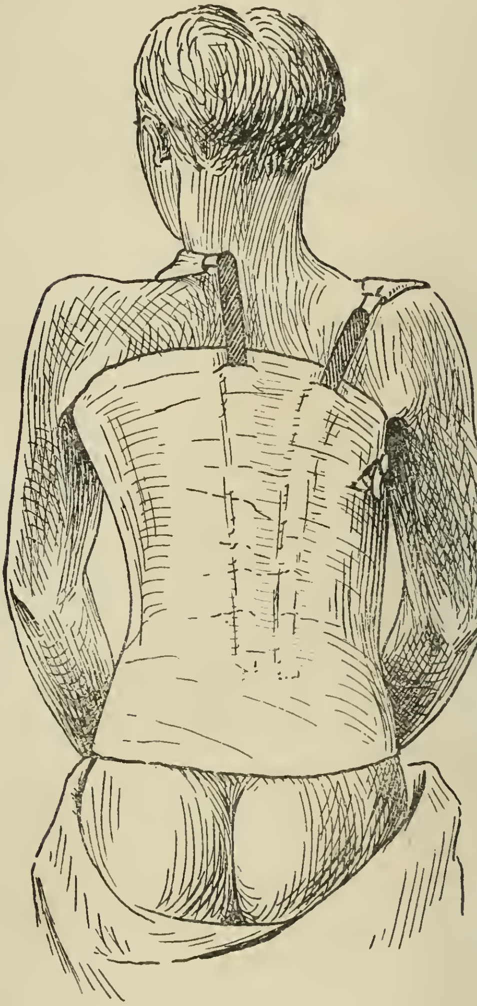

Fig. III. Jacket applied.

on the side of the projecting neck (that is, on the side opposite to the projecting shoulder), or that a strap attached to a steel be adjusted exerting pressure at this point. If this is not done, the corset will tip when the patient is erect, and the points of correcting pressure will be lost, the upper edge of the back of the corset pressing into the concavity of the curvature in the back, and the full benefit of the correcting lost. The acromial end of the projecting shoulder is to be kept back by a padded strap. (Figs. II and III.)

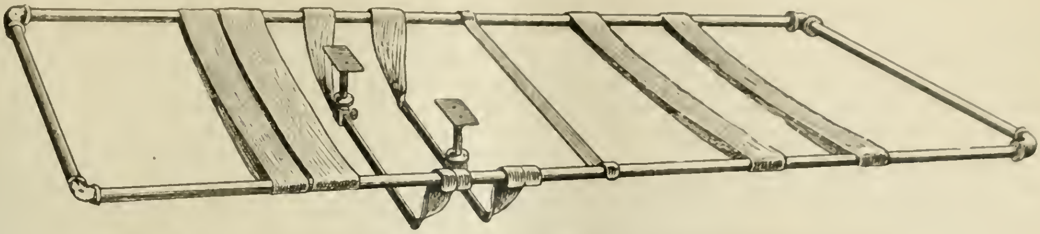

Fig. IV. Frame for the application of plaster jackets for correction of lateral curvature.

A correcting force should manifestly be applied not beyond the point of easy endurance and the jackets should be frequently changed. The treatment should be continued as long as it is possible to obtain correction, after which a removable corset and gymnastic treatment is to be employed. (Fig. IV.)

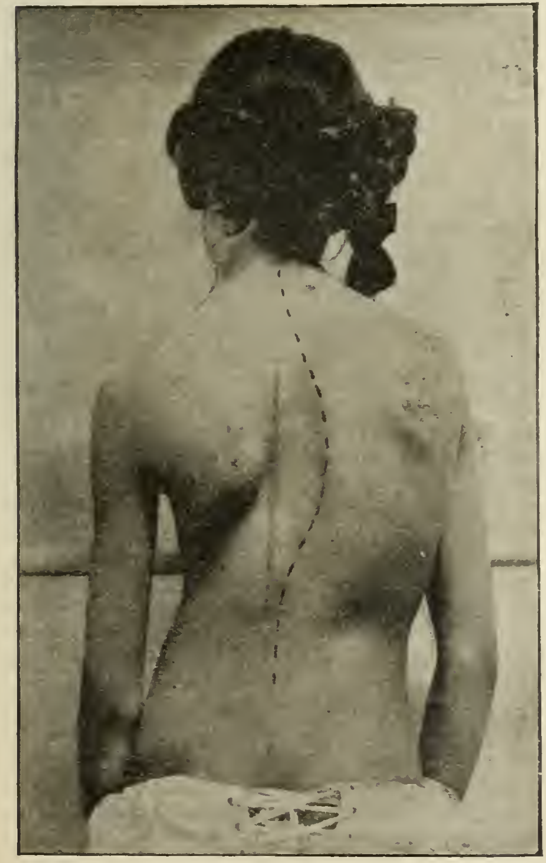

Fig. V. Case III before treatment.

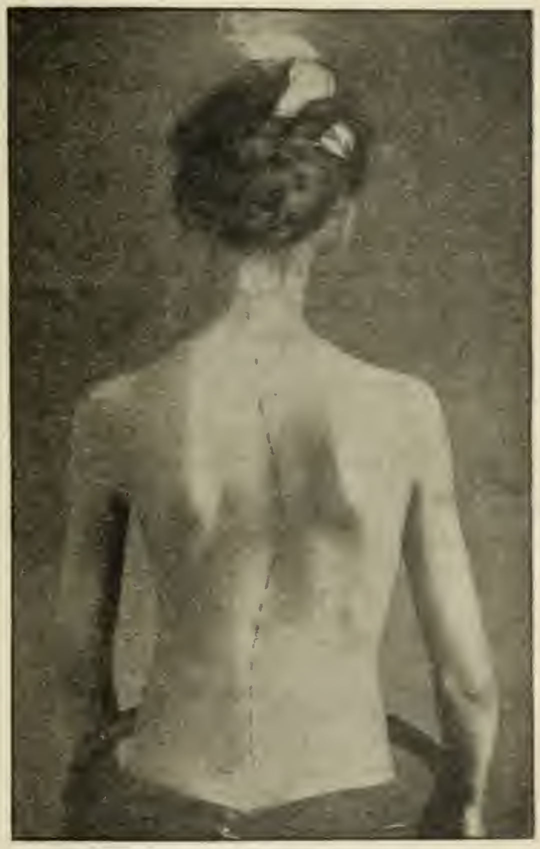

Fig. VI. Case III after two months' treatment.

A few cases will serve as an illustration of this method.

Case I. Girl, sixteen years of age, with low curve, rotation, spine moderately flexible, has been weak since a period of rapid growth, and unable to carry out systematically any definite exercise. The attempt was made to wear a removable corset, but owing to the child's condition, this was not successful, and the curve of the back had begun to increase. In view of this the plaster jacket was applied as a matter of trial, although it was felt at the time that possibly it could not be worn, but after two days it was found to be entirely comfortable and the patient much preferred it to any other form of treatment.

Case II. Boy, thirteen years of age, has worn removable jacket and attempted gymnastic exercises for over a year, but attention to this has not been satisfactory, owing to the difficulty in making the boy carry out systematic treatment. There is a decided curve to the left in the lumbar region, with rotation, and slight curve to the right of dorsal region above. Suspension or recumbency does not obliterate the deformity.

The jacket was applied and worn with perfect comfort, the boy meanwhile taking part in the sports of children of his age. The first jacket was worn for a period of nine or ten weeks. The condition of the back shows complete obliteration of lumbar curve, the upper curve unchanged. In this first jacket no attempt was made towards exerting pressure in the dorsal region of the upper curve.

CASE III. Girl, thirteen years of age, with a resistant curve, which has been noticed for about a year, usual type, to the right dorsal convex with a small left lumbar convex curve. The curve did not disappear on suspension or recumbency, and there was a permanent rotation of ten degrees. This case presented an unusual degree of inflexibility in a patient of her age. Even by employment of considerable manual force in the recumbent position the curve could not be corrected.

The accompanying photograph shows the result in this case after the removal of the second jacket applied by the method described in this paper. In addition to the change in the condition to be seen in the illustration, an improvement in flexibility was noticed, so much so that with the child recumbent not only did the lateral deviation disappear, but there was improvement in the rotation, which by means of slight manual pressure was much more diminished.

THE STRUGGLE AGAINST TUBERCULOSIS.[1]

BY EDWARD O. OTIS, M.D., BOSTON.

No more striking and dramatic illustration of the use and neglect of measures for the prevention of disease has recently occurred than that of General Shafter's army at Santiago, and Colonel Huntington's marines at Guantanamo. The condition of the former army on its return to this country is too familiar to you to require further comment. One could not observe the latter body of men without being impressed with their sturdy, robust appearance, indicating the best of physical condition; and yet both had been under the same local and climatic conditions. The difference in results was principally due to the recognition and use in the one case and the disregard in the other of preventive measures of disease.

As evident as the advantages of prevention are over later attempts at cure, it is one of the most difficult and disheartening struggles to impress this fact upon the general public, and this is particularly true with regard to pulmonary tuberculosis. Long accustomed to its presence and entertaining the old ideas of inheritance and incurability, one listlessly and hopelessly bowed to it as to the inevitable. Of late, however, there has been a change of attitude and an awakening with regard to it all over the civilized world, growing steadily stronger and leading to practical measures for its prevention. The discovery of the tubercle bacillus, establishing the unity of the disease, has given a definite and exact basis upon which to work, and excited a hopefulness as to its restriction, if not to its ultimate extinction.

We may learn a lesson and gain encouragement in our struggle against this disease from the history of leprosy in Central Europe. Leprosy is a disease which bears a very close resemblance to tuberculosis. It has a "long and silent period of incubation," is contagious, and its micro organism is almost identical in appearance to that of tuberculosis. In the Middle Ages there were computed to be 19,000[2] leper houses throughout Christendom; and in the time of Louis VIII there were 2,000 of them in France alone. England was studded with them, and the disease existed in almost every country and the islands of the sea. Now it has entirely disappeared from Central Europe, and is in the process of extinction elsewhere. May we not reasonably hope that in like manner tuberculosis, under measures of prevention which experience has demonstrated possible of execution and effective, may suffer the same fate as this its allied disease? Already evidence exists which points to this result.

The mortality from consumption in England and Wales was over 38 per 10,000 in 1838; 24 in 1870, and nearly 14 in 1895. In Philadelphia and New York the mortality has been reduced 20 and 30 per cent. in eight and twelve years respectively. Here in Boston it has been reduced from 18.25 per cent. in 1871 to 11.55 per cent. in 1897.

As with other communicable diseases, we must be able to locate the tuberculous cases and control them when necessary; this seems to me essential and fundamental to any efficient prevention. Whether we obtain this knowledge by compulsory notification or depend upon the voluntary reports of the physician is still a debatable question. My own opinion is that sooner or later consumption will be included among the infectious diseases, and even the public may demand it as the result of our own teachings. At all events, we must have knowledge of the cases and their locality. Of course this is the most important among the poor in the tenement-house districts, where little attention to prevention is likely to obtain. The well-to-do and the more intelligent portions of the community can generally be depended upon now to observe the proper precautions as to the disposal of the sputum; this they have learned from the anti-spitting propagandism.

The importance of disinfection or renovation after a case of phthisis is, however, in my experience not generally appreciated. No tenement, apartment or room should be again occupied or let until satisfactory evidence of thorough disinfection or renovation has been furnished. A case narrated to me by a physician of this city will illustrate the importance of this. The daughter of the landlady of a well-to-do boarding house dies of consumption. Some time afterwards a young woman from the West takes up her residence in the boarding house and occupies the daughter's room. In the course of time she exhibits evidences of tuberculosis, and her physician, suspecting the source of infection, has her removed. Such experiences are probably familiar to many of you. To my knowledge the disinfection of premises which have been occupied by consumptive patients and vacated either by death or removal, before they can be occupied, is compulsory only in New York City, Italy and Spain.

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[1] Read before the Suffolk District Medical Society, Section for Clinical Medicine, Pathology and Hygiene, March 15, 1899.

[2] Ransome: Causes and Prevention of Phthisis. Wood's Medical and Surgical Monographs, April 1891, p. 190.

The great struggle, however, is with the poor and ignorant consumptives who probably constitute a large majority of those suffering from the disease. They cannot be depended upon to safely dispose of the sputum either at home or abroad when they are still able to be about or attend to their occupation. In the latter stages of the disease they are often too weak to do so even with the best intention. The only resource then is isolation in especial consumptive hospitals or sanatoria, a step which is being agitated and indeed in the process of accomplishment, as I shall later show, in Europe and to a very limited extent in this country.

As in the Middle Ages the leper asylums existed, so in this age must we have the consumptive hospitals for the poor if the disease is ever to be exterminated. Not one but several such institutions would be required in or near every large city, which should afford free accommodation for consumptives in every stage. Those in the earlier stages and those exhibiting improvement under treatment could later be transferred to a sanatorium proper for the open-air treatment, conducted by the State, as at Rutland, or supported by voluntary contributions. Thus could the public be protected and the consumptive afforded an opportunity for recovery if possible, or receive comfortable care while he lived, which multitudes of them do not now receive. "I can conceive few objects," says Ransome, "better calculated to excite the compassion of all humane people than the condition of many of these poor sufferers who are shut out from the benefits of general hospitals." "In the place of the half-dozen such institutions," continues this same authority, "outside the Metropolis (London), there ought to be hundreds of them scattered about the country, in suitable localities and attached to all the chief centres of the population." But would not the expense of establishing and supporting such institutions preclude the undertaking either by the municipality, State, or through private beneficence?

"The poor laborer," says Dr. Cheever in his recent address at the opening of the new surgical amphitheatre at the City Hospital, "knocked down and crushed, receives here perfect nursing, asepsis, which means life and cure, good surgery, kindness and abundant food. He commands instantly an intelligent care and skill which the well-to-do have to wait and seek for, and even the rich sometimes do not attain."

If the city considers it a wise expenditure as well as a duty to offer such accommodations and treatment to the "knocked-down and crushed" poor laborer who is not a source of infection to any one else, would it not be at least an equally wise expenditure and duty to afford a refuge and treatment to the poor consumptive laborer, equally worthy, who may be a source of infection to those about him and the public, considering further the fact that the "knocked-down and crushed" laborers and all others who died a violent death in this city last year, for example, numbered 616, while those who died of consumption numbered 1,241? Morever, the city and State already are obliged to care for many of these poor sufferers in their almshouses and other institutions. To how much better purpose could the same amount be expended in especial institutions. Further, the number of consumptives by this means would be yearly reduced, which would mean a yearly saving of lives whose labor has a money value to the community.

As tuberculosis is caused by the ingestion of bacilli as well as by inhalation — and some authorities regard it as quite as frequent a cause — a rigid cattle inspection is an essential measure of prevention and especially of milch cows, for there does not appear to be much doubt that the largest part of ingestion tuberculosis is from tuberculous milk. The evidence of the danger from this source is abundant. In the recent investigation of the milk supply of Cambridge, England, more than half the dairies were found to be furnishing tuberculous milk, and it is not likely that this is a very exceptional state of things. I can see but one sure way of providing safe milk, and that is to require all milk-dealers to furnish satisfactory evidence that the cows from which their milk comes have been tested at stated intervals for tuberculosis and found free of the disease. Some cities already require this, as Syracuse and Minneapolis. The ordinance in the latter city is so comprehensive and thorough that it can profitably be quoted.

MINNEAPOLIS ORDINANCE FOR MILK INSPECTION.

"It shall be the duty of the Commission of Health to cause to be made by the veterinarian of the Department of Health, or under his direction and supervision, an examination of each and every animal producing milk for sale or consumption within said city and belonging to or controlled by said applicant, or the person from whom said applicant obtains milk, for the purpose of detecting the presence or absence of tuberculosis or any other contagious or infectious disease, and the said veterinarian of the Department of Health, in making such inspection and examination, is hereby authorized to use what is commonly known as the tuberculin test as a diagnostic agent for the detection of tuberculosis in such animals. After such examination and inspection of the dairies and dairy-herds as herein before provided, the Department of Health shall tag each and every animal so examined, which tag shall be of such a character as to afford a permanent record of such examination and the result of the same, as regards the presence or absence of any infectious or contagious disease."

In Massachusetts the appropriation for cattle inspection was refused by the Legislature last year, and it is again before that body this year. There are no State requirements as to the inspection of dairies or cows furnishing milk for the market. Some dealers on their own account have their herds tested, as, for example, the Deerfoot Farm. Sooner or later we shall realize the truth of the warning recently uttered,[3] "that economy in the regulation of tuberculosis is fearfully expensive economy, expensive in actual money, and above all, expensive in the lives and health of citizens."

A brief glance at the crusade against consumption in Europe may afford us encouragement. In nearly, if not quite, every country there is a general and active propagandism of prevention expressing itself in societies composed both of physicians and laymen, with the objects of raising money for the erection of sanatoria for the poor, and of issuing instructions to the people regarding the methods of avoiding the disease or communicating it to others. Most, if not all, of the governments have strict cattle inspection laws. In England recently the Prince of Wales presided over the Marlborough House meeting to establish a national society for the prevention of tuberculosis with the following objects: (*a*) To educate the public as to the means of preventing the spread of consumption from those already suffering from the disease; (*b*) to extinguish tuberculosis in cattle; (*c*) to promote the erection of sanatoria for the open-air treatment of tuberculous disease."

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[3] Medical Record, Feb. 11, 1899, p. 176.

The secular press has also taken the matter up, and all the newspapers have frequent articles upon tuberculosis. The municipal councils of many cities are considering the question of establishing sanatoria. The Liverpool Hospital for Consumption has recently received a gift of $75,000 to extend its work.

For many years especial hospitals have existed in London and elsewhere in England for the isolation and treatment of the consumptive poor, in all sufficient to accommodate 4,900 persons. Of late the open-air treatment at home and in small hospitals is being advocated in England and tried with enthusiasm. In Germany almost every city of importance has its society for the erection of sanatoria and the general objects of prevention, Berlin, Cologne, Nuremburg, Worms, Munich, Würzburg, Hanover, Bremen, Frankfort, Breslau and others. In all Germany there are already in existence from twenty to thirty sanatoria for poor consumptives capable of accomodating 10,000 patients a year. An international congress on tuberculosis is to be held in Berlin in May of this year. In Denmark $100,000 has been collected for sanatorium purposes, and a law has been proposed in Parliament regarding free disinfection. Since 1893 a law for the suppression of tuberculosis in cattle has been in force in this country, with an annual appropriation of $14,000. In Russia the Emperor has donated $300,000 and a large tract of land upon which to erect a sanatorium in memory of the late Empress Marie Alexandrowna, who was a victim to phthisis. In Sweden the King, upon the occasion of the twenty-fifth anniversary of his coronation, donated $600,000, which had been presented to him by his people for some enterprise of public utility, for the erection of several sanatoria for poor consumptives. In Holland the young Queen, who was recently crowned, presented on this occasion $80,000 and a magnificent site for a sanatorium consecrated to the tuberculous poor. In Austria, under the able direction of Prof. Schrotter, a sanatorium has been erected at Alland, not far from Vienna, offering accommodations for more than 100 consumptives; those who are able do light work about the grounds. In France the profession has been exceedingly active in the struggle, as their admirable congress for the study of tuberculosis would indicate. There are also sanatoria at Angicourt, Armesson and Villiers-sur-Marne, with others projected. Belgium is likewise active both through the government and various societies throughout the kingdom instructing the public as to the dangers of tuberculosis and its prevention, and advocating the erection of sanatoria for the poor. Several institutions already exist on the seacoast for tuberculous children. Even in Greece and Turkey government disinfection is said to be carried out with marked benefit.

So it would seem that in a decade or two Europe would be dotted with consumptive hospitals and sanatoria, just as in the Middle Ages leper-houses existed everywhere, and as a result consumption would gradually decrease until, as with leprosy, it eventually became well-nigh exterminated.

In this country, in 1894, the following items were collected by Dr. Knopf,[4] of New York: Fourteen states have bovine laws and regulations and issue circulars regarding tuberculosis in man; two have bovine laws, but do nothing regarding tuberculosis in man; one has bovine laws, but no funds to enforce them; two have laws prohibiting the sale of tuberculous milk, but do nothing concerning the tuberculosis in the cows; eight have no bovine laws, but issue circulars concerning tuberculosis in man; seven have no boards of health, and from five no answers were received.

Before the Legislature of New York there is a bill pending for an appropriation for a sanatorium in the Adirondacks. The Board of Estimates and Apportionment in New York City has appropriated $60,000 for the purpose of isolating poor consumptives, and the Seton Hospital has been selected for this purpose. Compulsory notification also exists in that city and disinfection is required. In this State there is the Rutland Consumptive Hospital erected and supported by the State, for the reception of incipient cases who can pay $3.50 a week.

In this city (Boston) the estimated population in 1898 was 541,827, and the total mortality for that year 10,886, of which 1,241 were from pulmonary tuberculosis, 114 per 1,000 deaths, 79 more than all the deaths from measles, scarlatina, diphtheria, croup, whooping-cough, typhoid fever, cerebro-spinal meningitis, cancer and appendicitis combined. Of this number probably two-thirds, or 827, were of the poor classes. Leyden gives the ratio between the annual deaths and the total number of tuberculous persons as one to seven, which would give 9,928, or one out of every 54 inhabitants. The greatest mortality from consumption is between the ages of fifteen and sixty; that is, during the period of the greatest productive power of the individual. Estimating the value of a human life at $1,000, based upon what the individual has cost his family, the community, or State for his living, development and education, this community suffered a loss last year through pulmonary tuberculosis of $1,241,000. Further, as the consumptive is incapacitated from work a considerable time before he dies, his productive power is lost to that extent. Taking Gherard's[5] average of three months at $1.00 a day, there is a further loss of $111,690; a total of $1,352,690 for 1898.

If, now, by isolation and treatment in especial institutions the present mortality could be reduced one-half in a comparatively short time, as seems probable from the reduction which has already taken place in England and elsewhere, there would be a saving of $676,345 a year. Indeed, I believe that the expense of establishing especial institutions for this disease would be more than compensated for by this preservation of lives with years of service before them, and the added saving of the expense now incurred by the city and State in the care of the incapacitated consumptive.

At present there is no State appropriation for cattle inspection. Since December 22, 1898, the Board of Health requires that "the conditions under which every cow is kept whose milk is brought into the city of Boston shall be made known to the inspector of milk in such detail as the Board of Health may require," and, further, that "No milk shall be sold, offered for sale or distributed in the city of Boston unless the cows from which it has derived have, within a year, been examined by a competent authority, and shown to be free from diseases dangerous to the public health; but this shall not be construed as forbidding the sale or use of milk from cows not tested with tuberculin." As, according to the conclusion of Ernst's very thorough investigations, "the possibility of milk from tuberculous udders containing the infectious element is undeniable," and "it is also equally undeniable that milk from diseased cows with no appreciable disease of the udder may, and not infrequently does, contain the bacillus of the disease"; and that, as has been demonstrated by the Cambridge investigation above referred to, a specimen of milk may be negative in its reaction one day, and a few days later show infection, and as the only possible and sure means in many cases of determining the existence of tuberculosis is the tuberculin test, which, as Nocard says, is exact and marvellously precise in its diagnostic indications, the only sure and safe means of eliminating tuberculosis from the milk would seem to be the tuberculin test, why then the last clause in the above regulations?

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[4] Journal of the American Medical Association, October 30, 1897.

[5] A Report of the Board of Health of the City of New York upon Pulmonary Tuberculosis, 1897.

From the above considerations the Minneapolis ordinance, in the writer's opinion, ensures a greater security.

There is no certain means by required notification or otherwise of obtaining the knowledge of all the cases of consumption existing in this city or of locating them, and hence no complete supervision or control of them. There are no compulsory requirements of disinfection or renovation of premises occupied by a consumptive, or in which he has died, before occupancy is permitted to others. Disinfection, however, is done by the Board of Health if asked for. There are no means of isolating the poor consumptive, except the most limited in a few institutions; no general hospital cares to or ought to receive them. The homeless and friendless advanced cases and those too feeble to work must lead a miserable existence in their wretched tenements or go to the almshouse. The city has made superb provision for the poor sick with other contagious diseases, and for the poor "knocked-down and crushed laborer," but makes no adequate and proper provision for the poor consumptive, of whom at least 800 die every year, and probably from 3,000 to 5,000 are sick and disabled from the disease. Tuberculosis is a contagious disease; it is governed by the laws and conditions prevailing with other contagious diseases, and must be combated in a similar way. More persons die from it in this city than from all the other contagious diseases together, except pneumonia, if that is considered such. Is it not time that something more should be done by this city for its prevention?

"The knowledge now at command," says Drs. Biggs and Prudden in their report to the President of the New York Board of Health, "regarding the methods of extension of pulmonary tuberculosis, entirely justifies the belief that its ravages can as certainly be limited by proper sanitary control and appropriate treatment as can other infectious diseases, more acute, more dramatic, and more readily communicated, but at the same time far less prevalent, less fatal, and incomparably less important to the welfare of the community." "We firmly believe," they continue, "that with proper regulations tuberculosis may be restricted within the narrowest bounds, and eventually, perhaps, almost exterminated."

In conclusion, let me outline a plan for a systematic scheme of prevention in a city like this.

(1) Knowledge of all cases of tuberculosis and their habitat, and the power to control and supervise them; this knowledge to be obtained either by including consumption among the infectious and communicable diseases and requiring notification as with them — which I believe is the only thorough way — or by urging physicians through circulars from the Board of Health, frequently repeated, to report all cases coming within their observation, especially among the poor, or wherever there is doubt as to the proper disposal of the sputum.

(2) Instruction of the public as to the dangers of tuberculosis and their avoidance by circulars similar to those issued by the Pennsylvania Society for the Prevention of Tuberculosis. This is already done, I believe, to a greater or less extent.

(3) Compulsory disinfection or renovation of premises occupied by a consumptive, or in which a consumptive has died, before they can again be let or occupied.

(4) Hospital accommodations in especial buildings for poor consumptives and those of limited means, situated in or near the city, and receiving free all stages of the disease alike. Two such institutions with a capacity of 150 beds each, or three of 100 beds, would probably afford accommodation for 900 cases annually on the basis of an average residence of four months.

(5) One or more sanatoria proper in the country for the open-air treatment, not more than two or three hours distant from the city, where the incipient cases and those likely to be benefited by such treatment can be transferred from the city institutions. Rutland already accomplishes this to a limited extent.

(6) Free examination of sputum for tubercle bacilli, as is already done by the city and State.

(7) Regulations against spitting in public halls, conveyances and upon the sidewalks, such as already are in force in our street-car system, and in addition, the placing of spittoons in halls, waiting-rooms, stores, work-shops, out-patient waiting-rooms and possibly street-cars. In the writer's opinion, spitting properly conducted is a cleanly habit, and the deposit of sputum in appropriate receptacles is to be encouraged rather than in handkerchiefs or in the stomach. It seems a hardship to prohibit promiscuous spitting without making provision for a safe performance of this act, necessary to many persons.

(8) The establishment of especial out-patient clinics so that the consumptive cases can be segregated, and receive more detailed attention and instruction for themselves and friends as to how they may avoid communicating the disease.

(9) Control of the city milk supply, by requiring all dealers to furnish satisfactory evidence that the cows from which their milk is obtained have been found free from tuberculosis by the tuberculin test, which test is to be repeated at stated intervals.

(10) Inspection of animals slaughtered for food, and of all meat sent into the city. Possibly compulsory disinfection of old clothes in pawnshops, as advocated by Prof. Roche, of Dublin.[5]

Of all these, especial isolating hospitals are, in the writer's opinion, most urgent and most important.

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[5] The Lancet, Feb. 11, 1899, p. 391.

THE USE OF ASTRINGENTS IN INTESTINAL CATARRH.

BY G. C. H. MEIER, M.D., NEW YORK,
Instructor in the New York Polyclinic.

When the writer entered the practice of medicine, more than twenty years ago, the treatment of diarrheal affections comprised practically the use of opium, tannic acid, chalk, and bismuth subnitrate. In other words, the chief aim of treatment was to check the profuse diarrheal discharges as soon as possible.

With the development of the doctrine of the bacterial origin of many diseases, the treatment of intestinal disorders underwent a corresponding change, and thus arose what might be termed the antiseptic method of treatment. A large number of antiseptics have been proposed with a view of destroying the pathogenic organisms in the intestinal canal, and thus preventing fermentative processes. Among those which have chiefly claimed our attention are salicylic and carbolic acids, creosote, guaiacol-carbonate, resorcin and the various naphtol preparations. I have always been skeptical, however, as to whether the small doses of these drugs that can be administered with safety are really able to exert a sufficiently powerful antiseptic effect to arrest the growth of bacteria in the gastro-intestinal tract. That they effect some good I am firmly convinced, but I do not think that we should depend upon them completely to the exclusion of other remedial agents.

If we accept the modern theory, that many bowel troubles are due to toxic products generated by bacteria, it seems more logical to me to initiate the treatment of intestinal catarrhs with the use of some evacuant which will promote the elimination of toxins *per viam naturalem*. The drug most useful in my hands for this purpose is calomel, although castor oil may also be employed with good effects. The beneficial influence of calomel is shown by the change in the character of the stools. Castor oil also acts well, especially in the case of children, but is so objectionable to many persons that in most cases I prefer the use of calomel. Having freed the intestinal tract of all toxic irritating material, the diarrhea will sometimes cease under the administration of simple stomachics with bismuth. Often it is necessary to resort to further treatment before the profuse and exhausting discharges can be checked. Here is the proper field for intestinal astringents.

The list of intestinal astringents from which formerly we were compelled to make our choice was not a large one, comprising chiefly tannic acid and various preparations containing it, such as tinctures of kino and catechu and the mineral astringents, especially acetate of lead, sulphate of zinc, and sulphate of copper. The mineral astringents have the disadvantage of acting as irritants when given in doses sufficient to obtain their physiological effect, or of entering into inert combinations in the upper part of the intestinal canal. On the other hand, tannic acid and the various preparations containing it have the serious objection of irritating the mucous membrane of the stomach by acting upon the albuminous elements, and thus giving rise to more or less gastric disturbance. Much of the tannic acid administered probably undergoes absorption in the upper part of the bowels, or forms insoluble tannates which are devoid of any astringent action. In spite of these disadvantages, tannic acid has always been a favorite intestinal astringent. Lately chemical research has placed in our hands a number of new tannic-acid derivatives in which tannin is presented in a combination which passes unchanged through the stomach, and is gradually and slowly decomposed in the intestinal canal. The first of these preparations, introduced about four years ago to the medical profession, was tannigen or acetyl tannin. This preparation I have used quite considerably in my practice, but last year my attention was drawn to tannopine, a combination of tannin with urotropin, which I believe is superior to the former in many respects.

Tannopine contains 87 per cent. of tannic acid, and owing to its insolubility in fluids of acid or neutral reaction, it passes unchanged through the stomach, thus avoiding the irritating and even caustic effect of tannin upon the gastric mucosa. In the alkaline fluids of the intestine, tannopine is separated into its constituents, but this decomposition takes place so slowly and gradually that the astringent effect is not confined to the upper parts of the intestinal tract, as with most other remedies of this kind, but extends down to the lower part of the large intestine. Besides its astringent influence, tannopine also exerts an antiseptic action upon the intestinal contents. In my experience, it has never given rise to vomiting or irritation of the digestive tract, and as it is perfectly tasteless, it can be easily administered to children.

Dr. E. Schreiber[1] is the first to report his observations with tannopine, which were made in Professor Ebstein's clinic in Göttingen. His cases comprised acute and chronic enteritis, tuberculous enteritis, and typhoid fever, and in most instances the results were most encouraging. The diarrhea was promptly relieved without the least tendency to constipation. Schreiber warns us, however, not to discontinue the remedy too soon, in order to avoid recurrences. In typhoid fever attended with profuse diarrhea, tannopine rapidly reduced the number of passages, which also became firmer in consistence. In tuberculous enteritis it was found necessary to give the drug for a considerable time in order to effect any lasting improvement. In my article published in the *New York Medical Journal*, August 13, 1898, particular attention was directed to the value of tannopine in the chronic forms of diarrhea, especially common in adults and unattended with pain or nausea, the so-called chronic intestinal catarrhs. Excellent results were also obtained in cholera infantum, gastro-enteritis and dysentery. Since the publication of my article Dr. C. Fuchs[2] has reported his experience with tannopine in the medical clinic of Professor Drasche, of Vienna, and especially commends its action in cases of acute diarrhea, as well as in the diarrhea of intestinal tuberculosis. In chronic diarrhea its effect was found to be less certain, for while in some cases it arrested the diarrhea, in others it only diminished the number of evacuations.

Dr. G. Joachim[3] has particularly tested tannopine in cases of cholera infantum, cholera morbus and enteritis. In 19 cases of cholera infantum, in which profuse watery evacuations had been present for several days, tannopine acted very favorably. In 51 cases of gastro-intestinal catarrh tannopine was administered in connection with minute doses (one-twelfth grain) of calomel, the latter being added for its disinfectant action. Good results were obtained in the majority of cases. In intestinal tuberculosis the results were much less favorable than those recorded by other authors. Joachim also points out that the remedy must be continued for some days after the cessation of the diarrhea in order to insure permanent cure.

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[1] Deutsche medicinische Wochenschrift, No. 49, 1897.
[2] Die Heilkunde, Hft. 11, 1898.
[3] Allgemeine medicinische Central-Zeitung, No. 65, 1898.

Dr. J. Landau[4] has treated 79 cases of intestinal affections in children with tannopine, the majority being acute enteritis and gastro-enteritis, and most of the patients being below two years of age. He observed that under its administration in doses of four to eight grains four or five times a day, the diarrhea promptly subsided without the least disturbance of the digestive tract.

My later experiments with tannopine confirm the results of my former observations. I have found it to be even more efficient than tannigen in intestinal catarrhs, and especially adapted for children, as it is perfectly innocuous even in large doses. My experience embraces about 20 cases, and the results were particularly gratifying in the non-inflammatory forms of diarrhea, where the stools were frequent, watery, and passed without pain. Dietetic treatment should always be combined with the administration of tannopine. All food which is liable to fermentation and to increase the looseness of the bowels should be prohibited; a meat or milk diet should be strictly adhered to for some time, and sweets and pastry absolutely refrained from, as well as malt liquors and coffee.

Irrigation of the bowels with a warm normal salt solution will be found very grateful to the patient, particularly where there is some straining at stools, showing an involvement of the rectum. I have found it a good plan in the early stage of any diarrhea to administer a brisk purgative, such as castor oil or frequently repeated small doses of calomel, the latter acting at the same time as a disinfectant to the whole intestinal tract, checking fermentation and acting as a germicide to the bacteria present. Well-ventilated rooms and plenty of outdoor air also exert a favorable influence by their tonic power on the whole system and assist in overcoming the action of the toxins by increasing the vitality of the tissues.

The following cases taken from my record book illustrate well the conditions in which tannopine has proven most valuable in my hands, and will, I trust, be of interest to the reader:

Case I. Charley D., age five years, had been suffering for two days with vomiting and diarrhea, the stools being watery and containing shreds of mucus; no fever was present. He was put on calomel, one grain every hour, and the intestine flushed with sterilized salt water, using about two quarts injected as high up as possble. The vomiting ceased under this treatment, but the diarrhea continued, though with less frequency. Tannopine was now prescribed in eight-grain doses every three hours, and checked the discharge in two days. Treatment was continued for another day to assure a permanency of the cure, and the patient has since remained well.

Case II. Mrs. Th. M., fifty-nine years of age, suffers from chronic diarrhea, which makes its appearance whenever she is worried or angry. She is also affected with prolapsus uteri. Opium had a very disagreeable after-effect when given for the diarrhea, so she was just put on tannopine, ten grains three times a day, which succeeded in checking the discharge after a few doses, leaving no bad after-effects.

Case III. Walker B., age four months, bottle-fed, was taken with an acute attack of gastro-enteritis; temperature 104° (rectal); much pain. The baby was given a cool bath for ten minutes, which reduced the temperature to 101½°. Phenacetin, one grain, was prescribed every three hours, and a dose of castor oil administered. On the following day the child was much improved; the diarrhea, however, continued at intervals. Tannopine, three grains, was given every three hours for two days, and the child rapidly recovered.

Case IV. Will T., age twelve years, convalescing from an attack of pneumonia, complains of soreness in the abdomen and frequent watery discharges from the bowel. Tannopine, eight grains, was given three times a day, and rapidly effected a cure.

Case V. Henry D., age six years, suffers from prolapsus recti, and diarrheal passages. Injections of ice-water were prescribed after each passage, and tannopine, eight grains, every four hours in a little milk. Bismuth and chalk mixture had been of no avail previously, but tannopine rendered the stools firmer in consistence and kept the diarrhea perfectly in check.

Case VI. Grace D., age twelve years, complains of headache and diarrhea, which come on on alternate days. She has taken all kinds of diarrheal mixtures, with no permanent benefit. The child was ordered to take quinine, three grains, every three hours, and tannopine, five grains, after each stool. Both headache and diarrhea have disappeared. The quinine was continued for a week longer, and a few doses of tannopine were given every day. Result, no relapse.

Case VII. Harry B., age ten years, was seized suddenly with high fever, vomiting and diarrhea. The stools were slimy, but contained no blood; there was some tenesmus. A dose of castor oil was administered, and followed by five-grain doses of tannopine every three hours. The diarrhea was checked in twenty-four hours, and the passages became normal on the following day.

Case VIII. Sidney F., age nine months, was suddenly taken with convulsions and an elevation of temperature to 105° F. He was placed in a cool bath until the temperature was reduced to 102°. Then he began to vomit and purge; calomel, one-fourth grain, was given every half-hour until the discharges became spinach green. Vomiting ceased and the diarrhea became less frequent. Tannopine was now given in doses of three grains every two hours with the result that the stools were speedily changed to a normal consistence. At no time did tannopine produce any nausea or vomiting. It was generally given mixed with subnitrate of bismuth, either in some mucilaginous vehicle or in powders which were taken in milk.

In conclusion I would epitomize my experience as follows:

(1) That in all diarrheal affections of recent duration it is of the utmost importance to free the intestinal canal of all irritating material, preferably by the use of small doses of calomel.

(2) After this has been accomplished, it is usually

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[4] Monatsschrift für praktische Medicin, December, 1898.

necessary to restore the tonicity of the relaxed intestinal mucous membrane and check the discharges by the use of astringents. In diarrheal affections of some days' duration, especially in children, it may be advisable to resort to the use of astringents at once in order to prevent exhaustion and collapse from the profuse and frequent evacuations.

(3) The best form in which to administer an intestinal astringent is one by which the astringent principle is slowly liberated in the intestinal canal so as to avoid any irritant effect upon the stomach, and also subject the lower intestinal tract to the influence of the remedy.

(4) Tannopine represents an efficient and reliable intestinal astringent, which, owing to its innocuousness, is well tolerated by the smallest children, and which, while an active astringent, is entirely free from irritating effects upon the intestinal canal.

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Clinical Department.

SYPHILIS AND THE PARASYPHILITIC AFFECTIONS: TWO CASES.[1]

BY E. W. TAYLOR, M.D., BOSTON.

It is evident that the last word has by no means been said regarding the etiological relationship of syphilis to the so-called parasyphilitic affections. That tabes and dementia paralytica occur frequently in persons with an antecedent syphilitic infection is unquestioned, but we need something more than coincidence to prove the point conclusively. A certain reactionary tendency is visible against the assumption of the close relationship between the two conditions, which has been generally accepted since Erb's statistics were published. For example, Guttmann,[2] in the study of 136 cases, found that 28.6 per cent. had had syphilis and 71.4 had not; six were doubtful. The occurrence of dementia paralytica as a sequence of syphilis is still less constant. It is not our purpose to discuss this difficult statistical question, but merely to draw attention to the fact that those cases in which there is a co-existence of symptoms of tertiary syphilis and the parasyphilitic affections are of particular clinical interest, and possibly are destined to throw some light on the matter. The following cases are also reported because of their somewhat unusual clinical course, and because of the difficulties attending their correct diagnosis.

CASE I. This patient, W. K., thirty-eight years old, claims to be a Moor, a statement which we have no reason to doubt. He was and is a man of good habits. His occupation formerly was that of a porter in a drawing-room car. In 1891 he was struck on the head in an accident, and from that time claims that he had certain mental peculiarities. He was married in 1890, and very soon thereafter contracted syphilis from his wife; he had a secondary eruption in 1891, was troubled in some way with his eyes, had much sore throat, some pain in the long bones of the legs, but no falling of the hair; a few months only after these symptoms, distinct delusions of grandeur developed, to which his mother also testified. He was under the impression that he had twenty-five students; that he was rich; that his mother was going to California in a private car. He also ordered his house carpeted at an expense of $500. He was at this time suspected by his employers of being mentally upset, and in 1893 was committed by Dr. Jelly to the Westboro Insane Hospital. He had had no definite and vigorous antisyphilitic treatment. He remained about six months at Westboro, without special treatment, and at the end of that time was taken home by his wife, who it is said gave him opiates for a period of eight months. Finally, in March, 1894, he was admitted to the Long Island Hospital, where I first saw him. He afterwards said that his memory had entirely failed at that time, that he did not know where he was, and that the first year of his residence at the hospital was practically a blank. During this period, which was before my connection with the hospital, he was unable to walk without assistance and declined absolutely to speak, but did not refuse food. It is probable that he had vague hallucinations of hearing, and at times he had attacks of violence. For several months before making a detailed examination I had observed the patient on my somewhat infrequent visits sitting passively in a chair, making no effort whatever to move, his face indicative of a deep depression, apparently regardless of his surroundings, and perfectly indifferent to his associates. He was being taken daily from his bed to a sun-room, where he spent most of his time, but remained for months perfectly speechless. Attempts to draw him out and elicit a word or two of recognition were absolutely ineffectual. He seemed depressed beyond the power to rouse, and it was for a time assumed that his refusal to walk was due rather to a mental inhibition than to a physical defect. This was, no doubt, in a small measure the case, but further examination revealed more adequate cause. It was as follows:

Motion.—There was slight tremor of the tongue; the cranial nerves showed no involvement. There was a much increased reflex at the wrist. The legs were emaciated without giving evidence of true muscular atrophy. Active and passive movements were both very deficient and conducive to spasm in hips and knees. Complete extension at the knees was not possible and he could not stand unsupported. The knee-jerks were much increased, but true ankle clonus was not obtainable. The gait was extremely spastic.

Sensation.— Muscle sense in the feet and toes retained; no objective disturbance of sensation. Slight urinary incontinence at night. Subjective complaint of paresthesia of legs.

Eyes.— Pupillary reactions normal; complains of a sensation of mist before the eyes, and states that at one time he had double vision.

Speech.— Hesitating in character when finally he began again to speak after being under treatment. The stock expression, "Third riding regiment of light artillery," was said with great difficulty, and he was utterly unable to repeat the alphabet spontaneously. The following is one of his attempts: *a, b, o, i, c, u, s, t, r, y, z, x, z,* with a tendency to go on indefinitely, and with no adequate consciousness that he was making mistakes.

As already indicated, the mental condition almost at once began to improve when active treatment of 100 to 200 grains of iodide of potash was instituted. He seemed gradually to emerge from a state of absolute apathy, and mental blank such as one sees in infancy before the dawn of intelligence, into a state of receptivity. By degrees he relearned the alphabet, with the same effort that a child would have, and apparently with but small assistance from his previous knowledge. He studied laboriously to master the sequence of letters, in order to repeat them at the weekly visit, and finally after a long period of faithful effort was able to repeat them without mistake. With this reappearance of intelligence he gradually took more interest in his surroundings, occasionally smiled and could be drawn into more extended conversation. It was, however, not possible to learn anything definite of his mental state during his period of depression; there appeared, at least, to be no well-formed delusions to account for it. With the continuance of the iodide he improved rapidly. In the notes now at my disposal there is no mention of mercury, and my strong impression is that it was not given. After a time he began to walk without assistance, and his mental state rapidly cleared. He was somewhat troubled with urinary incontinence but not to a marked degree. His gait remained very spastic. This improvement took place in the course of about four months.

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[1] Read, in part, at a meeting of the Clinical Section of the Suffolk District Medical Society, March 15, 1899.

[2] Gutmann: Tabes Dorsalis und Syphilis. Zeitschr. f. klin. Med., xxxv, 1898, p. 242. Abstract in Journal of Nervous and Mental Disease, August, 1899.

At the end of this time, the last note being July 31, 1894, he left the hospital and was not seen again until September 20, 1897. He had had no consistent treatment in the interval. Examination showed a persistence of the spastic gait, which had not improved; his bowels were regular in action and he was having no trouble with his urine. On October 4th he repeated the alphabet with some difficulty and omitted occasional letters; it was written also with several mistakes. The attempt to write from dictation "God save the Commonwealth of Massachusetts" resulted in an unintelligible scrawl, "God" being the only correctly written word. Repetition of difficult sentences was done badly, and reckoning was slow, but usually correct. He wrote his name correctly. His speech was not characteristic of general paralysis, nor was his appearance or manner. He was keenly conscious of his mistakes and apparently was embarrassed by them. Physical examination was as before. Deep reflexes remained much increased; of the superficial reflexes, the plantar was alone obtained. The pupils remained perfectly normal.

Treatment was again begun, and the iodide associated with mercury, first the biniodide and later inunction. In a few weeks the alphabet was again correctly written and great improvement noted in difficult sentences. As before, he took the greatest interest in his efforts in this direction. Repeated examinations showed no physical sign of significance other than those already noted. His frame of mind was one of entire satisfaction with his progress toward recovery, but his hopefulness could in no way be regarded as pathological.

On January 14, 1898, the note reads: "Says alphabet perfectly correctly; to-day repeats 'Third riding regiment of light artillery' quickly and correctly; does simple arithmetical examples well; is now taking charge of his mother's accounts." He has again a tendency to urinary incontinence. Has had no headache whatever.

Nearly a year later, December 27, 1898, he remained practically unchanged. I again quote from notes made at the time: "Does all the work at home, marketing, etc., and is able to get about better than before. At times legs feel stiff. Has taken no medicine for six months. Is satisfied with his condition; has had no trouble whatever in calculating (which his mother bears out); memory 'extra fine' now; shows no obvious speech defect. Has no discoverable delusions; no headaches. Has been going to night school for three months and is getting along well. Is now reading the second and third reader, which is not so far advanced as he was before his illness. It seems to him as if he were learning something entirely new, but it comes easier to him all the time."

Physical examination in March, 1899, gave the following results: Slight but definite ataxia of arms; legs somewhat weak; right pupil larger than left, with good light and accommodation reflexes; no diplopia; no headache; mental condition good; deep reflexes increased as before; right leg more spastic than left; abdominal, plantar, epigastric reflexes present; cremaster lacking; no facial tremor. Alphabet written with some mistakes, and unable to add 6+5. Multiplication well done. Repeats "Third riding regiment," etc., without faltering, and also without being asked what words to say, having remembered them from previous visits. The patient has not been seen for purposes of examination since.

Remarks. — This case offers many points of interest. In the first place have we to do with dementia paralytica with cord symptoms, or tertiary syphilis, or a combination of both? No doubt time is still required to answer this question with entire assurance. Pointing toward dementia paralytica we have the early symptoms of grandiose ideas, followed by a subsequent depressive stage, a by no means unusual occurrence. Cord degenerations are a frequent if not constant accompaniment of the cortical lesions, and should not in themselves exclude the diagnosis of general paralysis. The degree of spasticity and exaggeration of the deep reflexes, however, points rather toward a true syphilitic process. The marked tendency toward improvement under antisyphilitic treatment is rather against the idea of an uncomplicated dementia paralytica, though by no means absolutely conclusive. While fully aware of the danger of basing a diagnosis upon the results of treatment, this case seems one in which one might be allowed a little indulgence in spite of several recently expressed protests.[8] The effects of treatment may have been merely a coincidence, undertaken at times when improvement was about to take place spontaneously, or as Patrick points out, it is possible that antisyphilitic treatment may have some temporary effect upon dementia paralytica itself. My feeling, however, is that the evidence of treatment in this case is positive, and of considerable diagnostic value. There have been no epileptiform or paralytic seizures throughout the course of the disease.

When we turn to the second possibility of uncomplicated cerebro-spinal syphilis, we still have relatively little that is positive to go by. There have been no headaches, nor cranial nerve palsies beyond a doubtful diplopia, nor pupillary changes except a slight and recently developed inequality, which in any case is of small value in differential diagnosis.

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[8] For a consideration of this and many other points of differential diagnosis between brain syphilis and general paralysis, see Patrick: New York Medical Journal, August 20, 24, September 10, 17, 1898; also Sachs: New York Medical Journal, May 27, 1899.

There has been absolutely no evidence of the usual multiple somatic signs of syphilis. The earliest obtainable symptoms were mental, and for those the patient was committed to an insane hospital. The character of the early delusions would point rather to dementia paralytica, though by no means pathognomonic. As an argument for syphilis we have the early manifestations of the cerebral lesions after the primary infection, a few months merely. The period of stupor and extreme depression following the early exaltation of ideas is rather more characteristic of syphilis than dementia paralytica. The cord symptoms point strongly to a syphilitic involvement of the type described by Erb. The improvement speaks for syphilis. As between the two conditions under consideration, therefore, the whole course of the disease points rather to cerebro-spinal syphilis than dementia paralytica.

The third possibility mentioned is altogether possible, that general paralysis has or will supervene in what is now a checked syphilitic process. It is to a careful study of these combined proliferative and degenerative lesions that we may look for a considerable amount of light in the future sifting of evidence regarding the etiological relationship of syphilis and the parasyphilitic affections.

Case II. This case is of interest because of its obscurity for many years and its final definite outcome.

H., a married man of fifty-two, contracted syphilis in 1882. The infection was a source of great depression to him. He was treated for the disease by a skilled man, and since that time has repeatedly had antisyphilitic drugs, under the direction of as many as forty different physicians of note. He became notorious on account of his insistence on treatment, and came to be regarded as a person whose disease had so dominated his mind that argument was useless. He was, in other words, in the opinion of those who saw him, suffering from syphilophobia. In the course of his wanderings he had been to various psychiatrists, who recognized his depressed mental state, but attached no special significance to it. During the latter part of this period he became very much depressed, and continued so uninterruptedly for several years, in the meantime carrying on his work, that of a contractor, with success. His dominant thought seemed to be his infection, from which he apprehended various vague consequences.

I first saw him January 25, 1898, shortly after his return from Hot Springs, Arkansas, where he had again been undergoing vigorous treatment, which ended in marked mercurialization. Since his return he has had slight false ideas resulting from salivation. Examination showed that he had never had headache, diplopia, or cerebral symptoms of any sort. He complained of disturbance of sensation in the hands and feet for about two years, and, at times, of a feeling of constriction about the waist, but has had no urinary or rectal disturbance. Sexual intercourse was less satisfactory than heretofore. He has had pains in the legs for some time, which were apparently lancinating in character. He was able to make all movements of arms and legs without ataxia; there was no Romberg; gross strength was unimpaired. The knee-jerks were absent, as was also the cremaster reflex; other peripheral reflexes were normal and active. There were many subjective disturbances of sensation in the hands and feet and particularly on the outer side of the left thigh. Tests for touch and pain showed nothing abnormal, excepting at times a slight confusion of the head and point of a pin. There was a slight disturbance of muscle sense in the toes. The pupils were perfectly normal in size and contour, and gave an excellent reaction both to light and accommodation. There was not a suggestion of any speech defect.

The most striking thing about the patient was his excessive talkativeness and introspection. His one object appeared to be to exhaust his medical adviser with a detailed description of his symptoms, always with syphilis in the background. As is usual in such cases, his acquaintance with drugs was pitiful in its completeness, and his general knowledge of just how to take care of himself was as remarkable as his devotion to doctors. It seemed, however, a common enough type, and certainly suggested nothing deeper than an extreme hypochondriasis, just as it had impressed others before. The diagnosis reached was early tabes dorsalis and syphilophobia.

From this time until the latter part of February, I was besieged with well written and highly detailed letters of his condition from day to day, and of the exact amounts of the various drugs which he had prescribed for himself, as he afterwards reproachfully told me. The symptoms were insignificant and the letters quite in accord with the earlier opinion. Not a suspicion had entered my mind of a degenerative brain affection, or even of cerebral syphilis.

Finally, on February 24th, he failed to keep an appointment, and I went to the house. The whole situation was changed. His persistent mood of hypochondriasis, which had lasted for many years, had entirely passed. His son told me that his father had been acting strangely for some time, and distinctly different from his usual habit. He had grown jealous and suspicious of his wife; had spoken in a bantering way to a washwoman; had been alluding to himself in an unusually satisfied way, and had within a few days bought a valuable piece of land on a main street for the purpose of building. He was, when seen, in a very exhilarated frame of mind regarding the above business venture, which he thought an excellent one. He said he had bought a piece of land for $12,000, for which he proposed to pay cash; for this purpose he had sold well-paying bonds. He said he was worth $70,000; that he had made an excellent, long spiritual prayer, that he had a remarkable flow of speech. He had been writing a great many letters regarding building and had prepared plans of a house on slips of paper with many figures and estimates; one of them was headed: "Father's Birthday, Heaven," with the date. One letter of twelve pages was sent to a contractor, effusive in character and ending with "Amen." He claimed that he was a spiritualist, and telepathist and believed in the presence of departed spirits. He was previously not at all religious.

These examples suffice to show what an absolute change had come over the patient's thoughts. The diagnosis, unsuspected to this time, was clear, and subsequent events confirmed it. The pupils, however, were normal, and there was still no speech defect. Dementia rapidly supervened; his letters showed characteristic omissions and mistakes: he gained in weight; a variety of delusions developed; he drank excessively before being finally committed to a hospital. When last seen, about a year after first coming under observation, he presented a perfectly typical figure of general paralysis. He had had apoplectiform attacks, which had not before occurred, and was rapidly failing.

This case requires but little comment. Its interest to those who saw it is much greater than can possibly be conveyed to the reader. The simulation of a simple hypochondriasis was complete for a long period of years. This hypochondriasis, in the light of the outcome, is rather to be regarded as an extraordinarily long depressive stage of dementia paralytica. To make that diagnosis, however, with sufficient assurance to check the reckless expenditure of money appears to have been impossible. The cord symptoms, distinctly of a tabetic type, are also of considerable interest, and were likely to mislead, in the absence of typical mental symptoms, as, in fact, they did. The case did not have that generally progressive character, which Patrick[4] speaks of as characteristic, nor did anything like typical mental symptoms (if there be typical symptoms in general paralysis) dominate the clinical picture. We are of the impression that up to the time when grandiose ideas first presented themselves a dogmatic diagnosis could not have been made, in spite of the fact that the disease was already of long standing.

The two cases taken together are instructive. In one the symptoms of cerebro-spinal syphilis were at first obscured by signs pointing to general paralysis, and in the other the symptom-complex of general paralysis emerged only after years of atypical symptoms, which were unrelieved by faithful antisyphilitic treatment. The lessons of these and similar cases are manifold. They deserve and demand the most painstaking study, for just this relationship and confusion between the syphilitic and parasyphilitic affections affords one of the most difficult and important diagnostic problems with which we have to deal.

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Medical Progress.

REPORT ON PROGRESS IN PATHOLOGY.

BY JAMES H. WRIGHT, M.D., BOSTON,
Director of the Laboratory of the Massachusetts General Hospital.

PARASITES AND CARCINOMA.

N. G. Plimmer[1] describes and figures peculiar bodies observed by him in the tumor cells in a large number of cases of carcinoma. These are similar in appearances to some of the bodies which have been described by various other observers in recent years and to which various names have been given. Like many others, Plimmer regards these as parasites. He states that in a single case he has succeeded in obtaining cultures of the organism by the use of a special culture medium made from carcinomatous tissue. This organism seem to be allied to the blastomycetes. It grows best under anaërobic conditions. Inoculated into animals it produces multiple tumor growths of an endotheliomatous character.

THE PATHOGENIC ACTION OF YEASTS.

Alex. G. R. Foulerton[2] studied the effect of the inoculation of animals with various species of blastomycetes. He found that with some species tumor formations at the point of inoculation were produced and in some instances metastatic tumors in the internal organs as well. His attention, however, was chiefly devoted to the pathogenic action of a yeast which he isolated from two cases of pharyngitis. This he proposes to call *saccharomyces tumefaciens albus.* It was actively pathogenic for tame mice and for rabbits, less so for guinea-pigs. In rabbits tumors were produced at the seat of inoculation with secondary tumors in various organs, in some cases. In the mice no tumor formations were observed. Histologically the tumor growths were composed of mononuclear round cells. Rarely large cells containing the organism were seen.

TUBERCLE BACILLI IN THE MILK OF TUBERCULOUS COWS.

The bacteriological examination of milk for tubercle bacilli has given varying results on the hands ot different bacteriologists. Thus, among others, Obermüller found the bacilli in 61 per cent. of samples of milk sold in Berlin, while Petri only found them in 14 per cent.

The question of the frequency of the occurrence of tubercle bacilli in milk and of the value of the tuberculin reaction as indicating the probable presence of tubercle bacilli in the milk, has been investigated by Lydia Rabinowitsch and Walter Kempner[3] in the Institute for Infectious Diseases and in the Pathological Institute of the Veterinary High School of Berlin. Of 25 samples of milk from various sources 7, or 28 per cent. contained tubercle bacilli.

As to the frequency of the occurrence of the bacilli in the milk of cows known or suspected to be tuberculous, there are wide differences in the results of various investigators. Thus Nocard found them in the milk in only 5.5 per cent. of the cows, H. C. Ernest, of Boston, in 28.6 per cent., and Hirschberger in 55 per cent.

There seems to be a general agreement that the milk of cows with well-marked tuberculosis is very apt to contain tubercle bacilli and that such milk should not be used without sterilization. On the other hand, there is much difference of opinion with regard to the infectiousness of the milk of cows with only slight tubercular lesions and without apparent disease of the udder, or of cows which react to tuberculin without clinical signs of tuberculosis. Rabinowitsch and Kempner examined the milk of 15 cows which had reacted to tuberculin. In the milk of 10 of them, or in 67 per cent., they found tubercle bacilli.

Of the 10 positive cases there was tuberculosis of the udder in only two. In three there were no definite clinical signs of tuberculosis and in one only very early pulmonary lesions. The remainder were more or less extensively affected by the disease.

The authors conclude from their study that the milk of apparently healthy cows, which react to tuberculin, or of cows in the early stage of tuberculosis without involvement of the udder, may contain tubercle bacilli. Although the number of observations was small they think that they are justified in the opinion that the milk of cows which react to tuberculin should be regarded the same as milk from frankly tuberculous cows, and that the surest way to keep a milk supply free from tubercle bacilli is by the use of the tuberculin test.

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[1] The Practitioner, April, 1899.

[2] Journal of Pathology and Bacteriology, vol. vii, No. 1, May, 1899.

[3] Zeitschrift für Hygiene und Infectionskrankheiten, Bd. xxxi, Heft. 1, May 26, 1899.

[4] Patrick: New York Medical Journal, August 20, 21, September 17, 1898.

EXPERIMENTAL HEMOGLOBINURIA.

Dr. Anton A. Christomanos,[4] working in the Physiological Institute at Athens, Greece, has availed himself of the fact that subcutaneous injections of glycerin cause hemoglobinuria to study the blood and organs of rabbits so treated. He finds that the glycerin produces a thickening of the blood by abstraction of water and also produces a hemoglobinemia. The blood corpuscles which become useless from loss of hemoglobin are deposited in the spleen and bone marrow, where they are taken up by large cells. The number of red corpuscles in the blood is at first apparently increased, and this is due to the abstraction of the water by the glycerin, but soon, within four to five hours after the injection of the glycerin, a diminution in the number of red corpuscles becomes evident. The size of the corpuscles is also diminished by the glycerin. The free hemoglobin in the blood plasma does not enter the renal tubules from the glomeruli but is deposited in the epithelial cells of the renal tubules from the intertubular capillaries and from these cells it makes its way into the lumina of the renal tubules, where it may be accumulated to such an extent as to completely fill them. Most of the tubules of the kidney may be thus occluded.

EXPERIMENTAL CASEOUS PNEUMONIA.

J. Auclair [5] makes a contribution to the subject of the etiology of the caseous pneumonia of pulmonary tuberculosis. This lesion is considered by some to be due to the action of other bacteria than the tubercle bacillus, or, in other words, to be due to a secondary infection of the lung by pyogenic bacteria. On the other hand some believe that the condition is due to the effects of soluble poisons derived from the tubercle bacilli in the ordinary tubercular lesions elsewhere in the lung.

In previous publications [6] Auclair has shown that a poison may be extracted from tubercle bacilli, by means of ether or chloroform, or xylene or benzine, which is capable of producing suppuration and caseous degeneration of animal tissues.

In the present paper he has studied the effect of intratracheal injections of the ethereal extract in animals. He finds that such injections produce all stages and appearances of caseous pneumonia and he considers that he has clearly demonstrated that caseous pneumonia is due to the action of the poisons produced by the tubercle bacilli and not to secondary infections of the lung with other bacteria.

THE ETIOLOGY OF BERI-BERI.

Yamagiva [7] contributes an exhaustive report of his observations on this disease in Japan. He concludes that the disease is due to the daily use of an inferior kind of boiled rice. This food material produces a form of chronic intoxication which is characterized by a contraction of the arterioles throughout the body. From this there result hypertrophy and dilatation of the heart, anemia of the skin and mucous membranes and of the nerves and muscles, together with regressive changes in these organs and tissues owing to the anemia.

THE BACTERIAL FLORA OF THE LUNGS.

L. Beco [8] has made an extensive study of healthy lungs of man and animals with reference to the question of the presence or absence of bacteria in them.

As regards the healthy lung of both domestic and laboratory animals his conclusions are in part as follows: The bacteria usually present in the upper air passages do not invade the lung after death. When the lung is sterile at the moment of death it behaves as a closed organ as far as concerns the invasion of putrefactive bacteria from the intestine. If, at death, the lung is infected, the bacteria in it may rapidly multiply and, in the case of putrefactive bacteria, a rapid putrefaction may result with extension to neighboring organs. In the case of strictly pathogenic bacteria, however, the invasion of neighboring organs is slow and only occurs exceptionally.

For his study of the subject on the lung of man he selected 20 cases in which the lung appeared normal and in which bronchial lesions were absent. Among these were six cases in which death had occurred suddenly during complete or relatively good health.

From these cases the following results were obtained: The inferior respiratory tracts in the healthy man may be sterile, but frequently in lungs free from any gross lesions pathogenic bacteria may be present, usually in small number. These bacteria are those which are the usual infectious agents in acute pulmonary infections, namely, the pneumococcus, streptococcus and the staphylococcus (rarely). It is probable that during the last hours of life, or during the agony, and proportionately to the length of the same, there occurs an invasion of the lung by the bacteria of the upper air passages. Under the usual conditions, however, this invasion does not occur after death. Further, if various species of bacteria have invaded the lung, there may be observed after death a diminution in the number of these species.

The tubercle bacillus could not be demonstrated in the healthy lung although it was sought for in 11 of the cases.

THE IMPLANTATION OF EMBRYONIC CELLS IN THE ANIMAL BODY.

A. Birsch-Hirschfeld and Garten [9] report the results of the injection of freshly disintegrated tissues of young embryos into the liver of adult animals. In the goat, rabbit, chicken, salamander and frog, tumor-like new growths of cartilaginous tissue were obtained in the liver and lungs. In the chicken, after some weeks, adenoid structures, epithelial-like cells and pigmented cells, were found in the liver. The injected cells clearly seemed to have differentiated themselves in the animal body. The experiments were most successful when accompanied by a periodic stimulation of the liver tissue. The growth of the embryonic tissue was only transitory. After weeks and months the tumor-like new growths became encapsulated and regressive changes set in. Finally resorption of the tissue took place.

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[4] Virchow's Arch f. path. Anat., Bd. clvi, Hft. 3, 1899.

[5] Archives de médecine expérimentale et d'anatomie pathologique, T. xi, No. 3, May, 1899.

[6] Thèse doct., Paris, 1897, and Revue de la tuberculose, No. 2, July, 1898.

[7] Virchow's Archiv f. path. Anat., Bd. clvi, Hft. 3, 1899.

[8] Archives de médecine expérimentale et d'anatomie pathologique T. xi, No. 3, May, 1899.

[9] Beiträge zu path. Anat. und. zu allegem. Path., Ziegler, Bd. xxvi, Heft 1.

THE HISTOGENESIS OF ORGANIZING PNEUMONIA.

Prof. Ribbert,[10] of Zurich, has studied this interesting condition with the aid of serial sections and a modification of Mallory's staining method. He confirms the view that the branching masses of connective tissue, which invade the air cells of the lung and which are so characteristic of the process, have their origin in the bronchioles and smallest bronchi. In early cases an organic connection of this tissue with the alveolar walls cannot be demonstrated, but such connection can always be seen with the walls of the smaller branches of the bronchial tree. The process consists in an outgrowth of connective-tissue cells and embryonic blood-vessels into the exudate which fills these canals and the air cells.

BACTERIOLYTIC ENZYMES AND ACQUIRED IMMUNITY.

R. Emmerich and O. Loew[11] have made an interesting contribution to the subject of immunity to infectious diseases. They report the results of a long series of experiments, their summary of which is essentially as follows: The cessation of growth which is observed in most cultures of bacteria before all the nutrient substances are used up is due to the development of an enzyme-like substance which is formed by the bacteria themselves. This substance is capable in turn of destroying and dissolving the bacteria. Some of these enzymes can not only destroy and dissolve the same species of bacteria which produced them, but they can also destroy other species of bacteria.

The curative effects of the so-called products of metabolism of bacteria or of unfiltered cultures of bacteria is due to the action of these bacterial enzymes in the culture fluids.

The artificial immunity produced by the products of bacterial metabolism or by cultures of pathogenic bacteria is due to the fact that the bacteriolytic enzyme combines slowly with an albuminous substance in the blood. The resulting compound has the same bacteria-destroying powers as the original enzyme itself. This combination, which takes place in the animal body only, slowly and with great waste of enzyme, may be produced rapidly *in vitro* by chemical action. We are now, therefore, in a position, at least in some of the infectious diseases, to produce artificially an antitoxic serum without the aid of the animal organism.

The so-called "agglutination" or "clump reaction" is nothing but the first stage of the bacteria-destroying power of a bacteriolytic enzyme combined with the albumin of the blood.

The serum of immune animals is much more bactericidal in its effects in the absence of air than in the presence of air. This is a fact that has been completely overlooked. By great concentration of such serum marked bactericidal effects may be produced even in the presence of air.

Some bacterial enzymes when introduced into the animal body act not only destructively upon the bacteria which may be present, but also upon the bacterial poisons or toxins. Thus, for example, the enzyme of the *bacillus pyocyaneus* can completely neutralize the fatal effects of the toxin or poison produced by the *diphtheria bacillus.*

Judging from the experiments on animals, the enzyme of the *bacillus pyocyaneus* should be suitable for the successful treatment of anthrax, plague, diphtheria, etc., in man. By means of an antitoxic serum produced artificially *in vitro* with the enzyme of the *bacillus pyocyaneus* an immunity against anthrax of a high grade may be produced in animals.

The bactericidal effect of normal blood is probably also due to enzyme-like substances in it. The fact that high concentration of normal blood gives it the property of agglutination for certain bacteria is a point in favor of this idea.

SITUS VISCERUM INVERSUS.

Arnold Koller[12] describes a new case of this rare anomaly and adds an account of the theories which have been advanced concerning its origin. He also describes several cases of malformation and some experiments on freshly fertilized fish eggs, which have a bearing upon Förster's view that in all double monsters one fetus shows the *situs inversus.*

He thinks that, according to our present knowledge and in the light of his own observation, the *situs inversus* can be most simply explained upon the assumption of a symmetrical double fetus formation, in which the fetus possessing the normal arrangement of its viscera has disappeared. He finds that Förster's view, that *situs inversus* is always found in one fetus in the case of double monsters, is not true. It does occur, but not in all cases. Double monsters may be produced experimentally by various means applied directly after the fertilization of the egg. Their formation is due to the abnormal character of the sexual elements or to the effect of various influences acting immediately after the fertilization.

SCARLET FEVER.

R. M. Pearce[13] reports the results of a thorough pathological and bacteriological study of 23 autopsies on scarlet fever performed in the Pathological Laboratory of the Boston City Hospital.

No specific infectious agent was found which could be regarded as the cause of the disease. Anatomically, the only constant lesion found was a hyperplasia of the lymphadenoid tissue everywhere, especially in the lymphatic glands. The lesion was particularly marked in the lymphadenoid structures of the intestine.

In only a few cases was a pseudo-membrane present on the tonsils. In this streptococci were found but never diphtheria bacilli.

The most frequent complications were otitis media and bronchopneumonia.

In 11 of the cases there was a general infection with the pyogenic cocci, the streptococcus being present in nine of the cases. The infections with these organisms are regarded as secondary, for in all but two of the cases there was some inflammatory condition which could be regarded as an infection atrium.

The most prominent histological changes observed were as follows: In the skin, congestion of the blood-vessels, dilatation of the lymphatics and infiltration with polymorphonuclear leucocytes. In the tongue this condition was much more marked, and here there were also degeneration and necrosis of the epithelium. Similar changes were also present in the mucous membrane of the pharynx and in neighboring structures. In a few cases small streptococcus abscesses were observed in the lymphoid tissue of these parts.

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[10] Virchow's Archiv. f. path. Anat., Bd. clvi, Heft 1.

[11] Zeitschrift für Hygiene und Infectionskrankheiten, Bd. xxxi, Heft 1, May 26, 1899.

[12] Virchow's Archiv f. path. Anat., Bd. clvi, Heft 1, April 21, 1899.

[13] Scarlet Fever: Its Pathology, Histology and Bacteriology. Medical and Surgical Reports of the Boston City Hospital, 1899; also Journal of the Boston Society of Medical Sciences, vol. iii, No. 6, February, 1899. (Abstract.)

The most striking changes in the lymphatic glands and in the spleen were the proliferation of the endothelial cells and the presence of plasma cells. The proliferated endothelial cells were often phagocytic. The behavior of these cells here is similar to their behavior in typhoid fever, as recently described by Mallory. These same conditions were not only present in the larger lymphatic glands, but also in the smaller aggregations of lymphadenoid tissue along the respiratory and gastro-intestinal tracts.

In the mucous membrane of the gastro-intestinal tract there were found degenerative changes in the epithelium and an increased number of plasma cells and eosinophilic leucocytes besides the changes in the lymphadenoid tissue above mentioned.

Fatty degeneration of the muscles of the heart was observed in five of these cases and fragmentation of the muscle fibres in three cases.

In four cases focal necroses were found on the liver. These seem to originate in the same way as the hepatic lesions recently described by Mallory in typhoid fever. They apparently are due to circulatory disturbances in the capillaries caused by the occlusion of capillaries with endothelial cells which are derived either from the endothelium of the liver, or from the endothelium of other organs, which reach the liver by embolism. In one of these cases a necrosis of the cells of the central parts of the liver lobule was observed. These are regarded by Pearce as due to the effect of a toxin in the circulating blood acting on that portion of the lobule where the circulation is slowest.

In the cases studied by Pearce no examples of glomerulonephritis were met with, although one of the forms of this renal condition is commonly thought to be a not infrequent complication of scarlet fever. The author thinks that this may be due to the fact that his cases were for the most part too recent for these renal lesions to develop. In eight cases, however, more or less well-marked acute interstitial changes were observed in the kidneys, characterized by the presence of plasma cells in the interstitial tissue. These cases have been more fully described by Professor Councilman[14] in a recent paper on acute interstitial nephritis.

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Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

J. BERGEN OGDEN, M.D., SECRETARY.

REGULAR meeting Wednesday, March 15, 1899, DR. H. F. VICKERY in the chair.

DR. W. H. SMITH showed a specimen of

ACUTE ENDOCARDITIS OF THE TRICUSPID VALVE.

DR. E. W. TAYLOR read a paper entitled

SYPHILIS OR DEMENTIA PARALYTICA; A CASE FOR DIAGNOSIS.[1]

DR. VICKERY: Were any vasomotor symptoms such as flushings or sudden pallor recorded?

DR. TAYLOR: It would be difficult to tell about flushing in this case as the patient's color was very dark. In general, I did not discover any vasomotor symptoms.

DR. F. H. WILLIAMS: I think we all feel indebted to Dr. Taylor for presenting an interesting and rare case so clearly. Nothing can be said in addition to what he has stated; it certainly is a very unusual case, and one very well worthy of record.

DR. E. O. OTIS presented a paper entitled

THE STRUGGLE AGAINST TUBERCULOSIS.[2]

DR. KNIGHT: I think that Dr. Otis has certainly covered the ground very thoroughly on this subject. It seems to me that there has been a reluctance on the part of city, State and national governments to take hold of this question on account of its size; it seemed too big a subject to tackle, the disease seemed too widespread. In talking with several officials they have expressed that opinion. They felt that something ought to be done, but the subject was so big they didn't like to take hold of it. There is no doubt about the diminution in mortality of tubercular disease, particularly in Great Britain and in this country. This has been attributed in England largely to the increase in the number of hospitals and consequent treatment and isolation. In this country it cannot be attributed to this, but I think is attributed more to our knowledge of the disease and improved hygiene, improved modes of life, outdoor life and outdoor treatment. It seems curious that the United States, generally quick in adopting new methods of treatment, should be so far behind in this question of the establishment of hospitals for consumptives, but we are very far behind most of the European countries, and I am glad to see that Dr. Otis is making an effort in the right direction. When I appeared several times before the Finance Committee at the State House with regard to the Rutland Hospital I was surprised to find how well disposed every man of that committee was toward the project. They said: "This does not seem to be enough. You want more than one hospital for this purpose. You will want certainly three in Massachusetts." And I said: "Yes, we shall. We ought to have one in the city, one in the central and one in the western part of the State." And they seemed quite willing, if they were in power when the time came, to make appropriations. It seems to me the community would tolerate even the reporting of cases. That has been one great bugbear, that there would be a resentment in regard to reporting cases, that the people would not stand it, but, as far as I have seen, the people seem to be willing to do anything which is going to diminish the mortality of this disease. For instance, how quickly everybody obeyed the order in regard to spitting in the cars. I was astonished to see how quickly the cars, from being very filthy, became clean. People obeyed the admonition of the Board of Health. So I think, even if an order was issued that cases should be reported, though at first people might resent it, yet I think they would soon take it as they do the reporting of diphtheria or any other infectious disease, provided that the official visit, if one was necessary, was made in the proper way. It seems to me that now is the time to act in this matter, that people have been educated up to that point in which they will approve of appropriations, and the legislatures will be willing to make appropriations for isolating hospitals as well as for those for incipient cases. When the appropriation was made for Rutland I think that the members of the committee supposed that they were establishing a home for consumptives, but the trustees when they came to consider the working of the hospital thought it would be better to make the first institution an institution for the cure of early cases. I am not sure they were not right. Certainly it is more interesting for the staff who have to attend them. But we want and want badly the other class of institutions — the institutions for the isolation of the advanced cases, because it is from the advanced cases that the disease is mostly spread in the community, and I think that if a determined effort is now made for one large institution of that kind near the city, where patients can be visited by their friends, the great majority of whom live in the city, it can be obtained. The establishment of others for incipient cases will follow naturally.

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[1] See page 286 of the Journal.

[14] Transactions of the Association of American Physicians, 1898.

[2] See page 280 of the Journal.

Dr. V. Y. Bowditch: I can add very little to Dr. Otis's paper; only emphasize certain points he brings up. In the first place, having the privilege of being one of the attending physicians at the new State Hospital for Consumptives at Rutland, Mass., I think it would be perhaps of interest if I spoke of one or two facts which I have noted since the opening of the hospital in October. I confess when it was first opened I had some doubt as to how far it would be successful in getting the kind of case we wished; not the dirty poor, but the respectable poor, and I felt it was questionable whether they would be content to go together in the open wards. There are a few private rooms in case of severe illness, but as a rule the patients are in open wards. I have been perfectly astonished to see the philosophy with which all these patients came under the treatment and the cheerfulness and even pleasure with which they seemed to undertake whatever was mapped out for them in the way of treatment. Undoubtedly there is a moral influence from the mere fact that they are in an institution or sanitarium where a certain amount of military discipline exists, which I cannot — and I think that is the experience of most physicians — accomplish in private families. You cannot get the open-air treatment in a private house, except in occasional cases, as you can in an institution of that sort. These patients sleep in an atmosphere that at home would be almost impossible. The windows are open and at first in the coldest winter weather the patients would naturally complain of its being cold, but I have been astonished to see how quickly they become accustomed to it and like it. We have already had one or two cases of patients going home previous to the time advised but who have begged to be taken back, because, as they expressed it, "they could not breathe at home."

Then, too, I regard the establishment of this hospital as an immense benefit to the community, not only to the individual himself who is treated, but to his family and friends. The patients go home and tell and write of the methods of treatment, of the value and importance of fresh air and good food; they see the effect of it upon themselves, in short, they act as missionaries. I only wish and hope sincerely that every member of the profession will make it sometime or other his duty to visit the Rutland Hospital simply to see what can be done with people collected together in that way. I have spoken of the difference between treating patients in an institution of this sort and the results to be obtained in private practice, especially among the poorer classes. Before long I hope to give the subsequent histories of "arrested cases," so-called, at the Sharon Sanitarium, also for poor people, proving that after the lapse of years a good percentage of those cases that have been there have remained arrested and for all practical purposes are well. In my own experience I cannot recall a single case among the poorer classes where the trouble has been arrested for long, when attempting to treat them at their houses. In some of the wealthier ones it has been possible. These results at the Sharon Sanitarium can, I think with justice, be said to be somewhat unique from the fact that that little institution is not at a great altitude and not far from a great city, thus proving what can be done in our midst, as it were, and what be done under similar circumstances elsewhere.

I cordially recommend urging upon the Legislature persistently the importance of having institutions of both kinds, that is to say, sanitaria for incipient cases in higher altitudes throughout the State, and special institutions near the great cities for the advanced cases where altitude is no special object, but simply places where those dying can be taken care of and taken away from the crowded districts of the city where they are, of course, sources of danger to others.

I am glad to say this year the appropriation for the Rutland Hospital went through the Ways and Means Committee without a dissenting voice. There is not enough appropriated to satisfactorily carry it through, but we hope next year for a larger sum. It must be remembered, too, that an institution of that sort is always more expensive to carry on than an ordinary hospital; you must have extra food. I do not mean fancy food of any kind, but the necessity of having plenty of milk and eggs involves generous outlay, and in order to get the largest amount of fresh air for each individual patient you must have a larger hospital than you would for ordinary cases.

Dr. Knight has touched upon the fact that the object of the Rutland Sanitarium was somewhat changed from the original idea, and yet I am sure he feels and I feel it is wiser to keep it more for the incipient cases where there is hope of cure rather than to receive cases so advanced that mere alleviation of symptoms is all that can be accomplished, For such, the element of altitude is of little moment, and special hospitals nearer the centres of population are sufficient.

Dr. Otis has touched upon the necessity of examining all cattle, and I agree most heartily to that. Whether we change our views somewhat or not as to the intimate relation between bovine tuberculosis and human tuberculosis, it is well for us at least to err on the side of health and to have rigid laws with regard to tuberculous cattle.

Also I wish that we could urge the necessity of having special hospitals if for nothing more than to relieve our general hospitals of having phthisical patients mixed with the others. Not only is there the possibility of infection, but for the phthisical patient himself it is not so good in a ward where other diseases are treated. I trust before another generation has passed we shall see, as Dr. Knight and Dr. Otis have said, special hospitals near every large city and town in Massachusetts for both kinds of cases. I feel proud of the fact that Massachusetts was the first to establish a State sanitarium for consumptives. I consider it one of the greatest steps she has taken for many years towards the cure and prevention of disease.

Dr. Abbott: There is no part of the civilized world in which this subject, the struggle against tuberculosis, has not at some time within the past year or two been discussed. It has sometimes been called a crusade, a very apt term. The principal point I would like to urge at this time is the particular class of people affected. The hospitals that are intended for their reception will be filled in the future not by children under fifteen, not by adults over sixty or seventy, but by the wage-earning class. I have no doubt the majority of the patients at Rutland are between fifteen and forty years of age. The Imperial Board of Health of Germany brought this point out particularly in a circular issued about three or four years ago It has been reproduced in the report of the New York City Board of Health, 1896,[3] entitled the "Utility of Sanitaria or Hospitals for the Treatment of Consumption," and they produced very carefully compiled figures to show the wealth that is returned to the State by the curing of consumptives and returning them to their industries and homes, where they can again be useful. I presented some figures two years ago showing the exact ratio in Massachusetts now and forty years ago of the deaths from consumption of this class of people, the wage-earners, as compared with the general death-rate. We speak of a mortality of perhaps 10, 12 or more out of every 100 deaths from consumption.

But that relates to all times of life, from birth to old age. If we take the period twenty to thirty years we have the highest, and in the city of Vienna there were 643 persons out of every 1,000 deaths from all causes from consumption or deaths from tuberculosis; from pulmonary tuberculosis, 597 or more; in Belgium, 529 out of every 1,000; in Massachusetts, 1894 and 1895, 436, but that is a great improvement over several years ago. I compared the year 1856–57 with 1894–95, and they have been reduced from 409 deaths from consumption to each 1,000 deaths from all causes among males at the wage-earning period, fifteen to sixty years of age, to 209, and from 509 in women to 287.

Dr. Otis's final point, the importance of isolating hospitals for this purpose, is the most important of the whole. Notification of cases is an important matter, and is worthy of careful consideration. In England it is nowhere required. The law in regard to notification is peculiar in England. It is something like our liquor law in this country — a law of local option. Certain diseases are reported, such as diphtheria, typhoid fever, scarlet fever and three or four others, but consumption is not mentioned among them. This act is in force in localities containing about five-sixths of the total population of England. There is a very marked difference between England and America in the matter of fees for reporting. In Massachusetts no man receives a fee for notifying a case of infectious disease, but in England he receives a fee of two shillings and sixpence for each notice. If a similar law were to be enacted here some better results might follow. I hardly think it practicable just at present.

With regard to the necessity of hospitals for large cities as well as for the State, there is no doubt about it; that is, for a city as large as Boston. We have in this city one of the most substantial and well-conducted hospitals in the country for the treatment of infectious diseases. There is not another so well adapted to its uses in the United States. But at the same time this important disease, consumption, has no special place for treatment except two or more private charities in this city. A physician said two or three years ago, when the Rutland Hospital was first proposed, that there would be nobody to fill it, but the falsity of such prediction has been shown, and I have no doubt that half a dozen of such institutions could be used in this State with good effect. One of the main advantages is the removal of the man or woman, as the case may be, from the liability of causing danger to his relatives. He is an especial danger to the class of patients that ought to go to such a place, that is, the tenement-house people, those who are living in one to three-room tenements, sometimes in one-room tenements. Many people in this city are of that class. It is a very serious question among that class, and far more so than among those people who live in the better districts. A consumptive separated by only two or three feet from his relatives and friends is a far greater danger than when separated by two or three rooms, and that is one of the important points to be remembered. To my mind the final conclusion in Dr. Otis's paper is the most important of all — the establishment of asylums of this class.

Dr. F. H. Williams: It is certainly a question of great importance and Dr. Otis has presented it to us extremely well. It has many sides and while we all agree on the main points we may not all give to each point the same importance. There can be no question about the need of abundant hospital facilities for patients suffering from tuberculosis. I think there can also be no question about the great importance of teaching people how to take care of themselves and how to guard others against the disease. About two years ago I was much attracted by the marvellously good work done in New York by Drs. Biggs and Park. They laid great stress on the importance of teaching people in the poorer districts of the city what they should do, how they should take care of expectoration and what the dangers were to others in the neighborhood of a tuberculous patient, and they were much encouraged by the intelligent interest which these people took in the precautions which the Board of Health suggested. I think the health authorities in New York went about the problem very wisely, very diplomatically; they did not hurry, but took time, spent one or two more years in teaching people what they ought to do and gradually made regulations which seemed to them suitable. I think that is one reason why they have succeeded so well. The people were eager to learn and to do what they were told to do and quickly saw the importance and force of what the Board of Health wished. One other point in connection with tuberculosis and that is this, it is a mistake to frighten people too much about it. Instruct them, tell them what they should do and what they should not do, but do not make them think if they come within a hundred feet of a patient with tuberculosis they are likely to get the disease. It is only a few years ago, and in fact I think the same feeling still remains, that every one in the community was very much afraid of diphtheria and I think most of us had a notion that it was an extremely dangerous disease to be near. I do not think it is, if people are aware that a given person has diphtheria and take certain simple precautions. Let me illustrate what I mean. When I first began using the culture test for finding the bacilli of diphtheria — I believe I was the first to use it in this community and initiated its use at the City Hospital — I found to my surprise that a considerable proportion of the patients who were in the diphtheria ward did not have diphtheria and I never knew any one of those to take it, though there was a diphtheria patient on each side of them, unless some instrument were put from the mouth of a patient having diphtheria into the mouth of a patient not having the disease. If simple precautions were taken, so far as my experience went, patients who had not diphtheria did not get it. In like manner, in regard to tuberculosis every effort should be made to teach every one some of the precautions which should be taken to prevent the spread of tuberculosis and good results will follow. I have no doubt that as time goes on the method of examining the chest by means of the fluoroscope will be more used in doubtful cases and aid us to make the diagnosis in a large number of cases earlier than now. The best precaution against the spread of the disease is to make a diagnosis as early as possible.

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[3] Page 274.

Dr. Barnes: Without pretending to have sufficient information to justify an opinion as to how intimate relations are necessary to cause infection in tuberculosis it seems to me that a word in regard to a proposition which is now before the Legislature affecting the ventilation of our electric cars and steam cars is of consequence, for it is not the afflicted alone that we ought to consider but the strong and robust, who Dr. Abbott has so admirably shown us are exposed to infection from consumption as a consequence of indoor life; that is, as I understand his position, consumption is essentially an indoor disease. The proposition I refer to is to enclose the electric cars with a vestibule. We know it is quite agreeable out of town, where few patrons occupy the cars, but in town, with a cubic air space of not over three or four feet per capita, it seems to me a very dangerous thing to shut off all the accidental avenues of ventilation. When ventilators are governed by the caprice of passengers or conductor, the ignorant, the coarse and vulgar control. A person who has regard for his health gets into a car and noticing the foul air speaks to the conductor and asks him to open a ventilator, a man in the opposite corner shouts, "Shut that ventilator." and the ventilator is invariably closed. It seems to me the only effective way of obtaining pure air under this system is by occasionally opening the front door, and with the enclosures we should get but very little fresh air as a consequence. In the month of January I made investigation of the number of conductors and motormen of the West End Road incapacitated by diseases of the respiratory organs and found the percentage higher for the conductors than the motormen. Of a total of 3,925 men employed, sickness from pneumonia, bronchitis, influenza, inflamed throat, pleurisy, and consumption was reported by 31, or about eight in 1,000; 15 motormen and 16 conductors. The cases reported under "cold" or grippe for the month numbered 806. Three hundred and sixty-three, or 18 per cent., were motormen and 443, or 22 per cent., were conductors. Sickness from these causes was reported by 23 per cent. of the whole number. It was during the epidemic of grippe, and although we have no statistics showing what percentage of the population of Boston was ill at that time it seems to me from some little experience in families where every member was sick the percentage was very much larger. So that with the feeling that outdoor life is just as good for the strong and robust as for the consumptive, which is so well demonstrated at Rutland, I think the profession can very well use its influence in opposition to this proposition of enclosing the platforms and shutting off the avenues of ventilation. The conditions are so bad in the steam cars that I dread to take a journey at this season of the year owing to the infernal heat and foul atmosphere, being usually under the control of negro porters, who are notorious for their love of heat and bad air. The car becomes almost unbearable and how often we hear of friends and acquaintances taking a trip to New York and bronchitis or pneumonia the result. It seems to me exposures to heat and infected air have far greater influence than any possible exposure to cold in causing pneumonia and other respiratory diseases.

Dr. Vickery: I have been much encouraged observing the very rapid increase in the amount of practical knowledge about the prophylaxis of consumption among what we call the ignorant and poor. It seems to me that is one of the most encouraging signs of the whole trend of events at present and for my part I think that the next ten years will see a more rapid diminution in the incidence and the death-rate of tuberculosis than we have yet had.

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AMERICAN LARYNGOLOGICAL ASSOCIATION.

Twenty-first Annual Congress, held in Chicago, May 22, 23 and 24, 1899.

(Continued from No. 11, p. 270.)

Dr. A. Coolidge, Jr., of Boston, read a paper entitled

REMOVAL OF A FOREIGN BODY FROM BRONCHIAL TUBE THROUGH TRACHEAL OPENING.

A teamster, age twenty-three, was admitted to hospital a year ago. He had worn a tracheal tube for twenty years. The last one was of hard rubber and was several months old. Twelve hours before admission the tube had become detached from the shield and had been inhaled. On admission severe coughing, dyspnea and noisy breathing were noted. Examination by x-ray was negative. Patient was etherized and put on his back with the shoulders over the end of the table, with the head held downwards and rotated to the right side. The tracheal wound was enlarged downwards. A urethroscope one-half inch in diameter and three inches long was passed into the tracheal wound with the stilette in place, turned downwards, the stilette withdrawn and the speculum without any difficulty pushed down the trachea to within about an inch of the bifurcation. For illumination a hand mirror and sunlight were used and the foreign body seen in the right bronchus, with the upper end about half an inch below the bifurcation. It was seized with a long pair of alligator forceps introduced through the speculum, and removed without difficulty. No after ill effects were noted. During the whole time respiration was carried on through the speculum. There was some inconvenience at first from coughing but none from secretion. The mucosa of the trachea was cocainized.

The histories of foreign bodies in the air passages treated expectantly show such a large mortality from septic pneumonia that the following rules are pertinent for discussion:

In case a body is large enough to make it probable that it has gone no lower than a primary bronchus, we should immediately tracheotomize and explore by means of straight tubes as large as possible. If the body is in a secondary bronchus, operative interference is justifiable if there is a good chance of reaching it after illuminating the primary bronchus, as would be the case especially on the right side. A body loose in the trachea is much less dangerous than the same body impacted in a bronchial tube and hence every violent respiratory excitant should be avoided. It is better to tracheotomize under cocaine than under ether. In special cases tracheotomy may be avoided by introducing straight tubes through the glottis from above but if the body is being rattled to and fro in the trachea it would not be justifiable to run any further risk of its being inhaled. Even when it is in the larynx in such a position that attempts at removal are likely to push it further down, it is safer to do tracheotomy and reach it from below. That absolute surgical cleanliness is indispensable to prevent septic pneumonia goes without saying. A favoring circumstance in the use of the straight tubes is the mobility of the lower trachea and bronchi, which permits considerable straightening or bringing into line the bronchus under observation.

DR. H. L. SWAIN, of New Haven, related the histories of two cases of foreign body in the bronchi. He said that statistics show that they are frequently expelled sometimes months after they are inhaled into the air tubes. Ulceration is set up and they become dislodged. In one of his cases a shingle nail remained in the bronchus for some months, when the patient was struck by a train and made senseless. On recovering consciousness he had a violent fit of coughing during which the nail was expelled.

DR. ROE stated that on looking up the statistics of the subject he had found that in thousands of instances the body had been expelled. The best results come from leaving the body alone if it is not producing active symptoms.

DR. DE ROALDES believed that we should not hesitate to operate. In seven out of his eight cases the body had been removed through the tracheal wound. A low tracheotomy should be done and the bronchus titillated so as to excite cough while the edges of the wound were held wide open. We ought not to advise non-interference.

DR. WOOLEN thought that if there were no immediate symptoms and if we knew the body to be of such a nature that it could be easily expelled it was advisable to defer operation.

DR. G. HUDSON MAKUEN, of Philadelphia, read a paper entitled

EXHIBITION OF A CASE OF STAMMERING, WITH DEMONSTRATION OF METHODS EMPLOYED IN THE TREATMENT.

The patient was a civil engineer, age twenty-nine, who had stammered since childhood. There was no assignable cause for the affection, which seemed to be the outcome of a congenital neurosis. The chief characteristic of his defect was a spasmodic contraction of the muscles of the soft palate, resulting in sudden closure during attempts at vocalization and articulation of what Dr. Makuen called the posterior palato-lingual chink. These spasms were of variable frequency and duration and came at most unexpected times. They gave the speech a peculiar jerky character and sometimes blocked it entirely. The defect was more pronounced in reading than in speaking. There was also a sort of mental hesitation and he could not always think connectedly.

In all these cases the location of the neurosis varies and must be determined by a close study of each individual. In this particular instance the theory of a congenital neurosis is strengthened by the fact that a younger brother began to stammer and was saved from further trouble only by the most careful management. In the older brother the primary neurosis was located not in the nerves supplying the muscles of the pharynx, but in those supplying the respiratory organs, and the pharyngeal spasm was secondary or reflex and due to an overflow of nervous energy from the respiratory and vocal mechanisms. There was a lack of promptitude in the vocal element of speech. It was as if the bow hand of the violinist should suddenly cease to operate simultaneously with the string fingers, and as if the string fingers should try, by increased energy of action, to compensate for the delinquent bowing. This forced and unnatural fingering has its counterpart in the spasmodic action of the articulatory and other muscles of the stammerer.

In normal speech the action of the muscles is entirely automatic and when any of the mechanisms employed fails to perform its functions, this automatic action becomes impaired and it is the effort to control the lagging mechanism and to bring its action into harmony with the other mechanisms that constitutes the chief difficulty of the stammerer. In this particular instance the respiratory mechanism was at fault and resort was had to direct nervimuscle training; that is, the singling out of the muscles with faulty action and by voluntary exercises training them to functionate properly. This is superior to the indirect method which leads the patient unconsciously by means of approximately correct speech to use the muscles properly. The former develops the nerves as well as the muscles and establishes a volitional control over the faulty mechanism.

The essential parts of the respiratory mechanism are the thorax, the muscles regulating its size and the nerves supplying them. The muscles are divided into two sets according as they elevate or depress the ribs. The levators are inspiratory and the depressors expiratory. We can train our patients to develop the action of any one of their muscles, even of the diaphragm. Then we can combine the muscular mechanism with the vocal.

At the close of the morning session the following specimens and instruments were presented:

DR. FARLOW: An intranasal splint; large adenoids removed from woman of fifty; similar specimen by DR. SWAIN.

The Secretary, for DR. THOMAS R. FRENCH, of Brooklyn: Post-nasal forceps, mouth-gag and a modified Bosworth nasal speculum.

DR. COOLIDGE: A nasal splint for external injuries, as fracture of the nasal bones, and also a laryngeal applicator devised by DR. J. P. CLARK, of Boston.

DR. CASSELBERRY: A nasal snare.

AFTERNOON SESSION.

Dr. A. W. de Roaldes, of New Orleans, made a report of a few

CASES OF CHRONIC EMPYEMA OF THE ANTRUM OF HIGHMORE OPERATED BY THE CALDWELL–LUC METHOD.

This paper is based on five observations of chronic empyema of the antrum in which a prompt and radical cure has been obtained by the use of the Caldwell-Luc operation performed under the direction of the writer by his assistant, Dr. Gordon King. The results have been so uniformly satisfactory that surprise is expressed at the fact that the method, first conceived by an American, has not been more generally employed in this country. As is now well known through the able and exhaustive writings of Dr. Luc, this operation offers superior advantages over the older procedures. Its technique, elaborately described in the first observation, can be briefly summed up in the following steps:

(1) A buccal incision parallel with and near enough to the upper gingivolabial fold to insure subsequently an easy reunion of the mucoperiosteal flaps.

(2) Resection of the anterior wall of the antrum in the canine fossa, leaving an opening ovoid in shape, the extremities of which will facilitate the access to the tuberosity on the one side and to the nasal wall on the other.

(3) A thorough curettage and complete removal of the diseased tissues of the cavity.

(4) Partial turbinectomy of the anterior extremity of the inferior turbinate.

(5) Creation of a large artificial opening in the nasal wall of the antrum as near the angle formed by the floor and anterior wall as possible.

(6) Suturing of the mucoperiosteal flaps after having made the last inspection of the cavity, which is cleansed and dried and dusted gently with iodoform powder. The dressing is proceeded with by a light packing of iodoform gauze introduced carefully into the antrum through the large artificial opening in the nose, which is followed by a similar dressing of the corresponding nasal fossa. This is changed from the third to the fifth day, and every other day afterwards until the twelfth or fifteenth day, when the washing of the cavity twice a day is entrusted to the patient, who makes use of a warm boracic-acid solution by means of a proper canula and a Davidson syringe. The cases thus treated were discharged radically cured between the fourth and sixth weeks. In one of them, however, a little secretion could be found occasionally at the entrance of the sinus, but this was due to a remaining ethmoidal suppuration finding its way into the sinus through a partial destruction of its nasal wall from an old necrotic process. In connection with the report of these cases Dr. de Roaldes insists on the importance of clearly establishing the existence of any other focus of suppuration, as a co-existent implication of the ethmoidal cells or of the frontal sinus is to be considered as a serious complication, which may retard materially the healing of the antrum. In conclusion, Dr. de Roaldes makes a strong plea in favor of this operation, which has proved so uniformly successful in cases which, treated by older methods, had too often shown a discouraging obstinacy.

In discussing the paper, Dr. Roe said that we ought to consider the level of the antral floor with reference to that of the nasal passage and also that the existence of pockets or septa in the antrum often prevented proper drainage of the latter even after incision had been made.

Dr. E. L. Shurley, of Detroit, did not believe that operations were always necessary. The laryngologist sees fewer of these cases than do the dentist and general surgeon. Acute cases, as after grippe, often get well of themselves, but in chronic cases curetting will often be necessary. He did not believe that there was positive evidence of infection through the mouth, but the opening into the nasal fossa would in his judgment offer far greater chance of such infection.

Dr. Makuen observed that the law of gravity did not seem to hold good in normal drainage of the antrum, as the opening was nearer the top than bottom. Drainage seemed to be regulated by some sort of capillary attraction.

Dr. G. A. Leland, of Boston, remarked that man was not always an upright animal and that when lying down the antrum would drain by gravity. If the natural opening could be kept patent he believed that many of these cases could be cured without operation. The Caldwell-Luc operation was really a combination of the methods of Mikulicz and Jansen.

Dr. M. R. Ward, of Pittsburg, reported two cases of

SEPTIC PHLEBITIS WITH THROMBUS AS A COMPLICATION OF PERITONSILLAR ABSCESS.

He had been able to find but three cases on record and was able to add two to the list as follows:

Case I. Woman, age thirty. Three weeks previously she had pain and soreness in the left tonsil, which subsided. Three days later a tumor appeared on the right side of the neck and there was a right peritonsillitis with enlarged post-cervical glands. Palpation did not detect any fluctuation. The muscles of the neck were swollen, fever developed, with evidences of pneumonia in the lower lobe of the lung on that side and of pus beneath the superficial fascia of the neck Death occured on the ninth day after a pyemic course. Autopsy showed a thrombus in the internal jugular with septic phlebitis running up to the tonsillar plexus.

Case II. German, age forty-two, male, who had an ordinary quinsy which was incised. Two days later there was a chill, with renewal of all throat symptoms. Death occurred on the sixth day after a pyemic course. Autopsy as in Case I, with in addition multiple small abscesses in the kidneys.

Dr. J. L. Goodale, of Boston, read a paper on

ACUTE SUPPURATIVE PROCESSES IN THE FAUCIAL TONSILS.

The paper was based upon a study of eight cases of intrafollicular abscess. He wished to call attention to the etiological relation of special bacteria to these cases, of the latter's relation to peritonsillar abscess, of their prognostic significance and clinical recognition. Streptococci were more numerous than staphylococci. Of the eight cases, two were followed by peritonsillar abscess. In all there was a severe infection, as evidenced by the swelling in the neck, temperature range and cervical adenitis. In most cases the tonsil presented no gross appearance which would suggest intrafollicular abscess. The latter varied in size and number. The fibrinous exudation was more marked than in simple proliferative tonsillitis. Many polynuclear neutrophiles were found in the lymph channels near the base of the tonsils. The pyogenic infection of the follicles seemed secondary to that of the crypts and in the two peritonsillar cases there seemed to be a discharge of the abscess into the efferent lymph channels. In some cases the presence of subepithelial white specks may enable us to predict this special form of tonsillar inflammation and the latter may, by the rupture of the abscesses through the condensed tonsillar tissue to the surface, set up the condition described by Moure and other French writers as acute ulceriform tonsillitis.

DR. G. A. LELAND, of Boston, read a paper entitled

PERITONSILLAR ABSCESS.

He believes the best method of permanently relieving these cases is to make a long incision vertically through the tonsil and then to thoroughly explore through this incision with the sterilized finger the pus pockets. Circumtonsillar inflammation arises from an extension of the process in the lacunæ in the direction of least resistance. Cold, rheumatism, etc., mean nothing as exciting causes but a temporary lowering of vitality and of resisting power. The digital method above described is not dangerous. It is very painful, and a few whiffs of an anesthetic may be necessary. Its advantages are that the abscess is drained from the bottom, recovery is prompt, and there are no relapses. The patient is able to swallow liquids in six hours and solids in twelve. In case the incision is slow in healing, applications of iodine and glycerin are made to the bottom. This operation is really half a century old, but had fallen into disuse.

DR. THOMAS HUBBARD, of Toledo, reported cases of

PERITONSILLAR ABSCESS ASSOCIATED WITH DIPHTHERIA.

The first case was that of a farmer, age twenty, with acute tonsillitis. Five days later a right peritonsillar abscess developed. Examination of the deposit on the tonsils showed the presence of the Löffler bacilli, and antitoxin was administered. The next day there was evidence of membrane in the trachea, and dyspnea was so great that tracheotomy was immediately done. The patient stopped breathing, and artificial respiration for nearly an hour was necessary to re-establish this function. The patient lived only eighteen hours. Immediate cause of death was pulmonary edema. A second similar case was also described.

DR. F. C. COBB, of Boston, exhibited some photographs illustrating wax injections through the tonsillar crypts into the pharyngomaxillary space, the injections showing the same direction of extension as did the pus in the course of actual abscess cases.

DR. NEWCOMB mentioned a case recently reported by Sendziak of diphtheria associated with multiple abscesses in the various tonsils and empyema of both antral cavities. The phlegmon about the lingual tonsil opened spontaneously and a profuse hemorrhage ensued.

FIBROLIPOMA OF TONSIL.

History of the case was reported by DR. I. AMORY DE BLOIS, of Boston. The growth was the size of a peanut kernel and occurred in the left tonsil of a man aged forty. It had a thin pedicle attached near the top of the tonsil. Removal by the cautery snare under cocaine was effected without incident. A section of the growth was shown under the microscope.

(To be continued.)

Recent Literature.

A Class Book of (Elementary) Practical Physiology, Including Histology, Chemical and Experimental Physiology. By DE BURGH BIRCH, M.D., C.M., F.R.S.E., Professor of Physiology in the Yorkshire College of the Victoria University; Examiner in Victoria University; Additional Examiner in Edinburgh University. Philadelphia: P. Blakiston, Son & Co.

The first section of this class book deals with histology and contains material of considerable value to students, the table on p. 27 being remarkably good. In the second section the main experiments in chemical physiology are given in a clear and concise manner. Should a student perform carefully all the experiments given in this section he ought to have a good working knowledge of chemical physiology. This section is certainly not overburdened with chemical formulæ or symbols.

The third section deals with experimental physiology. The experiments considered are the ones usually taught in modern medical schools. The chapters entitled Electrical Considerations (xxvii, p. 183) and Dissection of the Frog (xxviii, p. 195) are very useful — the former to students having no knowledge of electric phenomena, and the latter points out clearly and emphasizes the preliminary and main steps necessary to a successful experiment.

The letter-press is good; some of the figures are clear enough, but the majority of them are bad, heavily drawn and coarsely printed.

The illustrations of apparatus are enough to discourage an average student. The main point in the apparatus shown seems to have been to construct as complicated a piece of mechanism as possible — perhaps with the object of teaching physics as well as physiology. Fig. 36, p. 207, showing a smoking chamber for drums is one of the most complicated apparatus that could possibly be constructed for this otherwise simple operation. However, outside of these drawbacks the book is of considerable value to beginners in the three sciences it considers.

A Compend of Human Physiology. Especially Adapted for the Use of Medical Students. By ALBERT P. BRUBAKER, A.M., M.D., Adjunct Professor of Physiology in the Jefferson Medical College, etc. Ninth edition. Philadelphia: P. Blakiston, Son & Co.

This book is entitled "Quiz Compend No. 4." The teaching of physiology on the Quiz Compend basis is certainly a short cut to mastering this intricate science. For these reasons the book should be appreciated by students, but they will probably be disappointed when examination time comes. Some of the most important branches of physiology are dealt with in a charmingly brief manner and others, equally important, are dealt with in a briefer manner still; that is, they are not mentioned at all.

The physiology of internal respiration, apnœa, dyspnœa, internal secretion, come under the latter category, and the vagus nerve, heart, vasomotor system, blood pressure, electric currents in muscle and nerve are all dismissed in a very few words. The seat of urea formation on p. 157 is definitely settled and explained *in seven lines*, and on p. 163 the formation of urea is clearly demonstrated in the same number. Happy students! In the chapter on Reproduction and throughout the book the new spelling is used — fetal instead of fœtal, ameba instead of amœba and leukocytes instead of leucocytes — diphthongs are bothersome things to the modern writer. Perhaps this is the reason why apnœa and dyspnœa are not discussed in the book. The letter-press is fair and the illustrations — which are few and far between — are the best part of the book. They are all taken from the standard and large works of physiology. In the preface to the ninth edition the author speaks of the "continued demand" for the book, and hopes that it may "continue to meet the demand of the student class." Let us hope that the student's eyes may be opened and that he will give up trying to master the intricacies of science by studying books of this description, and that he will use his brain in the endeavor to learn by understanding and not — parrot like — learn scientific facts by heart.

On the Study of the Hand for Indications of Local and General Disease. By Edward Blake, M.D., Member of the Royal College of Surgeons, etc., etc. Second edition. Pp. xvi, 135. London: Henry J. Glaisher. New York: G. P. Putnam's Sons. 1899.

The volume before us is the second edition enlarged by 62 additional pages and numerous illustrations and that within four months from the appearance of the first edition. This testifies to the popularity of the book, and we think it well deserved. The author makes a consistent attempt to exhaust the possibilities of the hand as a means of diagnosis, and discusses various conditions and diseases in which the hand is or should be a factor in arriving at a diagnosis. Such a method certainly has its advantages in that it tends to insist upon a cultivation of the observation, and leads us to draw inferences from frequently unrecognized appearances. Its danger lies in its one-sidedness: to rely upon the appearance of the hand alone in any diagnosis whatsoever would tend to lead astray in a great majority of cases. "Is it possible," the author asks in his introduction," that a fairly respectable diagnosis might be based upon the hand alone?" We should doubt it, except in a very few instances; as a partial means of information, however, no doubt the hand may be utilized much more than it has been in the past. The book before us is certainly of value in bringing this point forcibly before us. The volume is well bound and printed, and profusely illustrated, and as a book of reference may well find a place in all libraries.

We would call attention to one decided error of statement. On p. 21 the author says: "Allied to Raynaud's disease are scleroderma and acroparesthesia, the latter condition being sometimes known by the somewhat cumbersome and ungraceful term, "erythromelalgia." The two conditions are quite distinct.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, SEPTEMBER 21, 1899.

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283 Washington Street, Boston, Mass.

THE BOSTON CITY HOSPITAL REPORT.

There are few institutions to which a greater interest attaches in this community than the Boston City Hospital. Its rapid growth, its exceptional equipment, and its great public services place it quite at the head of city institutions devoted to the care of the sick. We look forward each year with interest to its annual report, a document which this year is particularly satisfactory, on account of the number and extent of the improvements which have been made and which are described in detail.

Seven pages are taken up with a list of the visiting physicians and surgeons and the hospital officers. This in itself gives one an idea of the extent to which the work of the hospital has grown. The trustees report progress in all respects; particularly noteworthy has been the work put upon new buildings. The new surgical amphitheatre has been completed and formally opened since the appearance of the last report. Two new wards have been furnished with improved modern equipment, and the Vose House for nurses is progressing rapidly toward completion. In addition to this, the boiler house has been improved, and a new laundry built. During the period immediately following the war with Spain the hospital received and treated 602 soldiers, without in any way incommoding the regular patients. The work of the South Department for infectious diseases has justified all expectations. In 1898, 51 per cent. of all cases of diphtheria occurring in Boston were treated in the hospital. Comparison with previous years shows that the diminution in the ratio of death from diphtheria bears a direct relation to the increase in the percentage of cases receiving hospital treatment, apart from the use of antitoxin.

The report of the superintendent is largely statistical and of much interest as an evidence of the growth of the hospital in all its departments. It is stated that the training school for nurses, in the number of its graduates, now ranks fourth among the training schools of the country. Five hundred and thirty-five nurses have graduated since the foundation of the school.

The medical and surgical statistics follow, covering something more than a hundred pages. They must be regarded as the least valuable part of the report, and are, in this respect, no exception to the usual hospital statistics every year published by innumerable institutions. To the general public such figures must be of little interest, and to the statistician they can be nothing more than a source of annoyance, so hopelessly confused is the classification, and so vague the distinction between symptoms and diseases. In the report before us, for example, we find in one place apoplexy, cerebral hemorrhage and hemiplegia classed as separate diseases; in another, we see multiple sclerosis and disseminated sclerosis given as distinct from one another. Under unclassified gynecological diseases are named the following conditions: bursitis, caries of ossicle, debility, hepatic colic, infancy. Under surgical diseases, among many others equally extraordinary, are apoplexy, hysteria, delirium tremens, premature birth, general paralysis. Since so much work is necessarily put upon this portion of hospital reports in general, it is unfortunate that a classification is not agreed upon by the various departments, that some sort of order may be brought out of the chaos, and such statistics rendered really serviceable. We simply take this report as an example of an almost universal failing.

The interest of this last City Hospital report is enhanced by two excellent plans of the hospital buildings and grounds, and several illustrations in the body of the pamphlet. We would cordially commend the report to those desirous of gaining a conception of the workings of a great hospital.

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A PROPOSED CARD CENTRALBLATT.

A NEED which is growing greater year by year is a ready means of getting at the literature of any subject. Not only is the number of papers and communications on subjects connected with medical progress in its various lines increasing beyond the power of any one man to compass, but, unfortunately, the number of periodicals in which these communications are to be found is also rapidly increasing. The necessary consequence is that even the specialist in any one field is quite unable to keep up with the literature of his own subject in its original form. Recognizing this fact, many of the special journals, and within a short time some of the general ones as well, have published abstracts of papers, as a labor-saving device for their readers. This method is no doubt valuable, but such abstracts to be really serviceable must be most carefully done; the kernel of a research must be put in a few words, and yet we must be perfectly sure that no essential points are left unnoted. Many of the abstracts fall far short of this ideal and therefore are worse than useless, inasmuch as they are frequently positively misleading. A satisfactory method, therefore, of making all the literature of a subject accessible in the most condensed form remains to be elaborated.

The details of a plan have, however, appeared in the current number of *Science*, over the signature of Dr. W. T. Porter, of the Harvard Medical School, which seems likely to solve the problem, at least in part. Dr. Porter proposes to have abstracts of articles in physiology, though, of course, the plan may be indefinitely extended to other subjects, printed on cards, and indexed by authors in the usual way, from which subject catalogues could easily be made. The printing, he thinks, should be done by an institution designed for the dissemination of knowledge, like a public library, and the Boston Public Library has at present under consideration the plan of which we are speaking. After considering certain difficulties in similar plans heretofore proposed, for the details of which we would refer the interested reader to the original publication, Dr. Porter makes the following suggestions:

"These difficulties led me naturally to the idea of a centralblatt printed on cards. In a properly organized centralblatt the abstracts are as long as may be necessary to do justice to the author's results, and each abstract is written by an expert in the field in which the original investigation lies. The advantage of having such abstracts printed on library cards is plain. The original set, arranged alphabetically by authors' names and chronologically under each other, would give the principal results of each investigator throughout his whole career. Duplicates arranged according to cross-references printed on the upper and lower margin of each card would furnish not only a chronological list of the investigations on any particular subject, for example, on the chemical reaction of the gastric juice, but would without further search set forth the fruits of the studies mentioned. . . . It is agreed that this card centralblatt shall contain abstracts of original communications in physiology, including physiological chemistry, invertebrate physiology and the physiological action of drugs. Each abstract is to be written by a physiologist specially learned in the field in which the original belongs. Wherever possible the abstract is to be the work of the author himself, following the admirable suggestion of Dr. Bowditch. Abstracts are to be mailed to subscribers about three weeks after the appearance of the original in this country, and in six weeks in the case of communications published abroad."

It is proposed to make the limit of the abstract about 225 words, which a card of the index variety would contain. If the abstract be too long for one card, two or more could be used. The suggestion is that sets of these printed cards, about 6,000 yearly, be issued to subscribers and that they would represent the gist of all the work in physiology of the year, in a form upon which the most absolute reliance might be placed, owing to scrupulous care in the editing.

We hope this admirable scheme for physiological literature may be put into execution at an early date, and that it may ultimately be extended to various other scientific branches of medicine. As Dr. Porter in conclusion says, "The success of this undertaking in physiology would mean the issue of similar publications in other sciences and the saving of much valuable time now wasted in unprofitable rummaging."

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REPORT OF THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

A preliminary report of the work of the Congress has been issued in England as a Parliamentary paper. The results of the meeting are interesting and yet not new. Methods of prophylaxis are discussed, with special reference to ventilation, food and sanitary dwellings. Directions are laid down as to the disposal of sputum, and considerable stress is put upon the open-air treatment and the establishment of sanatoria. In general, much hope is expressed for the future, both as regards prophylaxis and treatment. It is becoming evident that tuberculosis is gradually losing its terrors as our knowledge increases. Nothing can do more toward lessening the ravages of the disease than a widespread recognition among the people of its cause, of the means of prevention, and of its rational treatment when acquired. Of interest is the fact that in the abstract before us no mention is made of tuberculin in treatment; its one recognized value is as a diagnostic test in cattle, and even that is not without its drawbacks.

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MEDICAL NOTES.

A Case of Small-Pox in the Army. — It is stated that a case of small-pox has been discovered in the Presidio Hospital at San Francisco, the patient being a volunteer private of the Thirty-first U. S. Volunteers.

Memorial to Surgeon-Major Evans. — Some months ago the death of Surgeon-Major Evans, of the India Military Medical Service, from plague, was announced. He contracted the disease while making post-mortem investigations of patients who had died of bubonic plague. A fund has been raised to erect a tablet to his memory and also to establish a prize in pathology at the University of Calcutta.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, September 20, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 62, scarlet fever 28, measles 2, typhoid fever 27.

Two Cases of Tetanus. — The death of a patient at the Boston City Hospital is reported. The disease was caused through a penetrating wound of a foot by a rusty nail. A second patient recovered. Both received antitoxin treatment.

Emergency Hospital Reopens. — It is reported that the Emergency Hospital has reopened. Dr. G. W. Galvin will be surgeon-in-chief, and Drs. H. O. Marcy and E. W. Cushing will be consulting surgeons. A method is to be adopted through which, by the payment of a small fee, a person will be guaranteed medical and surgical treatment for one year.

Death of a Centenarian. — It is reported that Mrs. Sallie B. Jennings, of New Fairfield, Conn., died last week, aged one hundred and two years. She was in excellent health up to a short time before her death.

A New Association. — We are informed that the annual meeting of the National Hay Fever Association has recently taken place at Bethlehem, N. H. The main business of the meeting was the narration of the various experiences of the members, who represented every part of the country. Misery clearly loves company.

NEW YORK.

Yellow Fever at Quarantine Hospital. — No less than four of the passengers of the steamer *Lampasas*, which arrived from Galveston and Key West on September 7th, developed yellow fever. All the patients, two of whom were males and two females, were taken to the quarantine hospital on Swinburne Island, and treated by Dr. Doty with his yellow-fever antitoxin. Three recovered, but one, J. M. Burley, a clerk, whose family reside in Indiana, died on September 11th. His case was one of great severity from the outset, and the sudden advent of very cool weather was regarded as having an unfavorable effect.

Better Accommodations for School Children. — The public schools were reopened on September 11th, and for the first time in many years in the Boroughs of Manhattan and the Bronx it was possible to accommodate almost all the pupils applying for admission. During the past few months eight large and finely equipped new school buildings have been erected, and six of them were entirely completed in time for the opening day. In the Bronx High School, which is the only one of its class in the city in which boys and girls are taught in the same classes, the system of co-education has proved so popular that it has been found necessary to provide the school with a second annex this year. In the Boroughs of Brooklyn and Queens the state of affairs is not so satisfactory, and a large number of children had to be turned away on account of the lack of accommodations.

Regulation of Dispensaries. — The amendment to the law regulating dispensaries which was passed by the Legislature last winter goes into effect the 1st of October, and is expected to have some effect in remedying the evils which have so long attended the conducting of these charities, although the measure is regarded by many as not sufficiently drastic. The amendment, known as the Murphy Act, after defining what a medical dispensary is, provides that all dispensaries in large cities must be licensed, and that no license shall be granted unless the applicants swear or affirm that the dispensary is for the benefit of the public. The State Board of Charities is empowered to visit and examine every dispensary, and to revoke a license after due notice, by application to the Supreme Court, in case of violation of the law's requirements. It furthermore provides that no dispensary shall be permitted to be carried on in connection with a drug store or in a tenement house.

The "Oceanic" Helps the Hospitals. — The new White Star Line steamship *Oceanic*, the largest vessel in the world, which recently made her maiden trip across the Atlantic, was thrown open for inspection for one day, at a charge of fifty cents, the proceeds being devoted to hospitals in New York. A similar arrangement was carried out in Liverpool before sailing for the benefit of local charities, and the public interest in the big ship resulted in the realization of a considerable sum.

New York's First Automobile Ambulance.— St. Vincent's Hospital, it is announced, is about to be presented with an automobile ambulance, propelled by electricity, which will be the first of its kind in New York.

A Free Bath for Hoboken. — Richard Stevens and his sister, Mrs. C. B. Alexander, of Castle Point, Hoboken, have erected a free bath for the poor in the Hoboken tenement district. On the two upper floors are the bathrooms for men and women, and the first floor is to be fitted up for the use of clubs belonging to the Settlement House, a charitable organization established by their mother, the late Mrs. M. B. Stevens.

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ARMY NOTES.

The Status of the Contract Surgeon. — The Secretary of War has decided that a contract surgeon on duty at a post or station where there is no commissioned officer present may receipt for funds intended for the payment of the enlisted men at that station and witness the payment thereof. This decision gives the contract surgeon a more definite and official status and it is hoped may be the first step in changes by which all medical men in the service may be commissioned and clothed with the authority that their duties require them to exercise.

Retirement of Medical Director Tryon. — An order has been issued from the Navy Department retiring Medical Director J. R. Tryon on September 24th. Dr. Tryon was until recently chief of the Bureau of Medicine and Surgery, and to him must be attributed in large measure the excellent results which attended the work of his department during the Spanish-American War.

Great Britain to be Represented at the Association of Military Surgeons. — Ambassador Choate has advised the State Department that the British Secretary of State for War has accepted the invitation of the Association of Military Surgeons to send a delegate to the annual meeting of this Society at Kansas City on September 27th next, Dr. McWaters, of the Royal Army Medical Corps, being deputed to attend. It is understood that the Association at this meeting will be requested to make Dr. Karl Rudberg, Fleet Surgeon Swedish Navy, an honorary member, in recognition of the excellent volunteer work performed by him in the care of the wounded at Siboney and later on board of a hospital transport returning to Key West.

The Hospital Corps to be Enlarged. — It has been decided to recruit the hospital corps on the basis of four per cent. for the total enlisted strength of the army. This brings the total up to about 4,000 men — or more than the strength of a brigade — of which about 3,300 are already in the service. Enlistment is being rapidly carried on, especially in the large Eastern cities, and an extremely high class of men is being obtained. A large proportion of the recent recruits are men whose former avocations particularly fit them for the work they will be called upon to perform — many of them having been trained nurses, pharmacists and medical students, with even an occasional doctor of medicine. At present, enlistment is progressing at the rate of about 250 men per month.

School of Instruction for the Hospital Corps. — Recent orders establish a school of instruction for recruits of the hospital corps on Angel Island, in San Francisco Harbor. This school will be conducted on the same lines as the one at Washington Barracks and will receive all men enlisted in St. Louis and points further west. In view of the desire to send all available men to Manila before the opening of hostilities, it is not thought that more than one month's instruction will be possible in the near future before the men are sent on transports.

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Miscellany.

HAFFKINE'S PLAGUE PROPHYLACTIC.

A preliminary note by C. Balfour Stewart on some experiments to determine the comparative efficacy of the different constituents of Haffkine's plague prophylactic has appeared in the *British Medical Journal* and is as follows:

> A number of rabbits were inoculated with increasing doses of a young culture of living plague in broth, and the somewhat unexpected result was found, that the rabbits which received the larger doses showed a smaller mortality. I thought it possible that during the growth in broth the latter had acquired sufficient prophylactic properties to render the animal immune to the microbes contained in the broth culture injected.
>
> To see whether the prophylactic property lay in the broth altered during the growth of the microbe or in the sediment, several sets of experiments were done in which the broth was filtered through a porcelain filter. The sediment of a certain quantity of living plague culture was found to be more virulent than the same quantity of broth culture unfiltered when injected into rabbits.
>
> Some rabbits were inoculated with the filtrate alone, others with the sterilized sediment alone, and immediately afterwards injected with a suspension of living plague

from an agar tube. The result seemed to show that both the filtrate and the sterilized sediment possessed prophylactic properties.

Immunity seems to be conferred even when the animal is inoculated with the prophylactic immediately before the injection of plague.

In testing the virulence of a plague culture, it is evidently important to use only a very young broth culture or an agar culture.

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THE SUPERSTITION OF SPITTING.

The following, quoted from the *Medical Press and Circular*, gives one an idea how deeply rooted the obnoxious habit of spitting is, against which we are making such vigorous efforts to legislate. We are apparently suffering from the remains of a superstition: "The habit of promiscuous expectoration is an uncleanly, disgusting one, but how curious it is that it should be environed with so much superstition. In days of antiquity spitting was resorted to in order to ward off dangers, and up to the present time luck is wooed and misfortune avoided by the process of spitting. New-born children are treated to a lavish expectoration by midwives in certain parts of the country; fishermen spit upon their hooks after baiting them, and it is considered to be absolutely essential before washing in the same basin in which a friend has washed to spit into it, for otherwise a quarrel would be sure to follow. But it is on the Continent that the superstition of spitting seems to reach its worst degree. In Oldenburg, for example, the loathsome custom prevails of always spitting three times into the kneading trough. Again, babies in Hungary are especially singled out as objects of the superstition; the custom there is to spit into the babies' faces in order to bring them good luck. Imagination almost fails to picture the filthiness and danger of such a disgusting act as this. In Silesia and Bohemia, persons generally spit three times when they meet an old woman, but it is quite difficult to conceive why the presence of an aged female should thus call for such a profligate evacuation of the salivary secretion under these circumstances. Again, in Sweden, a great deal of superstitious spitting seems to take place. Persons, for example, spit into their beds before retiring; playing cards are spat upon when the luck is bad, and every new suit of clothes is made the object of a gross expectoration, but for what reason it is quite impossible to imagine. Superstitions are said to die hard; and it would seem, from the above facts, that the one under discussion has been endowed with a phenomenal vitality. Despite its absurdity, filthiness and unhygienic character, it has still survived; whereas on sanitary grounds, it should, without further loss of time, be 'coffined and confined' beyond all reach of resuscitation."

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Correspondence.

SOME POINTS REGARDING APPENDICITIS.

Boston, September 15, 1899.

Mr. Editor: — A number of treatises have been written on the subject of appendicitis, and yet there has been no satisfactory classification of the disease. In my judgment, the various cases should be divided into three classes, first, simple appendicitis; second, appendicitis with an abscess circumscribed or diffused; third, appendicitis with suppuration and perforation of the appendix, with pus in the peritoneal cavity, with septic peritonitis and general septicemia.

It certainly is incorrect to designate the second and third classes as simply appendicitis, although they are advanced stages of the same disease; it is misleading to the public and unfair to the surgeons that operate, as the mortality after operations in uncomplicated cases is comparatively small, whereas in the second class, the mortality is much greater and when recovery occurs, convalescence is greatly protracted. In the third class recovery is not to be expected.

The surgeon who is so fortunate as to have a large number of uncomplicated cases will have a greater reputation as an operator than his equally skilful neighbor who has been unfortunate in the necessarily fatal character of his cases. Now a proper classification of the disease, strictly adhered to in all reports of the operation, would give the profession more valuable comparative statistics, place the surgeon in a proper light, and render the community at large more intelligent as to the necessity of early operations and thus be the means of saving life.

Every general practitioner of experience *knows* that many cases of recent appendicitis may be relieved without an operation, but that recurrences are the rule. The writer has seen four well-marked cases within as many months, that were completely relieved by hypodermic injections of morphia and atropia, with small doses of sulphate of magnesia and calomel, repeated hourly until copious watery discharges from the bowels were produced, giving immediate relief. One of the cases has since recurred, and has been successfully operated upon at the Massachusetts General Hospital. If the action of the above remedies fail to give relief, I advise an immediate operation, as in such cases delays are dangerous.

Who should operate? Only those surgeons who have had a thorough experience in this class of cases and who have acquired tact and skill in performing the operation. The would-be surgeon, who sees three or four cases a year and whose knowledge of anatomy, general and special, is very limited, and who consumes half an hour mutilating the cadaver in an almost fruitless attempt to find the appendix, is hardly a safe person to let loose among the living.

Every person, no matter how humble, should have the best possible chance for life and the best result, and for an audacious pretender to attempt the operation, using the poorest person in the community as material for a doubtful experiment, is simply criminal and illustrates Pope's line, "That fools rush in where angels fear to tread."

B. F. Campbell, M.D.

METEOROLOGICAL RECORD

For the week ending September 9th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....3	29.85	69	78	60	94	86	90	S.W.	S.W.	3	14	O.	O.	
M.. 4	29.97	64	71	58	69	72	70	N.W.	N.E.	19	5	C.	C.	.04
T....5	30.05	62	73	52	75	75	75	S.	S.W.	3	10	C.	C.	
W...6	29 96	64	75	54	70	51	60	W.	N.W.	15	12	C.	C.	
T....7	30.13	62	73	51	55	56	56	N.	S.W.	16	12	C.	C.	
F....8	29.85	70	81	60	85	64	74	S.W.	N.W.	18	5	C.	O.	
S....9	30.03	62	67	58	71	80	76	N.	S.E.	12	3	O.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, September 9, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1306	566	16.16	12.72	10.88	1.68	2.24
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis . . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	168	60	16.20	8.40	7.80	3.60	.60
Baltimore . .	506,389	160	74	26.46	6.30	20.16	3.15	2.52
Cincinnati . .	405,000	103	—	8.82	15.68	6.86	.98	.98
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	114	42	31.68	4.40	19.36	8 80	.88
Washington .	277,000	117	43	24.65	7.65	10.20	8.50	4.25
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	54	22	22.10	9.25	16.65	1.85	—
Nashville . .	87,754	31	12	16.15	16.15	9.69	3.23	—
Charleston . .	65,165	29	9	17.25	13.80	13.80	—	—
Worcester . .	108,240	36	15	24.93	8.31	22.26	2.77	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	27	14	14.80	18.50	11.11	—	—
Lowell . . .	88,641	34	19	44.10	14.70	38.22	—	5.88
Lynn	66,703	22	6	20.75	4.15	12.45	—	—
New Bedford .	66,340	24	7	20.75	8.30	16.66	4.15	—
Somerville . .	66,101	9	3	22.22	11 11	22.22	—	—
Lawrence . .	57,263	24	19	20.75	8.30	16 66	4.15	—
Springfield . .	56,501	12	8	58.31	8.33	33.32	—	16.66
Holyoke . . .	43,424	18	6	16.66	5.55	11.11	5.55	—
Brockton . .	37,278	5	1	—	—	—	—	—
Salem	36,883	15	4	13.33	—	13.33	—	—
Malden . . .	34,613	4	—	25.00	50.00	25.00	—	—
Chelsea . . .	33,468	11	—	27.27	9.09	—	—	—
Haverhill . .	32,022	7	4	14.28	—	14.28	—	—
Gloucester . .	30,589	5	2	40.00	—	—	—	40.00
Newton . . .	29,716	7	3	28.56	—	14.28	14.28	—
Fitchburg . .	29,438	12	5	16.66	—	8.33	8.33	—
Taunton . . .	28,167	6	1	—	—	—	—	—
Everett . . .	25,338	9	6	11.11	—	11.11	—	—
Quincy . . .	23,549	8	3	37.50	—	37.50	—	—
Pittsfield . .	22,643	8	2	12.50	12.50	12.50	—	
Waltham . .	22,296	4	—	25.00	25.00	—	25.00	—
North Adams .	20,971	4	2	—	—	—	—	—
Chicopee . .	17,842	8	4	25.00	12.50	25.00	—	—
Medford . . .	16,511	3	3	—	33.33	—	—	—
Newburyport .	14,915	—	—	—	—	—	—	—
Melrose . . .	14,032	3	1	—	33.33	—	—	—

Deaths reported 2,417; under five years of age 970; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 467, consumption 257, acute lung diseases 173, diarrheal diseases 297, typhoid fever 63, diphtheria and croup 46, whooping-cough 22, cerebro-spinal meningitis 14, measles 10, scarlet fever 8, erysipelas 5.

From whooping-cough New York 16, Boston 2, Pittsburg, Providence, Charleston and Cambridge 1 each. From cerebro-spinal meningitis New York 7, Lynn and Chelsea 2 each, Boston, Washington and Providence 1 each. From measles New York 9, Pittsburg 1. From scarlet fever New York 4, Boston, Pittsburg, Washington and Chelsea 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending September 2d, the death-rate was 25 5. Deaths reported 5,571; acute diseases of the respiratory organs (London) 131, diarrhea 1,441, whooping-cough 83, measles 69, fever 62, diphtheria 61, scarlet fever 26, small-pox (Hull) 1.

The death-rates ranged from 18.5 in Bristol to 38.1 in Preston; Birmingham 28.6, Bradford 26.3, Cardiff 28.9, Gateshead 23.0, Hull 27.4, Leeds 19.9, Liverpool 33.7, London 22.1, Manchester 30.5, Nottingham 25.9, Portsmouth 32.5, Swansea 18.6.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING SEPTEMBER 7, 1899.

White, J. H., surgeon. Directed to proceed to National Soldiers' Home, Va., for special temporary duty. September 1, 1899.

Magruder, G. M., surgeon. To proceed to Port Tampa, Fla., for special temporary duty. September 1, 1899.

Wertenbaker, C. P., passed assistant surgeon. Granted leave of absence for fourteen days on account of sickness. September 8, 1899.

Smith, A. C., passed assistant surgeon. To proceed to Tortugas Quarantine for special temporary duty. September 4, 1899.

Gardner, Charles H., passed assistant surgeon. Granted leave of absence for one day. September 5, 1899.

Wickes, H. W., passed assistant surgeon. Leave of absence extended four days. September 1, 1899.

Fricks, L. D., assistant surgeon. To proceed to Key West, Fla., for special temporary duty. September 4, 1899.

Corput, G. M., assistant surgeon. Relieved from duty at Egmont Key Detention Camp, Fla., and granted leave of absence for thirty days on account of sickness. August 30, 1899.

King, Walter W., assistant surgeon. Relieved from duty at Reedy Island Quarantine, and directed to proceed to New Orleans, La., and report to the commanding officer for duty and assignment to quarters. September 4, 1899.

Thornbury, F. J., a sistant surgeon. Relieved from duty at Baltimore, Md., and directed to proceed to the Immigration Depot, New York, and report to the commanding officer for duty. August 25, 1899.

Trotter, F. E., assistant surgeon. Relieved from duty at Immigration Depot, New York, and directed to proceed to Mullet Key Detention Camp, Fla., and assume command. August 25, 1899.

Bean, L. C., acting assistant surgeon. Granted leave of absence for one day. August 26, 1899.

Brown, B. J., Jr., acting assistant surgeon. Granted leave of absence for three days. September 1, 1899.

Duffy, Francis, acting assistant surgeon. Granted leave of absence for two days. September 2, 1899.

Goldsborough, B. W., acting assistant surgeon. Granted leave of absence for one day. August 30, 1899.

Smith, A. W., acting assistant surgeon. Relieved from duty at Cape Charles Quarantine and directed to rejoin station at Baltimore, Md. August 25, 1899.

Peck, F. H., hospital steward. Relieved from duty at Hampton, Va., and directed to proceed to Mullet Key Detention Camp, Fla., for special temporary duty. September 1, 1899.

Olsen, E. T., hospital steward. To proceed to Tortugas Quarantine for special temporary duty. September 4, 1899.

APPOINTMENT.

Edward J. Agnelly, of New York, to be junior hospital steward. September 1, 1899.

BOARD CONVENED.

Board convened to meet at New York, N. Y., October 4, 1899, for the examination of candidates for appointment as assistant surgeon in the Service and officers for promotion. Detail for the board: H. W. Austin, surgeon, Chairman; G. W. Stoner, surgeon; C. E. Banks, surgeon, Recorder.

SOCIETY NOTICE.

The Mississippi Valley Medical Association. — A meeting of the Association will be held at Chicago from October 3d to 6th inclusive. Harold N. Moyer, M.D., is the Chairman, and S. C. Stanton, M.D., the Secretary of the Committee of Arrangements.

No essay or report shall be permitted to occupy more than twenty minutes, and discussions of reports and papers shall be limited to ten minutes for each member.

RECENT DEATHS.

Charles Thomas Robinson, M.D., of Harlem, New York City, died suddenly of cardiac disease, on September 11th. He was twenty-six years old, and born in New York. He was graduated from the Medical Department of Columbia University in 1895, and afterwards served on the house staff in St. Catharine's Hospital in Brooklyn. Dr. Robinson had been married less than a month.

BOOKS AND PAMPHLETS RECEIVED.

Report of the Trustees of the Newport Hospital. Presented to the Corporation at its Twenty-sixth Annual Meeting, July 11, 1899.

The Ohio Medical University Imbroglio: Personal Malice, Jealousy and Ambition, *vs.* the Demands for Higher Standards. Cincinnati: Press of Curts & Jennings.

The Evolution of Modern Therapy: An Address read before the Society of the Alumni of the Medical College of Virginia. By Simon Baruch, M.D., New York. Reprint. 1899.

Asthma: Recent Developments in its Treatment. By Ernest Kingscote, M.B., C.M., L.R.C.S. (Edin.), Fellow of the Medical Society of London, etc. London: Henry J. Glaisher. 1899.

The Mechanics of Surgery: Comprising Detailed Descriptions, Illustrations and Lists of the Instruments, Appliances and Furniture Necessary in Modern Surgical Art. By Charles Truax. Chicago. 1899.

Surgical Nursing. By Anna M. Fullerton, M.D., Clinical Professor of Gynecology in the Woman's Medical College of Pennsylvania, etc. Third edition, revised and enlarged, with 69 illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

Original Articles.

THE COMPLETED HISTORY OF A CASE OF TOTAL EXTIRPATION OF THE STOMACH, WITH REMARKS UPON THE SURGICAL TREATMENT OF GASTRIC CANCER.[1]

BY MAURICE H. RICHARDSON, M.D., BOSTON.

The early history of this case, with a description of the operation and progress of the patient for the following five months, will be found in the *Boston Medical and Surgical Journal* of October 20, 1898.

The patient's condition continued for some time to encourage the hope that many years of comfortable life were before her. She was able to take sufficient nourishment of great variety. There was no difficulty in assimilating what she did take. Though she gained little if any weight, she was able to go out to drive, and to be up and about the house. There was, however, in the epigastrium a sensation of drawing or dragging more or less pronounced, as if there were undue tension in front.

Careful examinations were repeatedly made by Dr. Defriez to detect any evidence of recurring disease, but they were always negative. It seemed not too much to hope that the dissection had been extensive enough to ensure a permanent cure, especially in view of the fact that at the time of operation the disease seemed to be confined to the stomach; there was apparently no involvement of liver, pancreas or lymphatics. The point of greatest improvement was reached about the first of November. The wound then unexpectedly reopened, after some pain and discomfort in the left hypochondrium.

On November 15, 1898, I made a careful examination. There was a small sinus at the centre of the wound, extending inward and slightly upward in the direction of the line of suture, and evidently connected in some way with it. From this sinus there was an escape of fluids and of pus. To the left, between the wound and the rib margin, there was an induration involving apparently the transverse colon and the muscles of the abdominal wall. The mass was smooth and resistant; it became gradually merged into the surrounding parts, having no distinct border and no irregularities.

In view of the fact that the sinus had reopened, and that there was probably more or less exudate still existing, I hoped that the mass to the left was simply an extension of the inflammatory process, and that with the good drainage then existing the whole would subside. There was ground for this hope, for once or twice before there had been a fistula which promptly closed. But no improvement took place. Not very long afterward symptoms of intestinal obstruction began to appear. There was at first a distinct paroxysmal peristal-is, shown by knotted intestinal coils, which were clearly visible through the abdominal walls. This symptom, though regarded by some as pathognomonic of obstruction, and though at times ominous, occasionally is conspicuous in disturbances that are purely functional. In such cases an active peristalsis may be distinctly visible, especially if the abdominal walls are thin. In this case, however, the symptom was regarded with some apprehension — an apprehension that subsequent events fully justified. The peristaltic movements soon became violent and painful, and were attended by the sounds which gas makes in passing a point of constriction. With these symptoms the right side of the abdomen began to be more prominent than the left, until it was clear that the ascending and the transverse colon were abnormally distended.

When the symptoms of intestinal obstruction appeared, the strength began to fail with alarming rapidity. The sinus continued to give outlet to more and more of the food taken; it became in reality an esophageal fistula, or a duodenal overflow. As soon as the colon became totally obstructed, the intestines above gradually filled to over-distention until their contents were regurgitated. As there was no stomach to receive the fluids, and as the open sinus afforded an outlet, they simply overflowed and escaped through this channel. The explanation of the appearance and the persistence of the sinus thus became clear, but the cause of the stricture still remained doubtful. It was hoped, as I have said before, that the lumen of the colon had been narrowed by an exudate which would in time become absorbed, and that the large amounts of nourishment which the patient was taking would restore her strength. The occasional occurrence of constrictions after end-to-end suture of the intestines justified the hope. Unfortunately, however, nothing took place to indicate that so favorable a solution might be expected. The cecum, ascending and transverse colon became enormously distended. As the obstruction became greater there was an increase of the overflow at the sinus, which acted as a safety valve, preventing distention of the intestine beyond a certain point and rendering vomiting impossible.

A chronic intestinal obstruction like this causes vomiting which is at first intermittent, but which later becomes constant, until everything is regurgitated, even the contents of the large intestine. In this case, however, there was no return of fluids from be low the ileocecal valve, and nothing stercoraceous at any time; for as soon as the intestines became sufficiently distended, fluids would escape from the sinus. Indeed, fluids taken by mouth passed directly into the duodenum. If the duodenum was already filled, the fluid would immediately overflow. Why there was no regurgitation of fecal matter I do not know, for there was free passage into and out of the duodenum. The sinus remained patent because fluids were constantly escaping through it.

The patient died February 19, 1899. The autopsy was made February 20th. The mass at the left of the epigastrium was recurrent cancer, which had infiltrated the peritoneum under the rectus, and had spread through and among the small intestines. There were nodular masses in the mesentery of both large and small intestines. Minute nodules were scattered everywhere. Near the splenic flexure the lumen of the colon was totally obstructed. Beyond this point the bowel was collapsed; above it was enormously distended.

The line of suture was perfect, except for a sinus about the size of the little finger. This sinus started at the left of the suture line, and passed downward, outward, and to the left. The orifice of the duodenum was large enough to permit the free passage of food; there was no constriction, though the parts were closely bound together by a firm exudate. There was no sign of recurrence at the line of junction. Had there been no recurrence in the intestines or elsewhere, the food would have passed along without hindrance.

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[1] Read before the Massachusetts Medical Society, June 13, 1899.

From the history of this case as thus briefly outlined, it may be concluded: first, that the patient's health would have been fully re-established had there been no recurrence of the original disease; secondly, that the sufferings were due to the mechanical effects of a chronic obstruction rather than to cancer itself; finally, that esophago-duodenostomy is technically possible in a certain percentage of cases.

This case adds one more to the deplorable number of recurrences after even the most extensive operations for cancer.

In admitting the frequency of recurrence we must not forget that many cases of cancer are permanently cured by operation. I do not now refer to cases of cancer of the stomach, but of cancer generally. The number of the former is small; their result well known. As to cancer of other organs, however, upon which numerous operations are performed, a large proportion of the cases are lost sight of; and it is only after systematic search that the true percentage of recurrences is known.

In cancer of the uterus, for instance, which, from its situation, does not permit the removal of as wide a margin of healthy tissue as cancer of the stomach, one is often surprised to learn that cases practically hopeless, almost inoperable, now and then are permanently cured. Recently I was informed of the present excellent health of two patients upon whom I had operated for cancer of the uterus in 1893. I found from the hospital records that both cases had been pronounced unfavorable; that in both the vaginal mucous membrane was somewhat affected. Never having collected my cases of hysterectomy for cancer, I had not heard of these recoveries, although I had seen several apparent cures in patients whose subsequent history I had followed. These two patients, as I say, are living and well to-day. Many other patients with cancer or with sarcoma who I supposed, from the conditions found at the time of operation, had surely succumbed long since to recurrence of the disease are now living and well. The large number of patients who do present themselves with unmistakable recurrences leads one to make a higher estimate of the number of such cases than perhaps the truth warrants; for many patients expect as a matter of course to be cured, and when they are cured, think it not worth while even to mention it to the physician. Recently, for example, a woman came to me upon whom I had operated in 1889, for extensive carcinoma of the breast. A year or two later I removed a large recurrent mass from the scar. Some eight years have elapsed since this second operation, and I now find her perfectly well, though I took it for granted that she had died long ago. I am convinced that we are inclined to take too hopeless a view of these cases, and to conclude from many recurrences that most cases of cancer are necessarily fatal.

In cancer of the breast there is a possibility of taking a wider margin of sound tissue than in cancer of the uterus, and when the lymph glands are infected they are in a space that can be freely dissected. In cancer of the stomach, however, though the margin may be perfectly satisfactory, the lymphatic system, if infected, does not permit of dissection. If it is assumed that all cases of cancer have, long before operation is possible, invaded the nearest lymph glands, then it is clear that no operation for radical cure can be undertaken. The close proximity of all the abdominal viscera to the great lymph channels makes it theoretically impossible to prevent remote infections, or to overtake even the nearest ones; but it certainly is true that cancer of the intestine, if thoroughly excised early in the disease, is in many cases completely cured, or, if not completely cured, relieved for many years. From many operations upon the uterus through the abdomen, I am convinced that invasion of the pelvic lymph glands is a late metastasis, and that it is often absent. Secondary deposits of cancer in the liver and other remote viscera I have seldom, if ever, observed in cancer of the uterus. So in cancer of the intestine many cases of extensive disease are apparently without secondary deposits.

I have explored many cases of cancer of the stomach, hoping to be able to perform radical operation. In the great majority of these cases the stomach itself has been so extensively infiltrated — the infiltration extending even to the contiguous viscera, the pancreas, or the liver — that no operation has been advisable. In very few have I noticed an enlargement of the nearest lymph glands. In the case herewith reported there was no engorgement of lymph glands to be seen either at the operation, or at the autopsy: the recurrence was apparently by direct extension.

The experience gained in this case, in my opinion, encourages rather than forbids further attempts in the surgical treatment of gastric cancer. The case undoubtedly goes to show that recurrence is the rule, even after the most extensive operations; but it helps to prove that more extensive operations are possible than were ever before known. If, therefore, patients can hereafter be brought to exploration not when the disease is so pronounced that the diagnosis is plain, but in the very beginning, when it is first suspected, such radical measures as pylorectomy or gastrectomy promise much. Exploration at this time would often demonstrate the very beginning of cancer; the patient's strength would be sufficient to warrant a recovery from the operation; the wide margin then possible from thorough dissection would improve greatly the chances of permanent cure.

Although in the present case the patient herself, a very intelligent woman, realized fully the nature of her disease and the great difficulties of the operation, with the chances of recurrence, yet she expressed herself at the close as convinced that the struggle was not worth while. This feeling was natural, and we all had great sympathy for her in it. Yet during the convalescence from the operation, and for some months afterward, her life was filled with happiness that she had withstood successfully the dangers of the operation, and with hope that she would escape a recurrence of the disease. In her discouragement at the very close of an unsuccessful fight she expressed herself as most people undoubtedly would. In the last weeks of her life the patient's condition was certainly deplorable. There was evidently a recurrence of cancer in the intestines, with complete stoppage somewhere near the splenic flexure; there was enormous distention of the colon; there were occasional violent paroxysms of peristalsis; and there was a profusely discharging sinus in the epigastrium. Moreover, there was emaciation and gradual loss of strength, though a large amount of nourishment was taken. For the reasons given in the foregoing paragraphs the food taken escaped quickly through the sinus. Yet up to the last weeks the patient was buoyed up by the hope that the worst would soon be passed, and that she would regain her health.

The suffering in cancer of the stomach in these later stages is very great; there is the distressing weakness, the great cachexia, the pain, the loss of appetite, the constant vomiting of decomposed food mixed with blood and cancerous discharges. There is, in a word, that deplorable state of things which makes cancer so justly dreaded. In the majority of cases the patients are not only willing to undergo the most dangerous operation, but they beg to take the chance, if it is but one in a thousand. The disappointment which such unfortunates feel when told that there is not even that chance, that no operation is justifiable, is almost beyond expression. Under such circumstances the sympathy of the surgeon leads him at times perhaps to undertake an operation as a forlorn hope, when, uninfluenced by the patient's despair, his decision would be against intervention. Many patients beg for operation because they would rather run any risk, no matter how great, than live as they are. If the operation proves the hopelessness of their case, they know at least that an attempt has been made to save them.

It is true that in some cases of gastric cancer there is comparatively little suffering. Such are the exceptions, however. They rarely are suitable cases for operation because the diagnosis is made late, and the disease is too far advanced for reasonable hope of cure. To this class belong the rapidly growing forms of cancer in the comparatively young. The disease progresses with great rapidity and death soon ends the suffering.

The suffering in the two classes of cases is, in my experience and judgment, much less with operation than without. I have seen not only the despair and suffering in the inoperable cases, but the suffering in those cases in which successful operation has been performed. The truth is that the former greatly exceed the latter and justify extensive operations when extensive operations are possible. If the patient upon whom it is proposed to perform such an operation, or his friends, hear the plain truth they then have an opportunity for making their own choice. This opportunity should be given to each patient, and the facts should be stated as clearly and as candidly as it is possible to state them. Then, no matter what happens, the surgeon will feel that he has given to his patient that advice which he would wish to have given to himself.

In the present case it was impossible beforehand to tell, or to suspect even, how severe an operation was at hand. The case seemed, on the chances, absolutely hopeless, and I did not in the least expect to perform a radical operation, although I was prepared to do so. The unlooked-for condition of things found — the distinct localization of the tumor, the great laxity of both duodenum and esophagus, the absence of complications, the extraordinary calmness and great strength of the patient — all these things made the duty perfectly plain. At that time not enough was known of the ultimate results of gastrectomies to be guided by them, for the cases operated upon were all reported as doing well. There was every reason for hope. After the operation every one was pleased that a radical attempt at cure had been made. It was only when the hopelessness of the case became apparent and the patient's great sufferings were observed, that regrets were expressed, and I admit that such regrets were but natural. But, after all, the regret that patients have been allowed to die without an attempt having been made to save them is much harder to bear than that felt when everything has been done which might bring relief.

A few technical points seem of importance as illustrated by this case.

The feasibility of extensive resections upon the stomach depends, first, upon the laxity of duodenal and of esophageal attachments. Unless the stomach can be drawn well out of the wound, and unless both duodenum and esophagus are lax and easily brought together, there is no use in attempting an esophago-duodenostomy, and the jejunum or some other coil of small intestine must be used. In case neither can be brought up to the esophagus, a theoretical way would be to close the esophagus, and bring the duodedum or the jejunum to the wound for an artificial mouth.

Even when the parts permit full approximation, it may be extremely difficult, if not impossible, to make a good joint, owing to the configuration of the thorax. In some subjects the rib margins are close together, the diaphragm and the subphrenic space dark and inaccessible. In such cases the technical difficulties of suturing are great, and a Murphy button should be used. This beautiful device should be at hand in all proposed resections of the stomach and intestines. If the patient's strength permits, however, I prefer to use needle and thread without mechanical aids. I should use the button when saving of time is essential and suturing difficult and unsatisfactory.

The objection to the use of silk is that it may cause a persistent sinus. This is especially liable to happen if there is sepsis from leakage. The importance of this disadvantage is, however, much overstated. As a practical thing, even in septic wounds, silk gives little trouble. I use it for everything, except for ligation of a gangrenous appendix or a septic Fallopian tube. Catgut also may cause a sinus. I have seen exfoliation of chromicized and of simple catgut. In operations upon the stomach silk seems to me essential because it is strong, durable, and does not slip. With catgut, however, I never feel safe if vessels of considerable size are tied.

Great care should be taken to prevent extravasation during the operation, though I cannot but think that the dangers from a contaminated field in gastric and intestinal surgery are exaggerated. Large masses of gauze so placed as to catch the discharges reduce to a minimum the risk of contamination. Although every such operation is necessarily septic, the deaths from sepsis are extremely rare — a fact that is due, in my opinion, to the use of provisional gauze drainage. So far as I can recall the cases, but one of my patients has died of general peritonitis after deliberate resection for a lesion not septic in itself. Even in resection for intestinal necroses (strangulated hernias and the like), the small number of deaths have been caused by shock rather than by peritonitis.

The use of temporary wicks at the line of suture seems to me essential. No joint in enterorrhaphy is free from the danger of extravasation — even if the most perfect of mechanical devices is used. In a case of gastro-enterostomy[2] in which the joint made with a Murphy button seemed absolutely secure, death followed sudden flooding of the peritoneal cavity from sloughing outside the line of approximation. On the other hand, I have seen no trouble follow the use of gauze. After simple gastrotomies, or simple linear enterostomies in which the fitting is perfect, I have usually dispensed with gauze. But in all cases of doubt I have as a personal preference used wicks. The better the apposition the smaller the wick and the shorter the time it is allowed to remain. If by the second or third day the gauze is uncontaminated, it may be withdrawn and the wound may be closed.

A point in connection with the removal of a large portion of the stomach is the danger of gangrene of the transverse colon. In Gaussel's tables there are several cases in which death was caused by this complication. The reason is that in tying off the greater curvature of the stomach the mesocolon is accidentally included, and the blood supply to the colon cut off. In a recent case of gastrectomy personally reported to me by the operator, the patient did perfectly well for a week, when death took place from gangrene of the colon. It was found that the blood supply had been cut off in tying the attachments of the greater curvature. In the present case a small segment of the mesocolon was tied, but the discovery was made before enough had been removed to compromise the safety of the colon. In a case of gastrectomy recently reported by Kocher, death was due to gangrene of the transverse colon.[3] The close anatomical relation between the omentum at the pyloric end of the greater curvature and the transverse mesocolon makes the mistake of including both instead of the omentum alone peculiarly likely to happen, especially if the suturing is begun at the pylorus and continued toward the left. The planes of omentum and transverse mesocolon are in practical contact at the pylorus, though they gradually become separated toward the spleen.

The present status of the treatment of cancer of the stomach may be briefly outlined as follows:

(1) Medical treatment, purely palliative, which has for its object the lessening of suffering and the prolongation of life.

(2) Surgical treatment, which endeavors to accomplish complete relief of suffering and restoration to perfect health; or at least relief from the most distressing symptoms.

Some cases justify only medical treatment; some require palliative operations. Are there not some that demand an attempt at least at radical cure?

It may be well here to emphasize certain well-known facts. Cancer of the stomach is deplorably frequent, forming 21.4 per cent. in all cases of cancer (W. H. Welch, quoted by Osler). In 1,000 autopsies at John Hopkins (Osler) 39 showed cancer of the stomach. The disease is hopeless under any but radical operative treatment. The suffering, as a rule excessive, is caused chiefly by mechanical and relievable conditions dependent upon the presence and situation of the tumor more than upon its nature. The principal manifestations of suffering are vomiting, distress, pain and starvation.

The only medical relief is from the free use of opiates. Death is welcome. Surgery offers for temporary relief of symptoms dependent upon mechanical causes, mechanical remedies reasonably safe in their application. For radical cure surgery offers a reasonable hope through operations of great difficulty and danger.

The stomach presents a field for surgical work which has exceptional anatomical advantages. It is easily accessible; its walls are so thick and flexible and broad that they permit extensive and ingenious plastic operations. The cut edges are easily approximated and fitted, the sutures are firmly held, and union is strong. The blood supply permits easy control, and hemorrhage during operations is trivial.

The stomach may be thoroughly explored through a comparatively small incision; it may be opened temporarily or permanently. When dilated, it may, by plaiting, be contracted and the mechanical causes of the dilatation may be removed; faulty shapes and faulty positions may be rectified; foreign bodies extracted. Such operations, even when performed not upon the perfectly well, but upon the considerably reduced, have an insignificant danger. We have but to recall numerous operations successfully performed in Boston to realize the brilliancy of this field for operation upon the comparatively well for mechanical lesions other than malignant. Even the more extensive operations upon the stomach, such as those necessitated in the removal of benign tumors, of cicatrices, of ulcers, show a brilliant record. But when the disease to be combated is a malignant one, when the operation to be successful demands the removal of a portion or even the whole of the gastric walls, and when the dangers of these formidable operations must be withstood by patients weakened by prolonged suffering and inadequate nourishment, the results have been and cannot but be discouraging. It is hardly necessary to say that this difference in results between malignant and non-malignant cases depends upon the far-reaching and lethal effects of cancer, upon local and upon constitutional conditions which well justify the word malignant.

In view of these well-known facts, are we to regard failure in the operative treatment of gastric cancer as inevitable? Are we, in a word, to give up in every case all thought of permanent cure, helplessly looking on, relieving pain with opiates and distress with lavage; resorting to surgery only as a palliative measure when the pylorus is completely obstructed?

Before adopting this policy of inaction, a glance at the work of the past twenty years may not be without suggestions as to the possibilities of the future. According to Gaussel,[4] in a compilation of 366 resections of the stomach and pylorus performed up to June, 1898, the immediate mortality from 1879 to 1885 was 73.68 per cent.; 1885 to 1890, 53.16 per cent.; 1890 to 1895, 37.66 per cent.; 1895 to 1899, 22.64 per cent.

Up to January, 1885, there had been 76 cases with 56 deaths before the tenth day. Nine patients lived at least a year; three two years; and one three years.

From 1885 to 1890 there were 79 operations with 42 deaths; 13 patients survived at least a year;

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[2] Boston Medical and Surgical Journal, January 9, 1896.

[3] Philadelphia Medical Journal, July 7, 1899.

[4] Du Traitement Curatif du Cancer de l'Estomac, 1899.

one lived two years; one two years and eight months; one eight and a half years.

From 1890 to 1895 there were 154 operations; 58 patients died; 38 lived at least a year. Of these two lived seven years; one six years; one five years.

From 1895 to 1898 there were 53 operations with 12 deaths. Seven patients lived at least a year, and many still survive. Of the four patients upon whom gastrectomy was performed two lived nine months, and two are, as far as I know, still living. At last accounts Brigham's patient was very well.

These figures are appropriate in connection with the case herewith reported, because it seems clear that the chief question to-day is not as to the influence upon prognosis that the operation has so much as the influence that the disease itself has; not so much a question how much we may take from the stomach, but rather whether we shall take anything at all.

The chief objection to surgical treatment lies in the numerous and early recurrences after operation. That this is a strong objection must be admitted, but that it is a sufficient one must be denied. Unless it can be shown that the sum total of suffering is greater with operation than without it, that life is, on the whole, shortened rather than prolonged, operations must, in suitable cases, be advised.

I have already reviewed the condition of patients treated medically — a condition which is certainly deplorable. If while the patient lives he is more comfortable, a great gain has been made. If moreover, he lives a life filled with hope, instead of one wretched with despair, there is a striking gain, even if his immediate physical sufferings are greater. Finally, if in a considerable percentage of cases there is a restoration to health lasting several years, the balance is decidedly influenced in favor of the operative side.

The statistics of Gaussel are based upon a large variety of cases operated upon by many surgeons. Undoubtedly many cases have been operated upon which did not really justify the operation. If only those cases were subjected to operation which offered a reasonable hope of immediate and permanent cure, the outlook would, I am sure, be much improved. Furthermore, if the operations were performed by those only who were skilful and experienced, the outlook would be still brighter. As far as my observation goes, cases are operated upon which are unsuitable not only for radical operation, but even for a rapid and simple exploration. I have had sent me for radical operation case after case which plainly presented absolute hopelessness, cases in which there was not only a large, immovable, adherent tumor filling the epigastrium, but also a cachexia which forbade even a simple and rapid exploration. Exploratory operations under what seem the most favorable conditions, both local and general, show in a striking majority of cases that surgical intervention is hopeless. Yet the statistics of gastric surgery are based not only upon such cases apparently hopeless, but also upon the absolutely inoperable. As I have said before, I have myself observed cases in which operations were proposed, if they were not actually performed, in which, to my thinking, the most trivial operation would have been unjustifiable. It is as unfair to consider the results of operations in such cases as it is to include in statistics of recurrent cancer of the breast those in which at operation large masses of cancer are left. Such cases are of no value in forecasting the future, because their future is already fixed. We must base our arguments rather upon the cases which present possibilities of recovery — cases in which the patient's excellent general condition promises well for immediate success, and in which favorable local conditions justify the further hope of ultimate cure.

It seems important to consider at this point the chief element of success in operations upon cancer of the stomach.

As in so many other surgical diseases, acute and chronic, success depends upon the early application of the operative remedy. But for the delay which a correct diagnosis makes necessary, operations upon the cancerous stomach would present a far more encouraging outlook than they now do. Yet to wait for sure diagnosis is to wait for as sure failure. Are we not justified, therefore, in operating as soon as cancer is first suspected? If we are thus justified, how strong must the suspicion be? Upon what symptoms shall it be based?

The diagnosis of cancer of the stomach is said to be easy. It is, nevertheless, often difficult. The most skilful clinicians may overlook cancer of the stomach when it is present; they may believe it present when it is not. The earlier in the disease that the symptoms are studied, the more difficult is the diagnosis. It is impossible without exploration to know that there is trouble, and yet when it is strongly suspected the exploration may show nothing. The wider the surgeon's experience the more doubtful he becomes of the clinical diagnosis. Indeed, when the light of surgical exploration is about to be thrown upon a case, then the doubt appears the strongest. It is at this time that one feels most acutely the possibility of error and the responsibility of decision.

Pain in the stomach, with digestive disturbances, at a suitable age, always suggests cancer. The suggestion is strengthened by vomiting, emaciation, and cachexia. With or without bloody vomitus, it is made almost a certainty by the presence of a tumor. But the disease may have advanced far beyond possible operative relief long before a tumor has been discovered, even before the diagnosis is more than suspected. Changes in the gastric juice may not be detected even when the case is absolutely inoperable. On the other hand, patient after patient recovers his health after digestive disturbances and emaciation which, it seems, cannot but indicate cancer. What is to be done then to avoid the loss of precious time in view of the difficulties of diagnosis? On the one hand, by delay we may be losing the only favorable moment; on the other, by an exploration we may be subjecting the patient without cancer to the dangers of opening the abdomen. Both these courses are indeed mistakes, but the former is a grave, the latter a trivial, one. The unnecessary exploration may be even a great gain by substituting for the apprehension of suspected cancer the certainty that none exists. Not to have given the patient the chance of operation at the favorable moment may seem a trivial thing compared to the mistake of an unnecessary operation. True, the excitement in a community caused by an unnecessary and fatal operation is great; but the withholding from the patient perhaps his only chance, whether it be in cancer of the stomach or in appendicitis, excites little comment. Yet in the one case there is almost certain loss of life; in the other but an unnecessary exposure to trivial danger. Fear of unnecessary operation plays by no means an insignificant part in the determination of the course to be pursued. This fear must be overcome if operations for cancer of the stomach are to be reasonably successful. The chance of mistake must be taken as one of the dangers of the surgical course of treatment, and it must be taken in the stage when cancer is first suspected.

The first indication for operation is a strong suspicion that malignant disease is present. Even then operation is inadvisable in marked cachexia (other than hemorrhagic) and in such diseases of other organs as will compromise success — diseases of the heart, lungs, kidneys. The local lesion in patients of excellent general condition may be conspicuously inoperable — out of all proportion to the functional disturbances. On the other hand, an excessive general manifestation — an extreme cachexia — may attend a local lesion of trivial extent. Local signs justifying resections are circumscribed tumors without contiguous or remote implications. Infiltrating masses not sharply defined, which approach contiguous viscera so that they must be closely shaved, do not justify radical measures. When complete extirpation of the disease requires complete extirpation of the stomach there is no local contraindication if the operation is technically possible. Palliative operations are impracticable when the disease is so widespread that there is no unaffected gastric surface for anastomosis with the jejunum. It is exceptional to find a stricture of the pylorus, however, in the widely infiltrating tumors. Operations are therefore demanded rather for radical cure than for palliation.

It seems clear that radical operations upon the stomach must necessarily be infrequent for reasons already stated. A case favorable enough to justify so serious a measure as partial resection cannot often present features that are favorable as to time, extent, complications and general constitutional excellence. If partial excisions are thus limited, complete extirpation must be still more infrequently justifiable. Taken altogether, patients with cancer of the stomach do not present an outlook favorable enough for operation once in fifty times. I have seen many cases of suspected cancer of the stomach. I have explored in at least twenty-five. In only one did I find a lesion justifying pylorectomy, and in only one gastrectomy. All the others were clearly so hopeless that nothing radical was attempted. In both the cases operated upon a movable tumor could be felt; in both resection was comparatively easy, and in both recovery from operation was rapid. In many of the cases explored tumors of great size were found, even when before operation none could be felt.

The indications for radical operation are thus seen to be narrow. They must be broadened by much earlier exploration based upon the earliest possible diagnosis. When performed at the earliest moment, upon patients whose general strength is but little impaired and in whom the disease itself is situated favorably for wide and thorough dissection, resection of the stomach, whether partial or complete, will present a very different outlook from what it does to-day.

ARMY NURSES HONORED. — The army female nurses have been invited to become members of the Association of Spanish War Veterans, a military society recently organized to perpetuate the memories which its name suggests.

THE BOSTON DISPENSARY CLINIC IN MENTAL DISEASES.[1]

BY ARTHUR C. JELLY, M.D., BOSTON.

SOME of you will perhaps remember a card received in December, 1897, which announced that a Department for Mental Diseases had been opened at the Boston Dispensary. The work has been under the direction of Dr. Walter Channing, whom I have assisted there and to whom I am indebted for the privilege of making this report. It was arranged that there should be clinics at the dispensary on two mornings a week, and that the assistant should see at their homes any patients whom the district physicians might wish to have examined there. It was to be expected from the character of the cases that the number in attendance upon any one clinic would be small. But since each case would require considerable time, it was evident that a large number was not so much to be desired as a variety. Moreover, the hope was entertained that careful attention to detail would lead the patient to visit the clinic sufficiently long to make the study thorough. On the whole, our experience has not been disappointing, for many patients have been under observation several months. On the other hand, certain promising cases disappeared after one visit. Examples of nearly all the common forms of mental disease have appeared.

An interesting group is made up of children and youth, showing defect either congenital or acquired very early in life. Many of these have come from Drs. Williams and Stowell, of the Children's Department, but the majority have been brought by officers of the Children's Aid Society. Such cases present a great variety. At one extreme are children so stupid that the outlook seems almost hopeless. Such is the following case, referred to us by Dr. J. N. Coolidge, of the West End Nursery :

J. L., four years old. Nothing remarkable in the history of either parent. Two of the mother's sisters died of phthisis, and one of them had chorea. Two of patient's sisters have died, the cause assigned in one case being "spinal meningitis" and in the other "cerebral congestion." The eldest child is an imbecile, who had epilepsy from the fourth to the tenth year. Three other children are said to be sound physically and mentally. Patient is the youngest child. When about two years old he was treated at the nursery for convulsions, apparently epileptic. He has now some ear trouble. He does not talk, can scarcely walk, shows lack of co-ordination in movements of hands. At the School for Feeble-Minded such children may often be taught much more than would appear possible to any one not familiar with the methods employed and the results obtained there. Under any less favorable conditions they usually fail to make any progress.

Rising in the scale from the imbecile of low grade, one finds cases of different degrees of intelligence up to that interesting class in which the defect seems to parents and teachers moral rather than mental. The management of such children is extremely difficult at times.

During the adolescent period, morbid fears and vicious habits of thought frequently cause great annoyance. If these continue, they lay the foundation for confirmed mental disturbance. If, on the other hand, they are successfully treated, the result is very satisfactory. Such a case is the following:

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[1] Read before the Boston Society for Medical Improvement, March 13, 1899.

A boy, sixteen years old, born of American parents. Mother enjoys good health and is not nervous; father scrofulous. A sister, younger, is well. Patient says he was always smart and bright until three years ago, when he had a "spell" come over him while working as an errand-boy during the summer. He left his work feeling very dull and stupid, went home and slept most of the time for forty-eight hours; had a doctor who said he was simply worn out. But he has had these dull spells off and on ever since. He gradually becomes listless, finds it hard to talk, stays in bed without any ambition; while sitting at a table reading, finds his head heavy and soon goes to sleep. Never has spasms, or bites his tongue or cheek; is never unconscious. Has sick spells now about once a month; each has lasted about a week. On one occasion only he had a strong impulse to run away and be alone. When doing errands he has been obliged to wait on the sidewalk some minutes before he could force himself to open the door and deliver the errand. When called upon to recite at school, his wits seem to leave him and he cannot answer at once, but he soon recovers himself. Frequently he lies awake for hours after going to bed, thinking over plans for the next day. Rides a bicycle, often fifty miles a day, much of it as fast as he can. Takes coffee at breakfast and tea at night. Appetite variable, digestion adequate, bowels constipated.

Physical examination. — Anemic and thin. Pupils equal, react; movements of eyes normal. Face decidedly infantile in type, forehead perfectly straight, palate long and narrow. Tongue flabby but extended well. Hands rather undeveloped and weak-looking; extended fairly well. Knee-joints not especially remarkable.

For the next two weeks he improved somewhat. Then he reported that he felt stupid and dazed and that he was afraid a dull spell was approaching. The next week he was greatly relieved because the spell had not amounted to much.

Through April his condition did not change materially, but during May and June there was steady improvement. In July he got employment at stencil-cutting and has since remained at this work. In October he came at our request to report. His father had cut his wrist and throat with suicidal intent, and nearly bled to death before he was removed to a hospital. A few days later his mother met with a bicycle accident and was confined to the hospital. His home was broken up, and he was boarding with an aged relative who did not provide for him very well. In spite of this trying experience, he kept at his work, and showed such a degree of self-control and such confidence in himself that we feel justified in believing that he has fully recovered.

That some insane people among the poor manage to get on outside of an asylum is well illustrated by a woman who has lived here and supported herself largely by her own labor since 1891, and who has been under observation at the clinic since February 3, 1898.

Mrs. J., widow fifty-six years old, born in New Hampshire of American parents. Family long-lived people without hereditary tendency to disease. She has two children alive. Climacteric eight years ago. Referred from Medical Department, to which she came for stomach trouble. She said that something moves inside of her; pieces come up into her mouth; they are found in the movements from her bowels. My suggestion that she might have a tape-worm she rejected with evident scorn, saying, "These are no tape-worms, but serpents; they clasp me round the waist, they hold my throat so that I cannot swallow, they get out into the cords of my neck, and into the flesh in other places and bite me there." Her belief is that these snakes are put into her mouth when she is asleep, and that they cause a terrible sinking feeling. Pills dissolve them. In this way she gets temporary relief, but something should be done to make the people stop putting them there. Something is done to other people in the house and they become ill, but do not understand the cause. The landlord and his wife do it or know who does. She went to the police about it, but they told her to see a doctor about it. So she came here for the protection of the city.

She described a typical attack as follows: The pain or queer feeling starts in the muscles of the legs, which swell or knot up; then there is a beating in the back or bowels, and soon there is the snake in her throat, where it remains till she takes a pill and kills it.

Briefly reviewed, this woman at twenty-five years of age gave birth to her first child and had an attack of "puerperal delirium and was flighty afterward." At thirty-five, after the second child was born, she showed hallucinations and delusions, was excited and dangerous and required the seclusion of a hospital. In 1887 she became a quiet working patient and in 1891 was discharged much improved.

It seems safe to allow her to remain in the community, because she no longer plans taking vengeance upon the conspirators, but changes her residence or asks the police for protection, or comes to us for medicine to correct bad effects. By the use of mild laxatives constantly, and of sedatives occasionally, and by regulation of the diet we have done something for her. But probably the most powerful therapeutic agent has been our firm adherence to the statement that we believe she will be protected from harm.

Among our earliest patients were some whose mental disturbance was not so advanced as to warrant making out a certificate of insanity and sending them to a hospital for insane, and yet was of such a character as to make probable an attack of serious nature unless it should be speedily checked. Three such cases follow:

December 22, 1898. J. T., forty-eight years old, widow, born in Vermont. Father died of consumption. Mother very nervous but not sickly. Patient never had any serious sickness. Recovered well from fracture of thigh some years ago. Had large ovarian cyst removed eight years ago. Recently contracted malaria in the South, but considers herself free from it now. Been very nervous all her life. Been living in Boston two months and been alone most of the time. Has become discouraged. Is afraid to leave a knife or scissors about because of suicidal impulses. When one of her relatives visits her she is in constant dread lest she may assault him with the cane he brings, though very fond of him. Weeps frequently. Has little money and has sought employment without encouragement.

January 9th. The patient eating better. In other respects is about the same or worse. Very lonely and melancholy. Should she be allowed to live alone in lodgings?

January 19, 1899. A. B., sent by Dr. J. M. Jackson, of Massachusetts General Hospital, single woman, twenty-five years old, formerly worked in a shoe factory, of late helped mother at home. Both parents and other children jolly and happy. Patient herself formerly always cheerful. She never had any serious illness. A year ago she suffered for some time from nervous dyspepsia and was despondent for a few days. For a long time she has had headaches, which have been severe of late. For about a week she has been very despondent and thoughts of suicide keep running through her head and she does not dare to read the papers any more. Such thoughts are present when she wakes in the morning and she does not dare to remain alone in her bedroom. She has eaten sparingly of late and slept poorly. She was asked to return in a week, but a month has elapsed since the first visit and we have not heard from her. Was it right to let her try to get along at home?

(*To be continued.*)

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ADMINISTRATION OF ETHER AT THE BOSTON CITY HOSPITAL.[1]

BY J. B. BLAKE, M.D., BOSTON.

THERE is little doubt that proportionately more ether is used in Boston than in any other city in the world. A keen interest in ether administration always exists in this vicinity, and has for various reasons increased rather than declined during the past two years. This is probably true the world over, and is, in part at least, due to the work of Schleich in both local and general anesthetics, the recent statistics of Gurlt in Germany, and of the St. Bartholomew Hospital in London. It was thought, therefore, that a brief statement of the routine of etherization at one of the large hospitals of Boston might be of some interest to this Society.

At the City Hospital three things have combined to increase greatly the attention paid to the administration of ether as well as the personal interest taken in it by the house officers. These things are: (1) The establishment of the Burrell Ether Prize; (2) the visit of Dr. Bennett, a professional anesthetizer from New York; (3) the introduction of the ether chart.

The Burrell Ether Prize was established about one and one-half years ago. The interest upon a sum of money presented for this purpose is awarded by the superintendent and senior surgeon semiannually to the house officer who is considered by the Committee on the Ether Prize to be the best etherizer among the eligible candidates. The prize committee consists of three members of the surgical staff, who personally watch the administration of ether by all candidates as frequently as possible, and who take testimony from other members of the staff also. The names of the prize committee are not announced, since it was thought that in this way they might obtain a fairer estimate of the ability of the candidates. It does not improve the work of an average house officer to know that a prize committee man is watching his every motion. Up to the present time six house officers have been eligible for the prize during each six months. These men are the three junior house officers and the three surgical dressers. There have been two awards thus far, and in each case the prize has been awarded to men who have given ether for twelve instead of six months. The decision of the committee has been made with much care, and is a task more difficult than might at first appear. The money value of the prize is of course but one of its attractions. In awarding the prize the committee consider safety, comfort, time and the amount of ether used.

Dr. Bennett, of New York, impressed all who saw him by the rapidity and the ease with which anesthesia was produced. He used the gas-ether apparatus, and demonstrated two cases at the City Hospital — patients who were about to be operated on when he arrived. One was an alcoholic case for perineal section, the other an old man for some minor operation. The production of anesthesia was so easy, so rapid, and apparently so pleasant to the patient that it could not fail to excite the admiration which it deserved.

The ether chart is modified from the one in use at Johns Hopkins Hospital. Its present form is at least partly experimental, and it will probably be further modified as time goes on, and in the directions which practical experience shall suggest. Its merits are many, its disadvantages few. The latter may be said to be exhausted in the expression not infrequently heard when it first appeared — that it increased the work of the etherizer. It certainly does increase the number and the accuracy of the observations which he must make upon the patient under his charge, and in this way it shows one of its very important advantages, which is that it helps greatly to concentrate the attention of the etherizer upon his task, and to prevent him from watching the operation or the surroundings. If it can teach the etherizer that his patient demands every bit of care and attention that he can bestow, the chart will have more than justified its introduction by its very first step.

Other advantages of the chart are the opportunity which it offers for a more careful study of cases, and particularly for the more accurate record of complications or emergencies, and their treatment; and, finally, it is of assistance to the operator, who by a single glance may get the general trend of pulse and respiration, in the same way that he gets the temperature record in the wards, and sees a series of consecutive observations instead of a single record. In a serious or long-continued operation this may be a very positive value.

The pulse is recorded every five minutes. At the bottom of the chart is a space for the record of respiration; at present this is made in figures and is also taken every five minutes, which seems unnecessary. A better arrangement would be to carry the lines of the chart lower, which would permit a point record of respiration, which would be similar to the pulse curve, and a ten or even fifteen minute observation of the breathing would probably be sufficient.

Until within six months Squibb's ether has been exclusively used at the Boston City Hospital. Recently Melincraft's ether has been tried, and has given fair satisfaction; Squibb's is still preferred by most of the house officers.

A tin cone with a rubber mouth-piece is used throughout the hospital, gauze or cotton waste being placed inside and saturated with ether. Since the substitution of the tin cone for the old cuff cone the amount of ether used has decreased, though the number of operations has remained the same or increased. With it the production of anesthesia and its continuation seem to be at least as easy as with the older forms.

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[1] Read before the Boston Society for Medical Improvement, March 13, 1899.

The writer and others have on several occasions used the following apparatus with fairly satisfactory results. In cases involving operations upon the mouth, lips or face, the patient is etherized by the usual cone; a rubber catheter is then introduced into one nostril and is connected with an oxygen cylinder; in the wash bottle to which the gas is led after leaving the cylinder and before being inhaled by the patient, ether is substituted for water. The oxygen bubbles up through the ether and carries with it a sufficient quantity of ether vapor to keep the patient anesthetized, as a rule. The difficulty which sometimes arises is due to the fact that the patient is breathing air through the mouth all the time, and a rather rapid stream of gas must be forced through the ether to counteract this. No unpleasant results have followed.

The use of oxygen after ether has been given a trial at the hospital, and is now restricted to those special cases in which the color and respiration tend to remain poor after the operation is finished.

The use of nitrous oxide to produce anesthesia, which is to be continued by ether or the substitution of chloroform duting ether anesthesia, or *vice versa*, is rarely employed at the Boston City Hospital, except at demonstrations to students.

Ether is given by the surgical junior house officer or by the surgical dresser. The junior is a regular house officer, having been previously an externe, and going on in succession to be senior house officer and house surgeon. He must therefore have finished, at least, three years of medical study, and have had six months' experience in out-patient work.

The surgical dresser holds an appointment for six months only. His duties are to make such simple ward dressings as may be assigned him by the house surgeon; the examination of urine under the supervision of Dr. Ogden, and the administration of ether at times when the junior is busy, or at the request of the visiting surgeon. Any medical student who has completed two years of study is eligible for this position. Any surgical dresser may at the end of six months make application for another term of service. It is thus to be seen that the administration of ether is entrusted, as in most other hospitals, to the youngest of the house staff.

The members of the surgical staff have always endeavored to give a certain amount of instruction in etherization to the house.

This instruction was formerly entrusted to two members of the surgical staff specially appointed for that purpose, who gave alternately two informal lectures to each new-coming set of juniors and surgical dressers, and then personally supervised each in one or more etherizations. At present this has been superceded by an arrangement by which each of the three surgical services appoints one of its own assistant surgeons to be responsible for the etherization and to instruct the etherizers in any way he thinks proper. It will probably be admitted that in etherization, even more than in most surgical procedures, actual demonstration and personal experience is of the first importance, and the difference between a surgical dresser who has given ether for six months and one who is about to give it for almost the first time is too obvious to need comment.

The etherizer is made to understand as foundation principles that the safety and comfort of the patient are of much more importance than the time required to put the patient under ether, or the amount of ether used. After having mastered the rudiments, it is of course desirable to reduce the time of producing anesthesia as low as is possible with comfort to the patient. Some of the house officers have had results in a series of cases which were surprising to the writer at least. One dresser etherized seventeen consecutive cases taken just as they came to operation in an average of about four minutes. Seventy-five charts taken at random from those made during January and February show about eight minutes as the time required to produce full anesthesia. This, of course, is actual elapsed time, not including transfer of patients.

The charts which are being circulated for inspection are the rough drafts, just as they appear at the close of the operation. They show various types of cases, and certain things which might not be expected. For instance, the initial rise of pulse rate with the beginning of anesthesia is not always present, even allowing for the fact that it is more difficult to make an accurate pulse curve during the production of etherization than at any other time. Several of the charts show that operations may at times be prolonged for two hours or more, with a pulse curve that is either approximately stationary, or even falling a little all the time. They show, also, that in certain long operations, such as herniæ or dissections of the axilla, the pulse may remain for a long time at precisely the same rate, instead of jumping up and down, as might have been expected. On the other hand, one or two of the charts show that it was best to end the operation with all possible speed.

There is no general rule in regard to administration of drugs before anesthesia. For a certain length of time $\frac{1}{60}$ of a grain of atropia was given by mouth fifteen minutes before the ether. The writer is personally satisfied that if atropia in the dose of either $\frac{1}{80}$ or $\frac{1}{100}$ of a grain were given to every case, unless for some special reason it were contraindicated, the result would be decidedly beneficial, both in diminishing vomiting, reducing the amount of secretion in the mouth and large air passages, and in direct stimulation to the respiration.

On three occasions slight fires due to the inflammability of ether have occurred. No damage has resulted, and the small blaze has been immediately extinguished. The reason that these occurrences are reported is to emphasize their origin, which has come with the introduction of the aseptic technique. In each operation room there is a small copper boiler in which the instruments are sterilized; this is heated by a gas flame, and is usually situated near the wash basin. In using ether after the preliminary scrubbing of the hands, a current of air apparently drove the ether vapor towards the sterilizer, and the fire resulted. Up to the time of the occurrence the possibility of such a thing was entirely overlooked.

Dr. Bennett's visit certainly suggested the question of the advisability of modifying the present system of giving ether in Boston hospitals.

Professional anesthetizers are common enough in London and in a few cities in the United States. They are the result of the modern movement towards specialization, and are certainly more rational and desirable products of that movement than certain other types which it has developed. In certain cases, and in private practice, the professional anesthetizer is a most desirable and delightful luxury, possibly at times almost a necessity. But it does not seem that the large general hospital have reached a point where it is desirable to substitute for the etherizer who is a house officer one who is an expert. There are other reasons besides that of expense. In any large hospital three anesthetizers would be required for part of the day at least, and one resident. From ten to fifteen operations are frequently performed in a day, and often three or four are being carried on simultaneously. The house officers would lose a very valuable part of their experience, and it is to be feared that the general public would suffer. The somewhat complicated gas and ether apparatus used by most professional anesthetizers could undoubtedly be mastered by the house officers, but much more slowly than is the case with the simple cone, and at times it certainly does not seem advisable to increase the difficulties with which the beginning etherizer so courageously but inefficiently struggles.

Is the present routine of ether administration at the City Hospital entirely satisfactory? It certainly cannot be said to be without faults, but they are faults which can be, and are being, modified. It is to be doubted if a perfect system of anesthetization can ever be carried into frictionless working order in a large American hospital. The emergencies and the rush of operative work are at times too great. But the writer is satisfied of two things: (1) That ether is given, on the average, better in and about Boston than in any other place in the world (with the possible exception of London); (2) that the average of etherization at the Boston City Hospital is decidedly better than it was ten years ago, and that the introduction of the ether chart is certainly sure to improve it, and, finally, that complications, catastrophes and disagreeable after-effects of anesthesia are, as rather careful observations show, less frequent than might reasonably be expected, if the statements of text-books can be taken as a fair standard. Only one case of pneumonia after ether has been discovered, and the proportion of vomiting in 250 cases was lower than the latest figures from the St. Bartholomew Hospital, of London.

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CYCLICAL, OR PERIODICAL, VOMITING.

BY ALBERT N. BLODGETT, M.D., BOSTON.

CASES of well-marked cyclical, or periodical, vomiting are so rarely observed, or at least so seldom reported, and are the subject of so little attention in the text-books of medical practice, that the following typical case is presented as a contribution to an infrequent and very obscure pathological condition, which appeared under circumstances particularly favorable for careful study, and in which the phenomena attending it could be fully noted and are believed to be correctly reported. The patient was under the care of a particularly competent nurse, and the facts related may be considered reliable.

The patient is a boy, at that time of thirteen years. He was from sea-going ancestry in both parental lines, and is descended from the old Puritan stock of South-eastern Massachusetts. From his father he is thought to have derived certain stigmata of neurotic character, as this parent at times showed signs of unsoundness of character, and was also subjected to unusual hardships at sea, both before and after the birth of this son, which are believed by the family to have been possible causative factors in the mental and moral variations in the child. I might add that the only other child is a daughter, somewhat older than the patient, in whom no particular nervous or other special tendencies are noticeable.

The patient has always been considered remarkably well except in regard to the conditions hereafter noted. He is a large, sturdy youth, looking older than his years, and is precocious in mental and physical development. He has been indulged by his family to an injudicious degree, and is capricious and "freaky" in temper. Appetite is usually very good, at times ravenous, and he often eats heartily between the hours of regular meals. Digestion and sleep normal, bowels active; there are no signs of intestinal worms or other irritation of the alimentary canal. Urine normal. No indications of genital irritation. Pulse and temperature normal.

I was called to this patient on account of recurrent periodical attacks of vomiting of protracted and stubborn character, occurring at fairly regular intervals of about four weeks, and lasting from two days to a week on each occasion. The paroxysms were usually preceded by a prodromal period of three to four days, during which the patient would become gradually languid, pale and spiritless, with progressive loss of appetite, increasing weakness, more or less pronounced constipation and moderate elevation of temperature; so that on several occasions it was suspected that the condition was that of commencing typhoid fever. On each occasion, however, after a period of nausea and headache, there supervened vomiting of paroxysmal character, in which enormous amounts of fluid stomach contents were thrown up, mixed with portions of food which had been ingested many hours, or sometimes even days before. In the vomitus were often found substances of most varying nature, such as pledgets of lint, wool, pieces of string, feathers, and other strange objects, which had been swallowed by the patient, generally at times shortly preceding the attack. A tendency to ingest strange and indigestible substances was noticeable at other times, independently of the periodic occurrence of vomiting.

During the first paroxysm, while the patient was under my observation, little could be done in the way of treatment on account of persistent nausea, and frequent retching, but when this had subsided, an efficient laxative was administered, which had the effect of relieving the bowel of much fecal accumulation, mixed with a considerable amount of foreign substances similar to those vomited. Upon subsidence of the acute symptoms, and the action of the laxative, recovery was rapid, and in a few days the patient was as well as ever. After an interval of about four weeks a similar train of symptoms was again developed, and the same process took place, with a similar result.

For some time after the second observed attack the patient was carefully watched during the interval between the paroxysms, and it was noticed that for about two weeks everything would go on in a normal manner, but at the end of that time he would begin to exhibit signs of restlessness, with capricious appetite, an uncontrollable inclination to swallow most extraordinary substances, such as woolen rags, portions of book-covers, paper, sticks, straw, sand, and other like indigestible substances. He has even been known to swallow portions of candles and boot-blacking. It cannot be thought strange that, in association with such morbid physical cravings, there should be also marked deviations in moral sense, and at such times there was always noticed in the patient an increased irritability of temper, with a tendency towards misstatement of facts, which under ordinary circumstances would be considered simply lying; with disorders of sleep and morbid inclinations in respect to morality, approaching to some extent the indications of perversion or inversion of ordinary mental and moral instincts.

These phenomena were soon recognized as indications of an approach of the symptoms culminating in cyclical, or periodical, vomiting, which in all observed attacks soon and invariably followed.

After one or two periods of such character, an attempt was made to obviate the attacks by means of treatment before the period of crisis should be reached. This was undertaken with the idea that by forestalling the attack by means adapted to relieve the stomach, the actual crisis might be averted. To this end, as soon as the symptoms of an approaching paroxysm were noticed, the patient was put to bed, the diet was restricted, and some emetic, generally ipecacuanha, was administered, followed by a gentle laxative. This had the effect of emptying the stomach and bowel of large amounts of the character before mentioned, with immediate relief to the patient, and the rapid subsidence of all the symptoms. The moral temperament and the physical condition of the patient were at once restored to normal, and the patient on each occasion escaped any further indications of periodic vomiting. The immediate relief was so highly appreciated by the sufferer that he not only made no objection to the emetic, but would of his own accord apply for the remedy before it would otherwise have been given. After some months of this preventive treatment, associated with tonics and hygienic measures, the tendency to periodic returns of vomiting was diminished, and it at length entirely disappeared, and thus far has not recurred. The time elapsed since the last symptoms of an attack, now many months, would seem to indicate that the morbid tendency is entirely overcome. The tastes and disposition of the patient have also undergone a marked and satisfactory change. He no more indulges his morbid appetite, has sought and obtained a business position in which he takes great interest, and which he conducts successfully. His general condition has also improved, his habits are steady, sleep is uniformly good, and all the functions of the body are carried on normally. The case may therefore be considered cured.

Periodic, or cyclical, vomiting, so far as it has been described, is usually associated with other symptoms or indications of an hysterical or neurotic temperament, or with exaggerated nervous susceptibility on the part of the affected patient. Most of the few cases noted have been in women, in whom also the stigmata of the neurotic element were otherwise distinctly present. In some it was plainly connected with disorders of the generative apparatus; in some no such relationship could be established. In a few cases periodic vomiting has appeared as the first noticeable symptom of organic lesion of the central nervous system, particularly of tabes. In the patient who forms the basis of this communication none of these relationships could be made out, but there was evidently an intimate connection between the gradual development of the symptoms and the temporary deviation of the mental and moral processes which always preceded and accompanied the attacks. There were none of the ordinary indications of hysteria, though the sex of the patient would not necessarily rule out this condition. The lad was not of an emotional temperament, but rather the opposite. Circumstances of time and season had no apparent relation to the occurrence of the attacks. Diet could not be accused. The hygienic and other habits of the patient were not different from those usual to boys of his age. No overstudy, no mental shock or known nervous insult had occurred to determine the neurosis, and there had been no prolonged or exhausting illness to provoke it. It would seem clear that the periodic recurrence of vomiting in this case was due either to the cumulative effect of some obscure influence of central nervous origin, acting in reflex paths; to the reaction of some retained toxin, or other offending substance, or to some disorder of the secretory function, or the eliminatory capacity of the excretory apparatus. From any of these causes a perversion of the natural gastric desires and processes might be gradually induced, to be followed by a periodical nervous discharge in the way of vomiting, with relief to all the symptoms until the next exacerbation should repeat the occurrence. No symptoms of nervous impairment or mental degradation, except the temporary moral obliquity alluded to above, could be detected in this patient.

The line of treatment here outlined may perhaps be called empirical, but it had the effect of interrupting the series of periodical attacks, with ultimate entire cessation of the morbid tendency. I cannot but believe that this case would have offered a most favorable occasion for the exhibition of hypnotic suggestion, though this method of treatment was not tried.

In the *Practitioner*, February 28, 1899, page 198, is the review of a case of cyclical vomiting reported by Whitney.[1] The patient was a neurotic, sensitive, high-strung boy, eight and one-half years old, with hereditary neurotic taint on the father's side. He had attacks of vomiting without known cause, recurring periodically at intervals of three months. There was a prodromal period of eighteen to twenty-four hours, when vomiting would occur, and continue for eighteen to thirty-six hours, to be followed by rapid recovery without active treatment.

Leyden first described this condition under the name of "periodic vomiting." Snow has also mentioned cases. Clinically the vomiting is sudden in onset, severe in character, and consists first of the contents of the stomach, followed by acid mucus. Regurgitation of intestinal contents or fecal vomiting has not been recorded. There is usually febrile action in children, though this may be wanting in adults. The abdomen is generally retracted. Prostration is out of proportion to the local manifestations, and may become threatening. There may be somnolence, delirium or excessive restlessness, sometimes with jactitation. The gastric crises may recur at intervals of six weeks to six months, and are not obviated by careful attention to diet or hygiene.

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[1] Arch. of Pediatrics, November, 1898, page 837.

Periodic vomiting has been thought to be a gastric neurosis, possibly related to migraine. It seems often not to be due to reflex effects from the central nervous system, but may possibly be due to the action of ptomaines or other toxic bodies retained in the system, especially in susceptible nervous patients. The disease may be allied to lithemia, as certain poisonous alloxuric bodies, such as paraxanthin and heteroxanthin, have been found in the urine of patients with migraine and periodic vomiting. A number of the observed cases have been in children. The treatment recommended has consisted in avoiding overstudy, with plenty of fresh air and exercise, and, particularly, attention to sleep. The diet should be simple, with fish to the exclusion of meats, and should contain large quantities of fluid, such as milk, lithia water, etc. Salol and the salicylates have been recommended, possibly as internal antiseptics, and the bowels should be kept free, laxatives being used if required.

Osler, in his recent text-book, alludes to periodical vomiting by name only.

In the "American System of Practical Medicine" the only allusion to this affection is the following: "Sometimes the disturbance is paroxysmal, and everything that is swallowed is quickly rejected for a number of days."

Boas [2] states that periodical vomiting occurs, as far as can be judged from the cases thus far reported, either in connection with a functional neurosis, such as hysteria, neurasthenia, hemicrania, etc., or in relation to reflex conditions dependent upon central lesions, such as tabes dorsalis, or as the result of affections of the sympathetic nervous system. Probably the affection described by Rossbach under the name of "gastroxynsis" is also allied to this condition, and due to some similar cause, though his description would seem to indicate a form of hemicrania with preponderance of gastric symptoms.

Boas further discusses the phenomena of periodic vomiting in treating of gastric neuroses, in which he mentions "juvenile vomiting," following overexertion in study, etc., but this condition would seem to present little in common with cases of true periodical vomiting. Charcot has called attention to "crises gastriques," in connection with tabes, of which he considers it to be at times the first noticeable symptom; and he therefore advises in every case of periodical vomiting to carefully observe the reaction of the pupils, the tendon reflexes and the acuity of sensation.

Periodical vomiting occurs most frequently in persons otherwise perfectly well. It generally recurs at fairly definite, and sometimes regular intervals, varying from one week to six months, and the individual attacks present a close resemblance to the "crises gastriques" of Charcot. The attack, as first described by Leyden, commences with indistinct prodromal symptoms, such as headache, languor, weakness, etc., or it appears suddenly without premonition, while the patient is in ordinary health, thus resembling explosive or cerebral vomiting. There may be preceding or accompanying pain in the epigastric or abdominal regions extending to the loins or back; or the first symptom may be a sudden and irresistible attack of vomiting, in which the stomach contents are forcibly rejected, often to a surprising amount, to be succeeded by further efforts of vomiting, in which gastric mucus, and, finally, duodenal fluids mixed with gall appear. It is somewhat interesting to note that the vomiting is usually confined to the hours of waking, and seldom interferes with sleep, the nights being usually calm and restful.

The duration of single attacks varies from one day to fourteen days. Recovery is usually rapid on subsidence of the vomiting, and the patient takes food with much relish, soon regaining his former strength and appearance, and quickly making good any loss of flesh which may have occurred during the attack. The other functions of the body seem to have undergone no deterioration from the gastric disturbance.

The causation may be an idiopathic neurosis of the stomach, or reflex effects from disturbances of other organs. Floating or dislocated kidney has been thought to produce periodical attacks of vomiting, but the exact relation of the two conditions has not been clearly defined. Hydronephrosis, from pressure, and possibly from uremic intoxication due to cumulative effects from sudden temporary renal insufficiency, has also been thought causative of this affection. Nicotine poisoning has been observed to cause recurrent vomiting, as has also the invasion of the intestine by certain parasites. In women, local conditions of the uterus and ovaries have at times a similar effect in periodical reflex gastric crises. When no sufficient cause can be ascertained, it is wise to bear in mind the occasional connection of this symptom with the early history of tabes, as it sometimes presents the first noticeable manifestation of a serious organic lesion of the spinal cord.

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Clinical Department.

DERMOID CYST OF THE OVARY WITH TWISTED PEDICLE IN A CHILD OF TEN YEARS; OPERATION WITH RECOVERY.

BY J. V. MEIGS, M.D., LOWELL, MASS.,
Surgeon to St. John's Hospital.

My only apology for reporting the following case is its rarity, coupled with the fact that we are always being confronted with cases where the history usually elicited is apt to throw us off the track and make us blunder in diagnosis.

It would seem as if it were easy to make a differential diagnosis between hydronephrosis and a dermoid cyst of the ovary, yet in the case following the difficulty can be seen, especially so if the previous history of the case is taken into consideration, together with the mother's statement.

T. M., female, age ten years, born in Lowell, always, as far as parents know, healthy, excepting now and then a urinary difficulty, painful micturition, incontinence, and sometimes retention, the difficulty existing over a period of several months, and attributed by parents to "worms." On June 17, 1899, at about noon, while at play, child fell from a swing to the ground, striking on its buttocks. Immediately there supervened intense pain in the abdomen, which increased as time went on. Upon undressing child, her mother noticed a swelling in the abdomen, which she had never seen before, and immediately sent for her physician, Dr. Halpin. The doctor recommended that she be sent to St. John's Hospital, where she was received by the house physician, who, upon examination, concluded that the tumor was a distended bladder.

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[2] Diagnostik und Therapie der Magenkrankheiten, II Auflage, p. 131.

He immediately catheterized the patient, getting about one ounce of urine. I saw the case at six P. M. same day, and also thought I had a distended bladder to deal with, and the catheter brought forth about the same quantity of urine; thereupon, I questioned the mother, with the result of getting the history as before related, and the statement that there had never been any tumor present in the child's abdomen previous to the fall, and that it must be a result of it. The abdomen by this time was very tender and somewhat tympanitic, so much so as to preclude any examination being made without an anesthetic. Child was also beginning to show evidences of shock. Permission was readily granted for anesthesia, and for any operation thought necessary.

I believed I had to deal with a hydronephrosis, caused probably by a kink or twist of the ureter, as a result of the fall. When anesthetized, and upon examination, I found the tumor somewhat solid, occupying a position to the right and below the umbilicus, as large as a cocoanut and quite movable. Here was more trouble. Was it a hydronephrosis or an ovarian cyst? To answer the question, after usual preparations were made I opened the abdomen in the median line, and found a dermoid cyst of the right ovary with a twist of the pedicle once and one-half. Cyst was dark in color, showing that its circulation had been at least impaired. It was untwisted, ligated and cut off. Other ovary was found to be healthy. Abdomen was closed, patient was returned to ward, where recovery was uneventful. She was discharged July 15, 1899, well. The tumor contained sebaceous matter, cartilage and bone.

I give the record of this case at some length for the reason that I have never seen such a one reported, and it was to me a curious case. Taking into consideration the history of the urinary disturbance, the record of the fall and the sudden development of the tumor, was it not easy to be mistaken in the diagnosis?

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Medical Progress.

REPORT ON PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

SO-CALLED SEBORRHEIC ECZEMA.

Audry,[1] of Toulouse, who has written before on this subject, deplores the use of the name seborrheic eczema, especially from the teacher's standpoint, as it implies the inclusion of a more extended variety of cases than properly belongs in this class.

In a short *résumé* of the history he points out that numerous authors had described perfectly the lesions grouped together by Unna under the term seborrheic eczema, some of them being considered eczemas, others seborrheas. Unna, as is well known, has included in his class many forms of moist eczema, as well as all forms of seborrhea except seborrhea oleosa and certain cases of psoriasis. Audry believes, in opposition to Unna, that the class of seborrheic eczemas should be restricted rather than enlarged, and that at present we are forced to rely chiefly on clinical observation, since pathological anatomy and bacteriology have furnished us no positive foothold.

It has been shown that the increase in the amount of sebum has not the fundamental importance in this affection that Unna attributed to it, as the sebum is often entirely wanting. It has also not been proved that the horny layer in seborrheic eczema is permeated with fat at all times. Audry has seen a seborrheic eczema develop on a cicatricial area where no species of gland could possibly exist.

In 1892 Neisser opposed the inclusion of seborrheic eczema among the eczemas, and offered the name seborrheic mycosis. This view was also held by Schwimmer, Leloir and Breda. Audry has suggested that the affection be called Unna's dermatosis, without, however, meeting with much support. The view that the affection is of a parasitic nature is gaining ground. Audry's view is that it is not an eczema, although there are in many instances many of the features of an eczema, and that seborrhea is not a necessary feature of the disease. It is an epidermal affection, probably parasitic in origin, inoculable and contagious, although the active agent has not as yet been determined.

Audry divides the cases of seborrheic eczema into three varieties: (1) The pure and regular forms; (2) the abnormal forms, and (3) the complicated cases. Among the abnormal forms he includes cases in which the course is acute, and the form erythemato-vesicular, a rare lichenoid form, and the psoriasiform variety. With regard to the latter there is much difference of opinion. Many believe with Unna that there are numerous cases falsely included under psoriasis which should be classed with seborrheic eczema, while others, although admitting the similarity of certain cases, think that there are not sufficient reasons for separating them from psoriasis. In these doubtful cases a point of distinction from the usual varieties, according to Audry, is the locality, a seborrheic eczema affecting the scalp, eyebrows, elbows and knees. It is often accompanied by white, glistening, fatty scales. Papular elevations are rarely prominent, the affection usually appearing as scattered plaques, more or less covered with thick, yellowish crusts. In rare instances large surfaces of the skin may be affected, and the erythrodermic form produced.

In enumerating the varieties according to the region affected, it is noted that the scalp is regarded as the point of origin of this affection. The ears are prominently affected, especially the external auditory canal. The eyebrows and lids, the nasolabial furrow and the lips, are also points of predilection. Upon the trunk the presternal and interscapular regions are frequently affected. The abdomen and extremities are the chief seat of the papular and psoriasiform varieties. The genitals are a frequent seat.

With regard to the bacteriology of the disease, caution is urged in admitting the micrococci to be the cause of the "eczematisation." Even if this were so we should not be much farther advanced in knowledge, as the eczema can only be considered as a complication. The various parasites described by Unna, Sabouraud and others as causative of seborrhea have not been confirmed by other observers and their connection with seborrheic eczema rests on a very poor foundation.

Audry regards sulphur as the most valuable therapeutic agent in this disease, which he ordinarily prescribes in the form of an ointment or paste, with sometimes the addition of salicylic acid or resorcin. In the dry, psoriasiform variety more stimulating applications may be employed. He considers sulphur baths to possess a remarkable and almost constantly beneficial action, and in this regard seborrheic eczema shows a marked distinction from other varieties, where baths in any form are distinctly injurious.

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[1] Annales de Derm. et de Syph., 1899, March, April.

UNIVERSAL LICHEN PLANUS FOLLOWED BY SUDDEN DEATH.

Fordyce[2] has reported an interesting case of lichen planus to the American Dermatological Association. It concerned a woman of sixty, and had been present over a year when seen. The affection had become universal and the patient had lost almost all of her hair. She had previously been insane and a hard drinker. When seen the eruption involved face, scalp, trunk and extremities, but did not affect the palms and soles. It was made up of groups of papules, circinate and gyrate in form, pigmented in the centre and with a surrounding pigmentation. There were also large, dark-red, shiny, umbilicated papules with angular outlines, and scaling, superficial lesions, resembling psoriasis. The circinate character of the lesions was very pronounced. There was intense itching, so that sleep and nutrition were interfered with. There was some improvement under arsenic, but acute exacerbations occurred, with a high temperature, rapid pulse and malaise. Finally, under increasing doses of arsenic, the eruption almost entirely disappeared, leaving intense pigmentation. A few days later she died suddenly on attempting to leave her bed. At the autopsy there was found an acute dilatation of the heart, with brown atrophy of the muscle. Also chronic diffuse nephritis, with arterio-sclerosis and infarctions.

The writer remarks that we are too ignorant of the etiology of lichen planus to say how the vascular and kidney changes are related to the cutaneous eruption. He regards it as probable from the manner in which the eruption extended, that the latter depended on changes in the cutaneous blood-vessels. An acute outbreak of the eruption was preceded by constitutional symptoms suggesting the presence of some poison in the general circulation. The only affections that could be considered in differential diagnosis were syphilis and psoriasis, but both could be easily eliminated. From a microscopical examination of several small papules excised from the back, the changes were found to be fairly typical of those usually met with in this process. The papillary layer of the corium was densely packed with small cells which stained deeply and were mostly mononuclear leucocytes. The chief characteristic of this cell infiltration was its sharp limitation to the vessels of the papillary layer. The cells were so closely packed that in some instances it was difficult to trace the boundary between them and the epidermis. Under high power there were found cells with larger, elongated, and brilliantly stained nuclei, which were probably young connective-tissue cells, as well as connective-tissue cells containing pigment, and also free pigment. The epidermis was invaded by leucocytes and there was a degeneration of the lower rete cells. The slight atrophy which the papule undergoes on involution is regarded by Fordyce as due to the degeneration just mentioned. He thinks the bluish-red color due to an extravasation of red globules and to the coloring matter that comes from their disintegration rather than to the opaque character of the thick layer of cells, as Unna believes.

ERYTHROMELALGIA.

Mitchell and Spiller[3] report a case of this affection in which important findings resulted from a microscopical examination of the arteries and nerves. It was that of a man of sixty-one, who began two years previously to have attacks of savage pain and tenderness in the right foot, with an intense erythema when the foot was dependent or was used. These phenomena occurred on various parts of the foot, and often lasted for months in the same locality. At one time an ulcer appeared on the outside of the fourth toe, which healed slowly. The erythematous areas were extremely sensitive to pressure. When seen the affection had been for some time confined to the great toe.

Dr. Mitchell had previously cured the affection in a young man by stretching the posterior tibial nerve and cutting the musculocutaneous and external saphenous nerves, but in a second case it had resulted in gangrene. In the case in question it was resolved to amputate the toe and half of the metatarsal bone. It was found microscopically that the nerves were greatly degenerated, the nerve bundles being composed almost entirely of connective tissue, with disappearance of the fibres. There were no less striking changes in the blood-vessels. The media of the arteries was thickened, and the intima intensely proliferated, so that the lumen was obliterated in some instances. The authors are unable to say whether the arterio-sclerosis or the neuritis was the primary lesion. It is very probable that such diseases of the vessels may cause a degeneration of the nerve fibres. It is also to be remembered that the arterio-sclerosis may have been due to the advanced age of the patient, yet the writers regard the symptoms as due to the peripheral neuritis. The preservation of sensation in the face of such nerve degeneration is remarkable.

RECURRENT, DESQUAMATIVE, SCARLATINIFORM ERYTHEMA.

Crocker[4] relates two instances of this affection. Its importance lies in the difficulty of differentiating it from scarlet fever, and undoubtedly many such mistakes are continually being made.

His first case was that of a hospital nurse, thirty-one years of age, who entered the University College Hospital in January, 1897, with her fifth attack. Her first attack of all had occurred nine years previously, of a milder character than those following, consisting of an erythema first of the face and then extending to the body, followed by slight scaling. After this she had several attacks similar to the present one. The face was of a deep red color and scaling, the front of the body the seat of a brawny desquamation, while on the backs of the hands the skin had entirely peeled off, leaving a scaling surface beneath. The lower limbs were also in a markedly scaling condition. At the outset of the attack the joints had been swollen and painful on motion and the temperature slightly raised. The affection continued with intermissions for about two months. There were several exacerbations, a bright red erythema appearing before the desquamation from the last outbreak had disappeared. Some slight constitutional symptoms accompanied the exacerbations.

The second case was that of a man of twenty-one who entered the hospital with his third attack of the disease. He presented a bright-red scarlatiniform eruption over the trunk and thighs. There were slight temperature changes, but no marked constitutional disturbance. After a week or ten days there was universal desquamation.

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[2] Journal Cut. and Gen. Urin. Dis., February, 1899.

[3] American Journal of the Medical Sciences, January, 1899.

[4] British Journal of Dermatology, May, 1899.

Crocker asserts that the first attack occurs most frequently between thirty and forty, although it may come at any time. It has occurred more often in men than in women. Its most salient features are its rapid invasion, followed by desquamation in large patches a few days after its onset, its tendency to relapse and to recur at intervals of months or years. The most important points in distinguishing it from scarlet fever are the short duration of prodromal symptoms, the appearance of the eruption in a way not characteristic of scarlet fever, the lower range of temperature, and the abrupt desquamation in large flakes three or four days after the beginning. The treatment is uniform temperature, rest in bed, and softening of the skin with olive oil or some bland ointment. Full doses of perchloride of iron may be given, on the theory that the disease is due to a toxin. In the first case salicin seemed to ward off a relapse and is therefore worth trying in the future.

(*To be continued.*)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

Regular meeting was held March 13th, the President, Dr. R. H. Fitz, in the chair.

Dr. J. B. Blake reported on the

ADMINISTRATION OF ETHER AT THE BOSTON CITY HOSPITAL.[1]

Dr. Broughton: Was there any evidence of persistent thirst after the use of atropia in the laparotomy operations or in case of large hemorrhage?

Dr. Blake: In one or two cases the patient complained of thirst, but in the majority of cases in which atropine was used there was no such complaint, although the direct question was put to them. Children stand atropine particularly well. A dose of one one-hundredth of a grain may be given to almost any child over four years of age.

Dr. Blake: Instruction in etherization for students is part of the medical school work. So far as I know there is no provision for actual etherization to be carried on by the students themselves. At the City Hospital Dr. Burrell always gives one or two clinics a year in which he demonstrates the administration of ether, chloroform and gas, and from time to time he asks members of the fourth class to give ether, but so far as I know there is no provision to allow men of the fourth year to etherize for themselves.

Dr. Vickery: I think very much of atropine as preparatory to etherization. I am quite sure it is a great help in many cases. I have usually given one one-hundredth of a grain by the mouth about fifteen minutes before the anesthetic.

Dr. Arthur C. Jelly read a paper entitled

DEPARTMENT OF MENTAL DISEASES AT THE BOSTON DISPENSARY.[2]

Dr. Channing: It has always seemed to be very unfortunate that the city of Boston had no proper place to receive emergency cases of insanity. A patient with typhoid fever, or a child with diphtheria, or a man with a broken leg has some place to go to, but a man who requires immediate treatment of the most delicate kind, in which not only the medical but the social elements must be considered, has now no place to go in the city of Boston when he is suddenly taken with an attack of insanity except to the city prison, with the exception, I might say, of the Boston Lunatic Hospital, where he may be taken with emergency papers. A certain number of cases go there, but only a small number. As we all know, mental disease, like other diseases, has an incipient stage, and while the symptoms are not always very distinct if one is familiar with them they generally can be made out, and it is in this incipient stage, if ever, that an attack of insanity may be averted. Of course it is the general practitioner who usually sees the cases in the early stage, and unfortunately mental disease, unlike other diseases, does not betray itself by very striking symptoms in this early stage frequently. There is usually a condition of depression, and the patient is more or less introspective and keeps his trouble, and as far as he can, his mental symptoms to himself, and therefore they go unrecognized until perhaps some sudden attack reveals the nature of the disease. I myself of course knew there were more or less of these cases, but had no idea how many of them there might be, until we had had some experience at the Boston Dispensary and I must say I have been surprised that so many cases have been brought to us and that they have come voluntarily, and that leads me to feel that something should be done if possible not only to furnish a hospital or place where emergency cases can be received, but some other place where cases can be taken for observation or can be treated for a while. As we all know, in the homes of the poor there are very few facilities for taking care of a person who requires rest and good food and medical treatment or constant medical observation. I hoped at one time that I could myself, in connection with my work at the dispensary, open a private free hospital in the city for mild cases of mental disease or cases which were on the border line, or were not fully developed, and I went so far as to get a license for a place of that kind and had the refusal of a house, but on the whole I regarded it as rather too much of an undertaking for me to have the responsibility of personally. I now, however, have the license and what I wish very much to do is to get a few other physicians to combine with me and see if we cannot take the first step toward establishing what we should have here, that is, a hospital for the early and emergency treatment of cases of mental disease. The treatment in the public hospitals of developed cases is as good as we could expect. The general classifications of the insane in the State institutions is very good, but taking what should be an ideal system, there are still some very important factors left out. We should especially have some institution for the early observation of cases, and if we had here in Boston an institution of that sort a great many patients might be kept from being regularly committed and we should have more confidence on the part of the public in institutions and more would be willing to put themselves under treatment. One great difficulty now is that very naturally persons who are beginning to be insane dread to have the fact known, or their friends dread to have it known, because they fear they will be arrested or committed to an insane asylum and they regard that as a stigma to be avoided by every possible means, and if we could have here in Boston a fairly good sized hospital, with possibly an out-patient department, and there take such cases, I am sure in time we should very much help along the general cause of the proper treatment of the insane, and indirectly save the taxpayers a large amount of money.

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[1] See page 312 of the Journal.

[2] See page 310 of the Journal.

Dr. Bullard: It is perhaps not known to Dr. Channing that this subject has already been taken up by other persons. The Executive Committee of the Hospital Trustees' Association at their meeting in December voted that action should be taken in relation to a proper place for the reception of such insane persons as were picked up on the streets or were otherwise found in Boston and are now likely to be taken in charge either at the Tombs or at Deer Island, and a committee was appointed, of which Dr. Stedman and myself were members, for the purpose of seeing what could be done in this direction. It appears this plan had also been considered by some of the city authorities and Mr. Marshall, commissioner of penal institutions, had intended to present a recommendation for such a plan in his forthcoming report. I have seen Mayor Quincy, who is apparently favorably disposed to the city's taking some action on this matter, and Mr. Marshall has now under consideration the exact means by which this can be best accomplished. The plan was to obtain a building to contain perhaps ten beds with proper attendants, to which such people could be brought, to be kept there a few days until it could be decided by the proper physicians whether they were insane and should be transferred to asylums, whether they should be taken in charge of by friends, or were not insane and should be sent elsewhere. I think that the need for such a place in Boston must be apparent to every physician who has had active practice with this class of patients. There are now a considerable number of persons taken to the Tombs and to Deer Island in regard to whose sanity there is considerable doubt and the examining physicians are required to examine them either at the Tombs or Deer Island and report upon their conditions, whereas such examination should be made in certain cases before they are taken to any penal institution whatever. I think perhaps Dr. Prescott can explain the plans of the commissioner.

Dr. George Jelly: The reader's paper is interesting as showing the development of a new work in Boston which I think is important. Heretofore there has been no public place where mild cases could be treated and the reports certainly show that it has been of benefit. The thing I wish to speak of more particularly, however, is this place of observation, the observation hospital of which I have been in favor and have advocated for a great many years. Perhaps it would not be amiss to explain a little more fully how we are situated at the present time. The medical work of the department of public institutions has been for some years in the hands of Dr. Waterman and myself, with whom are now associated Dr. Prescott and Dr. Arthur Jelly as assistants who act in our absence. The working is something like this: every case of so-called insanity which includes all the cases of delirium tremens which are arrested on the streets of Boston, or for making disturbance anywhere and thought to be insane, are reported to the office. They are brought to the city prison and reported there. It becomes our duty to examine those cases. There are a very large number of delirium tremens cases, many of them in a very wretched and weak condition. They are very properly sent, I think, at present to the hospital at Deer Island, where there is a very comfortable hospital and where it is wonderful to see how these miserable cases of delirium tremens do improve. There is this other class of patients for which there is no provision in Boston. There are doubtful cases — the cases we have to see often very rapidly because frequently they are not brought in before 10.30 or 11 o'clock and if we commit them they must be committed by 12 or a little after. Some of the cases are unable to give any account of themselves. In some cases there is the question of liquor and a positive diagnosis cannot then be made. For those cases there is at present no proper provision. We are obliged to send them to the hospital at Deer Island. There they are put under the care of the resident physician and not discharged until reported back to the office at Boston. That I do not think is the proper place for them.

Sometimes there are very respectable people whose homes and whose relatives we cannot find, though an effort is always made. The work has been done very conservatively and we have tried to be very careful, and thus far have had no suits for maltreatment or false commitment. There is the other class of very violent cases whose friends cannot be found, in which there is no doubt of their insanity and who are proper cases of commitment, but perhaps the judges may have gone home, it may be Saturday night or Sunday, and a certain proportion of those cases we have been in the habit of sending to the Boston Insane Hospital on emergency papers. Those papers have been rather difficult to make out. We had to have the signature of the mayor, certificate of two physicians, sign a bond of $100 that the patient shall be either properly committed within five days or removed to a hospital. It has been my custom to sign the bond and get the signature of the mayor. At present under the provision of the law of 1898, the clause requiring the signature of one of the aldermen or mayor has been abolished, so that all we need now is the certificate of two physicians, a statement of his condition, that it shall be a case requiring immediate treatment and a bond which anybody signs. For that class of patients and the doubtful cases of insanity we need proper provision very much, and I think it is a shame we do not have a place in Boston such as has been alluded to by the reader and the other speakers. There is some such department as that in Bellevue, though I understand the requirements are not up to the modern standard. I am glad this thing has come up. It has been in the air a good while, and I hope with the assistance of Dr. Bullard and Dr. Stedman and the other members we may get some place, and then there will be nothing that can prejudice a person against treatment. There are friends of patients now who object to have their friends sent to an insane asylum without being consulted and we cannot find the friends. There is that class of respectable people who are strongly prejudiced against having them sent to a hospital which is connected with a penal institution. I myself, and I have no doubt Dr. Waterman will tell you the same, feel very anxious that something shall be done.

In reply to a question by Dr. Bullard, Dr. Jelly said that transportation of emergency cases was provided for in this way: We find a case Saturday night or Sunday morning; we make out the papers and get the regular transportation officer who has charge of all of the cases of transportation, and order from the station or city prison a carriage, and send one or two policemen with the patient.

Dr. Bullard: The difficulty of transportation is sometimes very great to a private physician.

Dr. Jelly: I suppose that the expense must eventually come upon the department of institutions and that they should require the approval of the bill by Dr. Waterman or myself. In private cases where the friends have any means the family would, of course, pay all expenses.

Dr. Waterman: I hardly think there is much that I can add to the exhaustive remarks of the other gentlemen. Dr. Jelly has explained to you in full detail the various maneuvres by which the suspected cases of insanity are taken care of. For a long time I have felt, as he and the others have expressed themselves, the need of a special small hospital equipped somewhat as has been mentioned, although I think that but few of the patients whom we see actually *suffer* for the need of such a hospital. The police, as I understand it, have distinct orders from their superintendent that in case a person is making a disturbance or for any reason requires to be arrested, if there is the slightest suspicion he is insane he is to be detained in the station-house but for a moment and then immediately sent to the city prison. The vast majority of these cases are cases of delirium tremens, which do not suffer from their detention at the city prison. I have never found any difficulty where I have seen a person who was really in a critical condition, so far as danger to life is concerned, from an attack of delirium tremens that Dr. Rowe was not quite willing to admit the patient to the City Hospital. Of course they dislike to have those cases there, but they take our word for it that the person is in a critical condition and when the hour is so late that they cannot be sent to the hospital at Deer Island they are taken and kept a day or so, until we can send them in an ambulance from the City Hospital to the boat and from the boat to the hospital at Deer Island, if they have improved so that they can safely bear the transfer. The hospital at Deer Island is certainly a very admirable little institution and although at first many of the friends of border-line cases object to their going there for observation until their case can be accurately determined, still they are pretty reasonable on the whole when it is explained to them that it is a hospital entirely separate from the penal portion of the institution and admirably conducted. They then usually consent. The cases which should be placed in this proposed observation hospital are the rare and unusual cases, and those of course are sure to happen, as Victor Hugo says about the unexpected — it must always be looked for; for instance, gentlemen who are temporarily sojourning in the city and have had a previous attack of acute mania and suddenly break down at a hotel and become violently insane; it seems as though a padded cell in the city prison was not quite the place for a gentleman under those circumstances, and the same is true occasionally of ladies. It is not extremely rare that we see a lady both by birth and education who has wandered away from home on some sudden impulse and is found conducting herself in an unseemly manner on the street and is taken to the city prison and of course, if she is very violent, she is placed in a padded cell. Then there are a number of senile dements who are perfectly tractable at home, both male and female, harmless, requiring to be watched, and they will sooner or later wander away and get lost, and oftentimes go out in the most unsuitable weather, are found wandering about in the suburbs in a driving snow storm or pouring rain, and are brought by the police to the city prison because they are unable to tell who they are or where they live, and oftentimes the friends do not appear within twenty-four to thirty-six hours, in which case they, as a matter of humanity, must go to the hospital at Deer Island and not be allowed to remain in a cell at the city prison, although it is quite true that both the keeper and the matron of the house are admirably qualified for their positions and take the greatest pains to carry out our instructions as regards food and remedies so far as lies in their power. Of course, persons are often so violent that it is imperative to place them in a padded cell; sometimes it is not safe to let them have a mattress because they have been known to tear everything to pieces and at times they have caused fires, so that I can but agree most fully in the necessity of a small observation hospital of the kind which has been mentioned, and I think that the broad law of humanity, which allows us to send these cases to the hospital at Deer Island, would certainly allow us to keep them in such a hospital, and once being there, their friends coming to see them, and finding them well cared for, would be quite willing they should remain there until their mental condition, which is oftentimes in abeyance, could be fully determined.

Dr. Knapp: I am certainly very much surprised to hear Dr. George Jelly make the statement that until this department at the dispensary was founded there was no place for the public treatment or diagnosis of the mild cases of insanity here in Boston, because certainly at the City Hospital, and I think at the Massachusetts Hospital, the cases of mental disease form a not insignificant part in the clinic of nervous diseases. I took occasion to glance over the last report of the City Hospital and if we include as mental cases the neurasthenic and hysterical patients, many of whom have very striking and interesting mental symptoms, the mental cases form about one-fifth of the whole number of nervous out-patients, and I presume the cases are much the same in the nervous department at the Massachusetts Hospital.

I agree fully with what has been said as to the necessity for some sort of a reception house or some method of treating the doubtful cases of insanity and the acute cases other than putting them in the city prison or sending them to the hospital at Deer Island. Sending them to the city prison is a relic of barbarism which I believe should be stopped as soon as possible. So far as the sudden and violent cases of insanity go, the laws are tolerably good in the provision which has been made for the emergency commitments, if they were put in force a little oftener than they are, and as Dr. Lane in a letter to the *Boston Medical and Surgi-*

cal Journal a short time ago has shown, we are ready at the Boston Insane Hospital to take such cases. As a matter of fact we do take a very considerable number of cases, not only of city cases but also of State cases, and with the further development of the Boston Insane Hospital that provision for emergency cases will be still better. There is another class of cases and a very important class, which Dr. Channing has referred to, the incipient cases, the doubtful cases, and, given a reception house, the question is where they can go. Under the present laws they cannot be sent anywhere unless they wish to go. If they are willing they can go as voluntary patients to the insane hospitals or they can go as voluntary patients to the general hospitals. Various doubtful cases of mental disease which I see in the Out-patient Department of the City Hospital are referred to the house and kept there occasionally for observation if they are willing to go, supposing they are not willing to come under medical observation, as is often the case — then we can do nothing and there is not the slightest chance of getting any change in the laws whereby a person, not certainly insane, can be deprived of his liberty against his will. There are very many cases of incipient or doubtful mental diseases who would refuse to go to an insane hospital as voluntary patients, would even refuse to go to a general hospital as voluntary patients, and in the present provision of the law they cannot be sent anywhere, nor would a reception house, if one were started, be any better than the hospitals which exist. If those patients could be persuaded to go to a proper place, such as one of the private hospitals, or to the Boston Insane Hospital, as voluntary patients, they could be placed under proper observation. If some of the provisions of the present voluntary admission law were altered, and the objections to the reception of such cases due to the settlement laws were obviated, a good many such cases could be received and they could get proper observation and treatment in the early stages. It should be our effort to encourage, by voluntary entrance to the hospital, the early hospital treatment of incipient mental disease or cases which are not sufficiently insane to warrant commitment. There is thus a place for emergency cases of insanity in Boston and there might be facilities in Boston for treatment of cases which were not distinctly insane, or for the observation of the cases if the patients could be induced to go.

I must say I am sorry to hear the plan which has been proposed by Dr. Prescott and Mr. Marshall for a small house somewhere near the Court House for the reception of these doubtful cases of mental disease. Under this plan they are not under medical observation, they are simply in charge of a matron and a male nurse. They might call in certain physicians from time to time to see them, but the condition is not so very much better than if they were put in a thick-walled padded cell in the Tombs. It seems to me we should urge one of two things. Dr. Arthur Jelly has suggested a third, a separate institution in the way of a more or less fully equipped hospital. That, in the first place, is a very expensive thing if it is to be a hospital to accommodate any considerable number of cases, and it does not seem to me a necessary thing. It seems to me that what we need is one of two things: either an observation ward in connection with some existing insane hospital or an observation ward in connection with some general hospital. Such a ward in connection with the Massachusetts General Hospital or the City Hospital would be in the first place a comparatively inexpensive structure; it would require no separate administration or maintenance; it would be an easy and simple thing to manage. The patients could be sent there; ambulances could be sent for them as ambulances are sent for other emergencies and accidents. They could be put in a ward where they would be under careful observation, where the decision could be made as to whether or not they should go to an insane hospital. To send them out to Austin Farm involves, of course, a longer journey, and there is not at present such a thing as an ambulance service, although it is possible that if the need were sufficiently great we could in time develop some method whereby a carriage or an ambulance, with some suitable attendant, could be sent for an emergency case. That is a problem which has not occurred to me before, but it is a thing I think we certainly could develop at the Boston Insane Hospital if the necessity came. Therefore, it seems to me, the essential thing must be an observation ward, like the insane pavilion at Bellevue, only better than that — an observation ward preferably in connection with a general hospital where you would have all the facilities of a general hospital at hand and where patients could be received, not only the excited cases but also the doubtful cases and many mild cases. These need not come into a special observation ward at all; they could go into the general wards with other patients. A small building with ten to twenty beds in connection with a general hospital seems to me a better solution of the difficulty than to build a reception house with padded cells and no constant medical supervision, and run it as an independent hospital.

Dr. Channing: This reception-house egg which has been sat on recently is very well as far as it goes, but it is only so far an egg and, like a good many other city projects, may never hatch out into anything, but it certainly will be an entering wedge. In my opinion, it will only take care of a small number of the more acute and violent cases, and while it would be very much better than nothing it by no means covers the whole ground. It seems to me it is very important in taking care of the insane in a city like this to have a place where the mild and border-line cases already spoken of can be received, and if you have accommodations in a reception house for so small a number as ten you can only take a small proportion of such cases.

The department of mental disease at the dispensary serves the purpose of further classifying the various kinds of cases that come to a dispensary or a hospital. We know that many mental cases come to the departments for nervous diseases in the general hospitals, and we get most of our cases referred from those hospitals. Our experience is that our department has been a means of bringing such cases together and getting up an interest in them.

Dr. George Jelly: I did not intend to ignore the City Hospital or the Massachusetts General Hospital in the departments Dr. Knapp has mentioned. I meant simply that the department at the dispensary was the only one especially devoted to the work of mental diseases.

Professor Pfeiffer, of the Institute for Infectious Diseases at Berlin, has been appointed professor of hygiene at Königsberg,

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Twenty-first Annual Congress, held in Chicago, May 22, 23 and 24, 1899.

(Concluded from No. 12, p. 298.)

SECOND DAY.

THE RELATION OF PATHOLOGICAL CONDITIONS IN THE ETHMOID REGION OF THE NOSE, AND ASTHMA was considered by the Association, the discussion being opened by Dr. Henry L. Swain, of New Haven, in a paper on

PATHOLOGY.

The title assumes that a relation is supposed to exist or does exist, and if the latter, what sort of relation is it? Shall we consider that the nasal condition produces the asthma or is the ethmoid condition an accidental complication of the asthma? Or are they both the outcome of some depraved condition of the general system which has its outward expression in these two disease processes, and if the latter is the case what is the exact rôle of the nasal disease in the asthmatic complex?

Asthma means hyperesthesia of the bronchial lining with a resulting explosion of energy. In addition, some other structures are diseased, excitation of which sets up the bronchial spasm. The connection between these two is the vasomotor system — the neurotic habit. The nose is only one of many diseased sites which can produce an asthmatic attack. What is the initiatory stage of the latter and why does it occur? It may arise from some intranasal irritation, but the presence of polypi, for instance, does not offer the final explanation, for potassium iodide or a change of environment will often relieve our patient even though the polypi remain. These changes of environment and of mode of life may be only very trivial apparently, but may exercise a vast effect upon the patient's well-being. A case was narrated in which the mere change from a feather to a hair pillow completely relieved the attacks. Until this change was made, all therapeutic resources were useless, and after the subsidence of the attacks from the relief of intranasal irritation, several pathological conditions in the nose cleared up of their own accord. We have here an illustration of the fact that certain irritations applied to certain nerve fibres will produce congestion and chronic inflammation with swelling and watery discharge. Then come soaking of the tissues, edematous changes and polypi.

In many of these cases of hyperesthetic mucosa there seems to be all over the body a thinness or flabbiness of the blood-vessel walls and a vasomotor responsiveness to irritation which make possible the explosions which are the bane of the existence of these afflicted mortals.

This character of vessel wall may be the inherent peculiarity of the neurotic subject. Such a theory would explain the headache, asthma, neuralgia, etc., which at the start are only vasomotor spasms. Later, by continued distention of the vessels, these walls become permanently stretched and flabby and thus organic lesions are possible.

In general, the ethmoid or middle-turbinate changes in all these cases are hypertrophic and confined to the mucosa. In over 60 cases purulent ethmoiditis was found only three times and in these it was secondary to long previous existence of edematous tissue. Disease of the bony structures occurred in this same series of cases some six or eight times without purulent conditions and was here due to polyp formation. Septal spurs and bends serve to keep up the middle turbinate disease and increase the possibility of pressure.

We have therefore to explain the production of edematous and other hypertrophies. This probably results from repeated irritations which gradually lead to vascular relaxation and the occurrence of edematous tissue. In turn come contact areas and areas of pressure. With the latter present, the initiative of the asthmatic attack is easy if at the same time our bronchial apparatus is also diseased or susceptible. Cooling off of the night air, for example, as always occurs along towards morning, the recumbent position favoring the flux of blood to the head, may be the immediate excitant. Suddenly the sensitive nerves in the edematous areas are stimulated and an increased flow of blood to the nose causes swelling and immediate increase of pressure.

We have assumed an excessive nerve sensitiveness and hence the pressure which could not affect a normal nerve will in our sensitive individual bring into play the reflex action in the bronchial tract, disturbing the latter's vasomotor equilibrium. The mucosa swells, the pneumogastric filaments are stimulated and then occurs the spasm of the bronchial musculature. This line of reasoning explains why intranasal pressure causes asthma and how its removal relieves the latter. In cases where the asthma persists after the removal it may be that, the avenues having become established, it takes only the slightest irritation of the hypersensitive nerves to start an impulse to set the bronchi into a spasm without actual pressure on the contact areas.

There are, of course, asthmatics whose attacks are not apparently nasal but who are nevertheless made very much better and sometimes entirely relieved by removing any existing nasal disease. Such people have their disturbance only under peculiar conditions, such as excesses, disturbed kidneys, rheumatism, or, in women, the onset of the monthly period. These work apparently through the vasomotor link in our chain of sequences. Some cases we find difficulty in explaining from any known point of view. Occasionally we find our only remedy in change of environment.

CLINICAL PHASES OF THE SUBJECT.

Dr. E. Fletcher Ingals, of Chicago, said that he had not found asthma associated with polypi as often as seemed to be the experience of others. Many cases came from riding behind horses, being near a stable, etc. It was not in these cases merely a question of dust, for these same people could ride a bicycle or behind oxen. In three cases the patients had asserted that they had had dyspnea from only one lung and that corresponded to the side in which in these cases presented intranasal lesions. One patient was subject to asthmatic attacks when on the ground, but was relieved by going to the sixth story of a building. Removal from one house to another of the same character only a few blocks away has cured others. A change from one part of a house to another even has sufficed to relieve some cases. He had found that inhalations of a spray containing three per cent. of cocaine and five per cent. of sodium nitrite would often relieve apparently by a reduction of the bronchial mucosa's sensitiveness.

Dr. F. H. Bosworth, of New York, discussed the question of

TREATMENT.

He believed that the whole question turned upon the integrity of the respiratory function of the nose. The bronchi were only air conductors, but there was an intimate relation between their mucosa and that of the nares. In asthma the condition was one of vasomotor paresis, not of muscular spasm. Behind the polypi, the polypoid degeneration and the edematous hypertrophy is an ethmoiditis (not necessarily of the purulent variety), which either burrows into the middle turbinate, which thus becomes in a sense the outlying portion of the ethmoid, or may crowd the turbinate against the septum without hollowing it out. The cause is the occlusion of the normal anterior and posterior ethmoidal orifices from mild acute inflammation set up by a cold on the foundation of an old chronic hypertrophy of the mucosa. In the ethmoid cells the lining takes on an edematous character and there results intracellular pressure from distention.

The great indication for treatment, therefore, is to treat the ethmoiditis, to relieve the intracellular pressure by breaking down the honeycombed mass. A radical operation is necessary. It is not enough merely to remove the polypi. We must uncap the egg-shell-like structure of the diseased ethmoid. Points of contact should also be obliterated. not so much because of the pressure there exerted but because they encroach on the lumen of the nares. In his own experience, cutting forceps was unsatisfactory. He preferred rounded and oval burrs from one-sixteenth to one-quarter inch in diameter driven by power of any sort. We should burr down, stop, use burr as probe, then revolve it again until all the thin trabeculæ are broken down and free drainage established. In 99 out of 100 cases, treatment confined to the anterior cells would be sufficient. He had never had bad results with the burr. He formerly held that if cocaine applied to the nose did not relieve an asthmatic attack. it was useless to do any intranasal operation, but he does not now hold to this exclusive view. Purulent ethmoid disease does not give asthma. but inflammatory disease does. Many colds in the head are doubtless acute ethmoiditis.

The general discussion was opened by **Dr. E. L. Shurly**, who remarked that the question was a difficult one to settle on account of the complex physiology of the vasomotor system. We should look farther back than ethmoiditis and the edematous rhinitis. Recent experiments have shown that the filaments from the cranial nerves and spinal cord are really conducting cables and that in the same one there may be filaments for various functions. In different animals and different individuals of the same group there is a great difference in the communicating branches between the nerve trunks. These anatomical variations explain the peculiarities in individual cases. Moreover it must not be forgotten that the nose has an olfactory as well as a respiratory office, though in man the former function is very rudimentary. Impulses may travel along the sensory filaments and owing to defective insulation, as it were, may produce hyperesthesia. Our cases must be divided into those due to local disease and those due to psychic influence.

Dr. Shurly felt that he must take exception to the statement that the bronchial tubes were mere air conduits. There is a peculiar arrangement of the adenoid tissue in them, the functions of which we do not know, as we are but little acquainted with its biochemistry. In his personal experience, in the majority of cases asthma was not accompanied by any sensible derangement of the nose.

Dr. J. N. McKenzie, of Baltimore, said that the primal cause of asthma was not confined to any special peripheral organ, but resides in the individual as a whole. The area of nerve explosion depends on the seat of the local pathological process. Irritation may come from a peripheral organ, as the nose, a distant organ, as the uterus, or from a general dyscrasia, as gout. On this theory mere contact areas and pressure points are of no value. Nasal cough may come in atrophic states. Final explanation is not to be sought in nasal or bronchial abnormalities, for all the theories thus far advanced fail to conform to the requirements of a logical hypothesis. All polypoid degeneration is not due to ethmoiditis, as is evidenced by both clinical and pathological observation. As to treatment, he had had no difficulty with forceps. It is useless to temporize. We must use curette, burr and gouge freely.

Dr. Makuen said that asthma depended on faulty nervimuscular action, which might have a thousand exciting causes.

Dr. Thomas Hubbard called attention to the autotoxemia theory. Such toxemia may be due to gastroenteric absorption or faulty elimination. Such possible factors must be borne in mind in the study of each individual case.

Dr. F. E. Hopkins, of Springfield, Mass., read a paper on

I. RECURRENCE OF THE TONSIL AFTER EXCISION; II. A CASE OF HYSTERICAL LARYNX.

A case of this nature was reported and a *résumé* given of the references to the subject during the period of modern laryngology. The history of the case of hysterical larynx will be found in the *Laryngoscope* for February, 1899, p. 97.

Dr. Farlow remarked that partial removal left behind diseased tissue, especially in the lower prolongation of the organ where the irritation of the lingual movements against its hardest part was apt to induce recurrence. The instrument usually employed was the guillotine, but the ideal one was an instrument which would actually get in between the anterior and posterior pillars. The latter were not the limit of the amount of tissue to be removed, which was the quantity of tonsillar tissue actually present. He strongly advocated the additional employment of the scissors or punch. He also called attention to the frequent development, especially in young adults, of the plica triangularis, or fold of tissue running down diagonally over the anterior surface of the tonsil, and which was often mistaken for part of the anterior pillar. This plica should be included in the tissue to be removed.

Dr. Newcomb believed that recurrence often happened in tenement-house children from the fact that they were obliged to return after operation to the same bad general unhygienic environment which had occasioned the original disease.

Dr. Woolen said that a tonsil once removed cannot return. He believed that what we call the tonsil is really a pathological product, which he viewed much in the same light as he would a wart or a papilloma, not, indeed, always requiring removal. He had abandoned in this connection the terms "removal" and "excision," and now always employed instead "enucleation." He endeavored to enucleate with the guillotine, but had the fork removed from the instrument he employed, using instead a vulsellum in the other hand to lift the tonsil from its bed. He tested the organ removed with a probe passed into the crypts on the surface down through the tissue. If it reached a solid bottom, he knew he had removed the follicles entire, but if it easily passed through and came out on the other side, he was convinced that the operation had been incomplete. These nubbins of tissue thus left behind might easily provoke a subsequent quinsy.

Dr. D. Braden Kyle, of Philadelphia, would look upon a recurring tonsil as a purely pathological product, benign, it is true, and of a hyperplastic nature. It was the large, soft spongy tonsil which was apt to recur. The recurring mass was more a tumor than a tonsil, and somewhat in the order of an adenoma.

Dr. Makuen called attention to the necessity of properly separating adherent pillars before any instrument for removal was applied, and had devised a special set of cutting blades for this purpose.

THIRD DAY.

Dr. E. Fletcher Ingals, of Chicago, read a paper entitled

FIBROLIPOMA OF THE EPIGLOTTIS AND BASE OF TONGUE.

His patient was a farmer, age twenty-eight years, who for three or four years previous had had difficulty in breathing, swallowing and speaking. In 1896 the cautery had been applied along with scissors and snare to the base of the tongue, and a mass removed. He came under Dr. Ingals's observation in February of the present year. During the preceding two months there had been an aggravation of symptoms, especially dyspnea on lying down. A smooth mass could be seen, with a congested surface. It was in the laryngopharynx, apparently attached to the right side of the pharynx and base of the tongue, and appeared to be of a fibrous nature. Upon attempted removal with the cold snare (No. 5 wire), the wire broke three times. Later, removal was easily effected with a uterine écraseur properly bent, No 8 wire being used. The mass measured from one to one and a half inches in its various diameters. There were other masses left behind, which were removed in the same manner at later sittings. Some were almost purely fibrous, some fatty and some of mixed type. Attachment was as above noted, with, in addition, the right side of the epiglottis. The patient was recently seen, and it was noted that the right side of the epiglottis had become adherent to the right side of the pharynx and base of the tongue. Such adhesions would prevent the epiglottis from closing down over the larynx during deglutition, but there was no difficulty with this function.

Dr. Woolen mentioned a somewhat similar case. The patient had been exhibited to students several times before operation and the wire slipped over the growth in order to show them the mode of removal. When the latter was finally attempted the patient suddenly ceased breathing. Artificial respiration restored him, but upon a second attempt the same accident happened and this time proved fatal. No anesthetic, local or general, had been used. If such had been used the sudden death would probably have been attributed to such use.

Dr. D. Braden Kyle, of Philadelphia, read a paper on

CONFINED SUPPURATION OF THE FRONTAL SINUS WITH SPONTANEOUS RUPTURE, INCLUDING REPORT OF A CASE.

The patient was a woman, age sixty, and seen on January, 1898. Her trouble had commenced with an initial fulness at the inner angle of the left orbit with a profuse nasal discharge. The face was swollen on the same (left) side and there was a slight tenderness. An attack of grippe about this time did not seem to materially increase the symptoms. Two months later the orbital swelling began to increase in size and finally a rupture with escape of pus occurred on the forehead a little to the left of the median line. It took two months after rupture to heal the wound. Dr. Kyle had been unable to find another exactly identical case, though several closely resembled it, the histories of which he gave.

Dr. John O. Roe, of Rochester, read a paper entitled

THE PRESENCE OF PARTITIONS AND DIVERTICULA AS A CAUSE OF RETARDED RECOVERY IN THE TREATMENT OF DISEASES OF THE MAXILLARY ANTRUM.

He said that in the treatment of antral disease, too little attention was paid to anatomical considerations. We should take into account: (1) The position of the sinus; (2) its size, shape and conformation; (3) the thickness of its walls, and (4) the relation of the tooth roots to its interior. A series of skulls was shown illustrating these points. Dr. Roe also showed an antrum searcher, consisting of a probe-pointed flexible steel spring running in a canula and capable of being projected from the latter after it was in the antrum. With this instrument the cavity of the antrum could be thoroughly explored through a very small opening. Dr. Roe used a saw to enlarge the latter if necessary rather than a rongeur forceps.

Dr. MacKenzie did not think it always necessary to interfere with septa in the antrum. It was important to remember that in some antra the ostium maxillare was high up and posterior to its normal site. In such cases the discharge would be more apt to drain posteriorly and appear high up in the nasopharynx and such location might determine failure in operation. In cases of painful sinusitis, politzerization of the cavities through the natural openings would often afford almost instant relief, and in cases of pain extending over a wide area often enable us to determine its exact point of origin. Drainage tubes he was inclined to look upon as pus-producers.

Dr. G. V. Woolen, of Indianapolis, read a paper entitled

TAKING COLD.

The writer summarized the current views upon this topic. He believed that external influences were reflected upon internal surfaces, thereby causing nutritional disturbances and the latter caused deficient calorification. He had found by a series of observations that persons who habitually take cold have a subnormal temperature — even as low as 95° — even in people who appear perfectly well-nourished, and this subnormal temperature may explain much of their indefinite malaise. There is a deficient hematosis and this deficiency appears in the circulatory apparatus through vasomotor agencies. In some people this condition dates back to improper care as to bathing, etc., during the first week of life. This may be the critical period. If a child passes into adolescence without getting into the "taking cold" habit he regarded it as safe for life. This habit may in some instances be the reflection of hereditary syphilis in the third or fourth generation. This same deficient hematosis may also arise from nasal stenosis and precisely the same train of symptoms be set up.

Dr. Goodale said that we must not forget the rôle played by micro-organisms which appear to affect the lymphoid tissue. The symptoms of an ordinary cold are, in mild degree, those of bacterial infection; in moderately severe cases the staphylococcus, and in very severe the streptococcus, predominates.

Dr. Bosworth could not quite agree with the preceding speaker, for the rapid onset of a coryza was often too quick for bacterial invasion to have taken place. We take cold in many other ways than in the head. Acute rhinitis is only a local expression of a general disturbance.

During the executive sessions the following were elected to Active Fellowship: Dr. F. C. Cobb, of Boston, thesis, "Peritonsillar Abscess"; Dr. J. F. McKernon, of New York, thesis, "A Contribution to the Technique of Modern Uranoplasty," and Dr. Max Thorner, of Cincinnati, thesis, "The Direct Examination of the Larynx in Children."

Election of officers for the coming year resulted as follows: President, Dr. Samuel Thurston, of Baltimore; First Vice-President, Dr. T. Amory de Blois, of Boston; Second Vice-President, Dr. Moreau Brown, of Chicago; Secretary and Treasurer, Dr. Henry L. Swain, of New Haven; Librarian, Dr. Joseph H. Bryan, of Washington; Member of Council, Dr. Wm. E. Casselberry, Chicago.

The next meeting will be held at Washington in connection with the Triennial Congress of the Association of American Physicians.

The following papers were read by title:

"Dermoid Cyst of the Nose," by Dr. H. S. Burkett, of Montreal.

"Atrophic Rhinitis, with Report of Cases," by Dr. James E. Logan, of Kansas City.

"Tuberculosis of the Pharynx, with Report of a Case in a Child," by Dr. T. Melville Hardie, of Chicago.

"Syphilis of the Antrum of Highmore," by Dr. H. L. Wagner, of San Francisco.

"Report of two Cases of Accessory Thryoid at the Base of Tongue," by Dr. A. W. Watson, of Philadelphia.

"Remarks on Intranasal Operations," by Dr. W. F. Chappell, of New York.

"Pemphigus of the Larynx," by Dr. J. H. Bryan, of Washington, D. C.

"The Early Diagnosis of Aneurism of the Aortic Arch," by Dr. William Porter, of St. Louis.

"A Report of the Operative Treatment of Several Cases of Frontal and Maxillary Sinusitis," by Dr. F. W. Hinkel, of Buffalo.

"Report of a Case of Abscess of the Frontal Ethmoid and Sphenoidal Sinuses, Meningitis, Death," by Dr. J. H. Bryan, of Washington.

THE BOSTON

Medical and Surgical Journal.

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SETTLEMENT OF SUITS FOR DAMAGES OUT OF COURT.

We have recently heard with satisfaction that there is a growing tendency in the large corporations to settle suits brought against them without the formality of court proceedings. This is an attitude which we have long felt would conduce greatly to a solution of the difficult problems of responsibility on the one hand, and over-exaggeration of injury for personal ends on the other. Leaving out of the question the definite physical injuries of a surgical sort, about which there is little controversy as a rule, we find that the great majority of persons who seek redress for injuries are afflicted with certain disorders of the nervous system, which, as every one knows, have been the subject of much skilful polemic for many years. There is, no doubt, in this matter opportunity for perfectly legitimate difference of opinion on the part of well-trained and entirely conscientious physicians, a fact too little recognized by the courts. This difference of opinion is continually being exaggerated, and in the eyes of the laity and the legal fraternity is no doubt assuming a significance which does not properly belong to it. Among physicians expert in the interpretation of nervous symptoms, a much greater unanimity of opinion prevails regarding this class of cases than appears on the surface. The encouragement given by the courts to men who are not experts, and whose opinion would count for little in matters relating to the nervous system within their profession, is a standing reproach. This the courts naturally enough encourage and physicians too often yield to the temptation to appear as so called "experts," in matters regarding which they have no adequate knowledge. The remedy for this must come from the doctors and not from the lawyers. Taking, however, only those whose studies warrant them in being classed as experts in the nervous affections following accident, we find still manifold differences of opinion, and yet a growing tendency to virtual agreement. We are, for example, of the opinion that "simulation" as a weapon of defence has practically ceased to exist. Even those whose inclination it is to minimize the psychical effects of injury are careful to avoid this term, and every one who thinks is, no doubt, coming to see that simulation in the popular sense is relatively seldom met with, and when met is readily detected. The more subtle questions of auto-suggestion and general cultivation of a neurotic state in a semi-involuntary fashion, for the gaining of ulterior ends, is quite a different matter, and one which clearly requires the closest psychological analysis. This is of fundamental social as well as medical importance, and a matter which the combined efforts of the courts and the doctors will, no doubt, be long in settling.

In the meantime, from a purely practical point of view, what is the best solution of each individual case? Naturally, no general rule is to be laid down, but we think that settlement out of court meets the requirements in the great majority of cases in the most satisfactory possible way to all concerned, and for the following reasons: In the first place, from the patient's point of view, here is a common history: A person is injured through carelessness on the part of the employees of some corporation. The injury, so far as physical signs go, is trivial; the nervous excitement incident to the accident is considerable. The extent of the injury is enhanced in the patient's mind by the solicitous lawyer, and still more so by the frequent medical examinations which immediately supervene. Unique experiences of various sorts and an inevitable sense of importance are thrust upon the patient, which evidently do not conduce to spontaneous recovery. At the end of this preliminary period, his nervous system, quite regardless of the original accident, must naturally be in a state of turmoil. This, combined with the primary shock of the accident, makes the situation sufficiently deplorable. Unfortunately this is merely the beginning. From one to two years must elapse before the dreaded trial takes place; in the meantime the patient's chief employment is introspection of the most concentrated sort, fostered and encouraged by lawyers and friends. Finally, after more examinations the trial begins, and is it to be wondered at that the patient impresses the jury as a very sick person, in whom there is not a shadow of simulation, and that damages in proportion are awarded? This is the usual course of justice. To the patient, frequently, the money return is absolutely no compensation for the suffering already endured, and to come, and the pitiable part of it is that so much of it might have been avoided. To say that these patients all get well after the award of damages is nowadays a mere confession of ignorance. To the patient, then, the method of trial, with all it entails of anxiety and unusual experiences, is absolutely detrimental.

How is it for the corporation concerned? In our opinion equally detrimental, but in quite a different way. A condition which perhaps was at first trivial has become serious, and the corporation is paying damages not only for the accident, but also for the disorders engendered through the whole period antedating the trial. Experience amply shows that juries are not going to discriminate between the immediate and remote results of the accident; their decision is reached through a consideration of all the facts up to the time of trial, as it should be. Under these circumstances it is clear that the awards are often out of proportion to the original injury for which suit is brought, and properly so, if we are to persist in our present methods of delayed settlements. The defendant often pays for a condition which its own determination to "fight the case" has done everything to cultivate and encourage. In this way an injustice is done not only to the plaintiff, by fostering morbid tendencies, but also to the defendant, by exacting damages which are often absurdly in excess of the injury originally sustained.

Clearly a way out of this difficulty is through early settlements, an end which various more or less unworthy motives frequently tend to thwart. If the defendants, corporations and the like would get an unbiased opinion from trustworthy men, and then act conscientiously and quickly on the basis of such advice, we are confident that the plaintiffs would be spared much unnecessary annoyance and suffering, and the defendants would find much less occasion for making unreasonable inroads on their treasuries.

This is one point of view; there are, of course, others, and many occasions no doubt arise in which a long legal controversy is the only solution. The fact, however, remains, that the majority of cases might be settled out of court, to the decided advantage of all concerned. To accomplish this end, the defendants must be more liberal and the plaintiff less exacting, a state of things which we believe by no means unattainable, provided only the highest degree of conscientiousness on the part of physicians be brought to bear upon each individual case.

THE DREYFUS TRIAL *VS.* MEDICAL PROGRESS.

Now that the first excitement and indignation at the result of the Rennes court-martial has in a measure subsided, we are, no doubt, in a position to look more calmly upon all the facts of the case, particularly as these relate to our attitude towards that large portion of the population of France to which we are bound by common ties of scientific interest. Quite apart from our judgment as to the miscarriage of justice of which the civilized world has just been the witness should be our feeling toward the higher intellectual bonds which must remain unbroken. The threatened boycott of the Fair of 1900 has apparently in some quarters gone even further, and led to the extraordinary spectacle of men seriously suggesting that the scientific gatherings about to take place in France be deprived of representation from other countries. This is beyond measure trivial, and shows an entirely hysterical attitude, which will no doubt yield to common sense long before the various associations are expected to meet.

Both the *British Medical Journal* and the *Lancet* comment feelingly and forcibly on the situation. The *Lancet*, under the heading "The Rennes Verdict," arraigns the military party in France in no doubtful tone, and then goes on to say: "Meantime, let us not too hopelessly identify all France with the five judges of Rennes. We have been led to make these remarks in view of the storm of indignation that has arisen because of the condemnation of Captain Dreyfus by the court martial and the threats — indeed more than threats — that have been made to boycott the Paris Exhibition of 1900. The case, too, is not without its medical bearings, for a member of the profession has written to the press to suggest that practitioners, as a protest, should not send their patients to France this year. Moreover it must be remembered that the Thirteenth International Congress of Medicine, an International Congress on Medical Ethics, and other meetings of interest to medical men are to be held in Paris next year."

The *British Medical Journal* is evidently much less tentative than this, when it says, after speaking of the delirium into which the verdict has thrown the people of England:

"Edmund Burke long ago warned us against the folly of drawing an indictment against a whole nation. Apparently, however, a good many of us at present see neither injustice nor absurdity in condemning and punishing France for the crimes of some of the least worthy of her sons. The proposal to boycott the Paris Exhibition is bad enough, but what is to be said of the suggestion that English physicians should no longer send their patients to France? Unless we are to adopt the view that medical men send their patients abroad for the benefit of the foreign hotel keepers, the punishment intended for France will fall on the ailing Britons whose health might have been improved by its climate. A still more foolish proposal is that the medical profession of this country should boycott the congresses which are to be held in Paris in 1900. In plain terms, this means that because certain Frenchmen have done wrong we are to punish the world at large by hindering, as far as it lies in our power to do so, the progress of medical science."

In his recent presidential address before the British Association for the Advancement of Science Prof. Michael Foster, speaking of international co-operation in science, made the following pertinent remarks:

"Perhaps, however, not the least notable fact of international co-operation in science is the proposal which has been made within the last two years that the leading academies of the world should, by representatives, meet at intervals to discuss questions in which the learned of all lands are interested. A month hence a preliminary meeting of this kind will be held at Wiesbaden; and it is at least probable that the closing year of the nineteenth century, in which science has played so great a part, may at Paris during the great World's Fair — which every friend not of science only, but of humanity, trusts may not be put aside or even injured through any untoward event, and which promises to be an occasion not of pleasurable sight-seeing only, but also, by its many international congresses, of international communing in the search for truth — witness the first select Witenagemote of the science of the world.

"I make no apology for having thus touched on international co operation. I should have been wanting had I not done so on the memorable occasion of this meeting. A hundred years ago two great nations were grappling with each other in a fierce struggle which had lasted, with pauses, for many years and was to last for many years to come; war was on every lip and in almost every heart. To-day this meeting has by a common wish been so arranged that those two nations should, in the persons of their men of science, draw as near together as they can, with nothing but the narrow streak of the Channel between them, in order that they may take counsel together on matters in which they have one interest and a common hope. May we not look upon this brotherly meeting as one of many signs that science, though she works in a silent manner and in ways unseen by many, is steadily making for peace?"

This is clearly the broader point of view, and the one which must inevitably prevail.

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PROGRESS IN MILITARY SANITATION.

Under a recent circular, Department of California, a commissioned medical officer is to be detailed in orders to act as medical inspector of the regimental and recruit camps on the Presidio Reservation, with authority to exercise general supervision over the medical and sanitary conditions in these camps, *and to see that the provisions of this order are properly executed.* This circular marks a most important step in the progress of military sanitation, as it clothes the sanitary inspector with actual authority in his own department, places upon him the responsibility for the existence of unsanitary conditions and elevates him from the anomalous condition of mere medical adviser, without powers to accomplish the changes which may appear to him to be advisable. The action above noted will undoubtedly arouse the hostility of line officers, since even the colonel of a regiment may, under its provisions, become subordinate to the sanitary inspector of lesser rank. Hence, it is to be hoped that the medical officer selected to fill the latter position will, in addition to his excellent professional qualifications, possess that rare tact and moderation, combined with firmness, which will alone prevent undue opposition to the execution of this order. The system itself is on trial and a sanitary inspector of ill-balanced personality may do much to set back the progress of military hygiene for the immediate future.

The lack of executive authority has been a cause for bitter complaint on the part of sanitary officers and, with indifferent or unfriendly commanding officers, has done much to destroy interest and ambition and to render inspection a purely perfunctory performance. The order above noted places an undivided responsibility upon the sanitary officer and officially recognizes the value of his important duties. We feel that the Army Medical Department and the medical profession at large are entitled to congratulations for this hard-won victory.

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MEDICAL NOTES.

The Congress of the Institute of Public Health, England. — The Congress was held September 21st, under the presidency of the Marquis of Lorne, at Blackpool. A feature of the Health Exhibition, in connection with this Congress, was a special exhibition and discussion on smoke abatement.

A Hospital Burned. — The hospital of St. Vincent de Paul at Norfolk, Virginia, has recently been almost completely destroyed by fire. Several inmates were killed, and it is said the property loss will reach the sum of $200,000, only partially covered by insurance. The loss is the greater because the hospital was regarded as one of the best equipped in the South.

A Gift to Jefferson Medical College. — It is reported that Dr. J. Ackerman Coles, of Newark, N. J., has offered several works of art to the Jefferson Medical College of Philadelphia, the most notable being a bust of Harvey, done by the sculptor Horatio Stone, at Rome, in 1869. Several other pieces of sculpture are also presented, all having belonged to the late Dr. Abraham Coles.

Quarantine against Tuberculosis. — It is reported that the Board of Health of California is proposing to establish a quarantine against all persons afflicted with tuberculosis, and the isolation of persons suffering from the disease. Certain precautions are, no doubt, advisable, but the strict enforcement of such a regulation is neither possible nor desirable, and the danger of infection does not warrant it.

A Case of Leprosy Originating in England. —Dr. J. Ross McMahon, writing in the *Lancet* for September 16th, reports a case of leprosy, which to all appearances had its origin in England. "The patient asserts that he has never left Britain, that he contracted the leprosy in England, and that he beheld in himself the first leper he ever wittingly saw." The source of the infection, however, is not clear, but the author suspects it may have been contracted from sheets in a bed at a third-rate hotel, in which a leprous woman is known to have slept.

Congress of Italian Alienists. — The tenth congress of Italian alienists will be held in Naples from October 10th to 14th, under the presidency of Professor Tamburini. The following are the subjects proposed for discussion: "Practical Methods of Individual Psychological Investigations in Asylums and Clinics;" "The Light which Has Been, and May Be, Thrown by Anatomical Data on Normal and Pathological Psychology;" "Psychiatry and the Study of the Individual and His Activity in Social Relations;" "Intoxications and Infections in the Pathogenesis of Mental Diseases and Neuropathies."

Medical Qualifications in Germany. — The Statistical Office has just published returns relative to medical qualifications in Germany, which show, according to the *Lancet*, that 1,314 candidates were qualified in 1898. Of this number 20 were foreigners, including eight Russians, four Swiss, three Dutchmen, two South Americans, one Englishman, one Mexican, and one African. The total duration of medical study varied considerably with different candidates: 936 studied for nine semesters, 168 for 10 semesters, and 211 for 11 semesters and upwards.

An Effort at Prophylaxis. — According to the *Journal of the American Medical Association*, a movement has been started among Philadelphia women, the aim of which is to wage war on disease, and its prevention by practical rules of hygiene. A meeting has been held, organization effected and a charter applied for. The organization will be known as the "Woman's Sanitary League of Pennsylvania." Its purpose is the advancement of sanitary science, the promotion of public health and good government, and the forming of country and local auxiliaries to extend the beneficent work. It is stated that the action of the St. Louis Board of Health in requiring the disinfection of all such materials as second-hand books and clothing is the precedent with which the committee presents its plea to the Philadelphia authorities. The subject of schools and school children, expectoration, and the summer diseases of childhood will all come in for their share of consideration.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, September 27, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 71, scarlet fever 23, measles 2, typhoid fever 31.

Vaccination in Schools. — With the opening of the schools the question of vaccinating the pupils has again come up, as is usual at this time of the year. Teachers are instructed by the Board of Health to look carefully after the pupils to see if they have been vaccinated. While the instructions this year are the same as heretofore, they are somewhat stricter, owing to the recent prevalence of small-pox, although there are now said to be no cases in the city. Such precautionary measures are certainly the best guarantee of public health.

NEW YORK.

Medical Aid at the Dewey Celebration. — The President of the City Board of Health has placed the entire resources of his department at the command of the authorities in charge of the Dewey reception, and every precaution will be taken for the rendering of prompt medical or surgical aid in case of need on the days of the celebration.

A Death from Yellow Fever. — Among the passengers of the transport *Buford*, which arrived from Cuba on September 18th, were a number of discharged soldiers of the First U. S. Infantry. One of them, a private named Oswald, who was slightly ill, was detained at quarantine under observation, and on the 21st was found to be suffering from yellow fever of the most severe type. He died of the disease on the following day.

Sanitariums for Tuberculosis. — At a regular meeting of the State Board of Health which was held at the New York Quarantine Station on September 22d a resolution was adopted for the establishment by municipalities of sanitariums for the care of tuberculous patients, and of securing legislative action on the subject.

Death from an Electric Current. — A young clerk in an establishment in Brooklyn was instantly killed recently in turning on the current in an ordinary incandescent electric light, such as is now in such general use. The right side of his body was badly burned, and it is supposed that a heavily charged wire had in some way crossed the feed wire of the lamp.

Christian Science and the Law. — One of the principal papers at the annual meeting and shore dinner of the Westchester County Medical Society, which was held on Long Island Sound near New Rochelle, on September 19th, was read by W. A. Purrington, Esq., formerly counsel to the Medical Society of the County of New York, on the subject, "Christian Science before the Law." In the discussion following the paper the practitioners of this sect were severely criticized.

Bequests to a Hospital and Orphan Asylum. — By the will of the late E. Ray Thompson, of Troy, who was recently drowned at Etretat, France, $5,000 each is bequeathed to the Child's Hospital at Albany, and the Troy Orphan Asylum.

Damages for an Elevator Accident. — In view of the comparative frequency of elevator accidents the following case is of considerable interest: A passenger elevator of the Bauland Company in Brooklyn, owing to a piece of bunting becoming entangled in its machinery, was caught in the elevator shaft at a point between the second and third floors of the building. After the engineer in charge had made several attempts to remove the obstruction, the ropes which controlled the action of the elevator were slackened by his direction, while he was making an attempt to disentangle the bunting. The rope controlling the governing mechanism of the car was thrown from a pulley, and the car fell to the bottom of the shaft, although the force of the fall was lessened to some extent by the safety cut-off. A young woman, twenty-four years old, who was a passenger and was injured by the accident, recovered judgment against the company, on the verdict of a jury, for $11,000. An affirmation of the judgment on defendant's appeal was unanimously directed by the Second Appellate Division of the Supreme Court. Justice Woodward, giving the opinion, held that in the circumstances the company was bound to use the very highest degree of care and skill, and that the evidence was sufficient to warrant the jury in finding that the defendant was guilty of negligence.

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ARMY NOTES.

A Course of Lectures on Medico-Military Subjects. — Major L. A. LaGarde, surgeon United States Army, now stationed at the Soldiers' Home, Washington, D.C., will deliver a course of lectures on medico-military subjects at the New York University and Bellevue Hospital Medical College during the coming winter. This addition to the curriculum, which it is expected will be permanent, includes not only military surgery but also the methods used for the selection of the recruit, the organization of field hospitals, military hygiene and first aid and the transportation of the wounded.

A Handbook for Soldiers. — In consequence of the excellent results obtained at Santiago through the knowledge possessed by the soldiers of the principles of antisepsis and first aid to the injured, a small handbook on this subject, couched in the most simple language, is to be issued to troops. It is understood that the first issue, comprising fifteen thousand copies, will be largely distributed among the company and non-commissioned officers.

Battalion Medical Chest for Small Commands. — To meet the needs of small detached commands a small battalion medical chest has been devised, the present regimental chests, five in number, being unnecessarily large and elaborate. The new chest is about two and one-half feet long and about one and one-half feet square at the ends. Medicines are carried in square, japanned tins which fit snugly, without partitions, in a square at the bottom of the box. They are held in place by a tray having a compartment for non-extendable articles. The remainder of the space, two-thirds the contents of the box, is used for dressings or such articles as the exigencies of the service appear to require. There are but two partitions in the entire chest and the space so saved is utilized to great advantage. The chest carries medicines sufficient for 400 men for ninety days and dressings ample for a possible casualty list of about 25 per cent. of the command. The weight is slight and the chest may be readily carried by one or two coolie bearers. The instruments are carried on the persons of the medical officer and his orderly.

Reports from Transport Surgeons. — Circular 20, Department of California, prescribes that transport surgeons and medical officers in charge of transports will report upon arrival to the chief surgeon of the department. They are to submit a nominal list of each man of the hospital corps under their charge — stating his conduct, efficiency and availability for transport service, state the amount of medical supplies on hand and the amount required. A report must also be submitted showing the number of cases treated *en route*, with results and general character of the disease and injuries observed. This will be supplemented by such observations as medical officers may have to make on the practical workings of the transport service; the quantity and quality of supplies; treatment of the sick; defects observed and improvements suggested. Requisitions are to be made out for supplies to last during the round trip between San Francisco and Manila.

Sanitary Precautions. — Circular 19, Department of California, constitutes a medical officer and a major of the line a regimental sanitary board for the proper sanitary condition of the regimental camp. It prohibits the sale of food or drink by civilians on the reservation and enjoins upon the quartermaster's department the duty of caring for all latrines and disposing of garbage.

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Miscellany.

PRECAUTIONS AGAINST THE INTRODUCTION OF PLAGUE INTO ENGLAND.

The proximity of cases of plague to England in Portugal has led to extraordinary precautions against its possible introduction into that country. The *British Medical Journal*, commenting on the subject, rightly say that cleanliness is, after all has been said, the most effective means to prevent the spread of filth diseases. We quote in part a vigorous statement of the present situation:

"In 1897 plague broke out in Bombay and the Local Government Board at once began to take precautionary measures against the contingency of its being carried into England, and have since continued to do so. A systematic inspection was since made not only of the larger English ports, their faults seen to and remedied, but all the small ports along the entire English coast have been inspected. Medical officers of health, harbor masters, etc., have all been put even more on the alert, and so well had the previous work of the Local Government Board been done, that in only two or three cases were their inspectors dissatisfied with the existing order of affairs. Small scattered seaports have been consolidated under a joint Board of Medical Supervision. The attention of local authorities has been specially drawn to ships' rats, as infection from plague has been traced to these vermin. The Local Government Board has arranged to have bacteriological examinations of the blood and purulent discharges from bubonic patients made in suspected cases. Further, not only are vessels from Portuguese ports being watched and inspected on arrival, but Spanish vessels will be looked after as well. Portugal is geographically a part of Spain, and it is scarcely to be hoped that with plague in Portugal her equally insanitary neighbor will remain immune. Old-fashioned quarantine is distinctly opposed to the true principles of preventive medicine, and has over and over again proved its uselessness. To take only one recent instance, in the European outbreak of 1892 cholera arrived at the Eastern border of the Caspian, which it might have been supposed would have been a good barrier; the most rigorous quarantine that has ever been imposed was put in force, ruining thousands and paralyzing trade; with what result? Cholera got over to the western border of the Caspian in ten days. Spain, Italy and Portugal uphold quarantine because, being poor, lazy and neglectful, they impose quarantine rather than take the trouble to clean and keep their filthy ports in order."

RECORD OF MORTALITY

For the Week ending Saturday, September 16, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1124	514	15.13	10.53	9.09	1.44	2.25
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	364	132	15.39	12 42	6.21	3.24	3.51
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	222	81	17.55	10.35	7.20	4.50	3.15
Baltimore	506,389	179	68	21.84	8.76	13.36	3.36	3.92
Cincinnati	405,000	94	—	10.60	7.42	3.18	1.06	4.24
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	—	—	—	—	—	—	—
Washington	277,000	—	—	—	—	—	—	—
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	64	22	21.84	15.60	12.48	4.68	—
Nashville	87,754	41	21	24.40	12.20	19.52	2.44	2.44
Charleston	65,165	33	12	18.18	9 09	9.09	6.06	—
Worcester	108,240	28	12	17.85	3.57	14.28	—	—
Fall River	95,919	48	29	31.20	12.48	29.12	2 08	—
Cambridge	89,724	25	8	20.00	12.00	12.00	—	—
Lowell	88,641	35	22	40.32	1.15	34.56	—	—
Lynn	66,703	23	8	26.10	8.70	17.40	8.70	—
New Bedford	66,340	17	9	35.28	11.76	29.40	5.88	—
Somerville	66,101	14	6	21.42	7.14	21.42	—	—
Lawrence	57,263	22	11	24.90	4.15	20.75	—	—
Springfield	56,501	20	11	45.00	5.00	25.00	—	15.00
Holyoke	43,424	16	10	37.50	6.25	6.25	12.50	—
Brockton	37,278	9	1	11.11	33.33	—	11.11	—
Salem	36,883	11	6	36.36	27.27	36.36	—	—
Malden	34,613	11	7	—	—	—	—	—
Chelsea	33,468	4	2	50.00	—	25.00	25.00	—
Haverhill	32,022	11	3	18.18	18.18	18.18	—	—
Gloucester	30,589	6	4	16.66	16.66	—	16.66	—
Newton	29,716	10	4	10.00	10.00	10.00	—	—
Fitchburg	29,438	5	2	20.00	20.00	20.00	—	—
Taunton	28,167	5	3	20.00	—	20.00	—	—
Everett	25,338	5	2	—	—	—	—	—
Quincy	23,549	8	3	60.60	—	25.00	12.50	25.50
Pittsfield	22,643	3	—	—	—	—	—	—
Waltham	22,296	3	—	—	66.66	—	—	—
North Adams	20,971	2	2	50.00	—	50.00	—	—
Chicopee	17,842	10	5	20.00	10.00	20.00	—	—
Medford	16,511	2	1	50.00	—	50.00	—	—
Newburyport	14,915	—	—	—	—	—	—	—
Melrose	14,032	5	—	20.00	—	—	20.00	—

Deaths reported 2,486; under five years of age 1,025; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 441, consumption 266, acute lung diseases 184, diarrheal diseases 263, diphtheria and croup 62, typhoid fever 61, whooping-cough 25, cerebro-spinal meningitis 10, scarlet fever 9, measles 7, erysipelas 4.

From whooping-cough New York 10, Philadelphia 5, Boston 3, Providence, Charleston, Nashville, Cambridge, Lowell, Lawrence and Holyoke 1 each. From cerebro-spinal meningitis New

York 3, Cincinnati and Holyoke 2 each, Philadelphia, Boston and Springfield 1 each. From scarlet fever New York 4, Philadelphia and Boston 2 each, Lowell 1. From measles New York 6, Providence 1. From erysipelas New York 2 Philadelphia and Providence 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending September 9th, the death-rate was 25.2. Deaths reported 5,511; acute diseases of the respiratory organs (London) 170, diarrhea 1,290, measles 73, diphtheria 68, whooping-cough 68, fever 61, scarlet fever 27, small-pox (Hull) 1.

The death-rates ranged from 18.1 in Leeds to 43.8 in Burnley; Birmingham 28.9, Bradford 23.8, Croydon 18.4, Derby 26.5, Gateshead 21.5, Hull 27.2, Liverpool 32.2, London 22.2, Manchester 32.8, Newcastle-on-Tyne 35.8, Nottingham 27.4, Portsmouth 21.3, Sunderland 31.9, West Ham 22.2.

METEOROLOGICAL RECORD

For the week ending September 16th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...10	30.30	58	65	51	58	84	71	N.	E.	7	5	C.	C.	
M..11	30.04	58	63	53	71	92	82	E.	S.E.	12	18	O.	R.	
T...12	29.70	60	63	56	92	92	92	N.	S.	11	12	O.	C.	.24
W..13	29.84	64	74	54	63	66	64	W.	N.W.	8	15	C.	C.	
T...14	30.14	54	63	46	60	58	59	W.	W.	9	12	C.	C.	
F...15	30.33	54	65	44	57	40	48	W.	N.W.	9	6	C.	C.	
S...16	30.46	52	60	45	63	71	67	N.	S.	5	8	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H. hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING SEPTEMBER 23, 1899.

M. H. **CRAWFORD**, surgeon, detached from the Marine Recruiting Rendezvous, Chicago, Ill., and ordered to the Marine Recruiting Rendezvous, New York, N. Y.

E. S. **BOGERT**, passed assistant surgeon, detached from the Marine Recruiting Rendezvous, New York, N. Y., and ordered home and to wait orders; directed to be ready for orders to sea duty.

J. M. **MOORE**, passed assistant surgeon, detached from the "Vermont" and to the Marine Recruiting Rendezvous, Chicago, Ill.

M. S. **ELLIOTT**, assistant surgeon, detached from the Marine Recruiting Rendezvous, New York, N. Y., and ordered to the "Vermont."

W. M. **GARTON**, assistant surgeon, detached from the "Franklin" and ordered to the Washington Navy Yard.

P. A. **LOVERING**, surgeon, ordered to duty at the Recruiting Rendezvous, Buffalo, N. Y.

W. F. **ARNOLD**, passed assistant surgeon, ordered to the Pensacola Navy Yard.

H. N. T. **HARRIS**, passed assistant surgeon, detached from the Pensacola Navy Yard and ordered home and to wait orders.

J. S. **CHAFFEE**, assistant surgeon, resignation accepted.

J. R. **TRYON**, medical director, detached from duty as general inspector of naval hospitals and ordered home and to wait orders.

E. C. **PARKER**, assistant surgeon, detached from the "Pensacola" and ordered to the "Hartford."

J. R. **TRYON**, medical director, retired September 24th.

L. L. **VON WEDEKIND**, passed assistant surgeon, granted sick leave for three months when discharged from Naval Hospital, Mare Island, Cal.

GEORGE H. BARBER, passed assistant surgeon, detached from the "Monongahela," on arrival at Newport, and ordered to duty at Naval Academy, September 30th.

GEORGE ROTHGANGER, passed assistant surgeon, ordered to duty at the U. S. Naval Hospital, New York.

M. V. **STONE**, assistant surgeon, detached from the "Brutus" and ordered to the Asiatic Station.

L. B. **BALDWIN**, surgeon, placed on the retired list.

R. S. **BLAKEMAN**, assistant surgeon, ordered to the Naval Hospital, Newport, R. I., on completion of preliminary examination for promotion.

J. J. **SNYDER**, assistant surgeon, detached from the Naval Hospital, Newport, R. I., and ordered home to be ready for further orders.

P. A. **LOVERING**, surgeon, detached from the Recruiting Rendezvous. Buffalo, N. Y., and ordered to proceed home as directed in orders of 12th.

E. H. **MARSTELLER**, detached from the Recruiting Rendezvous, Buffalo, N. Y., and ordered to duty on the "Richmond."

G. P. **LUMSDEN**, surgeon, detached from the "Richmond" and ordered to the Recruiting Rendezvous, Buffalo, N. Y.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING SEPTEMBER 21, 1899.

CARTER, H. R., surgeon. To proceed to Key West, Fla., for special temporary duty. September 1, 1899. To proceed from Key West, Fla., to New Orleans, La., and assume charge of service matters. September 11, 1889.

MAGRUDER, G. M., surgeon. To proceed to New Orleans, La., for special temporary duty. September 4, 1899.

PERRY, T. B., passed assistant surgeon. Relieved from duty at San Francisco, Cal., and directed to proceed to Stapleton, N. Y., and report to the commanding officer for duty and assignment to quarters. September 11, 1899.

EAGER, J. M., passed assistant surgeon. To proceed to Saginaw, Mich., as inspector. September 12, 1899.

ROSENAU, M. J., passed assistant surgeon. Detailed as temporary quarantine officer at Havana, Cuba. September 13, 1899.

NYDEGGER, J. A., passed assistant surgeon. Relieved from duty at Marine Hospital, New Orleans, La., and directed to report to Surgeon **MAGRUDER** for special temporary duty. September 11, 1899.

BLUE, RUPERT, passed assistant surgeon. Granted leave of absence for one month and eight days from October 6, 1899. September 14, 1899.

MCMULLEN, J., assistant surgeon. To proceed to Memphis, Tenn., for special temporary duty. September 13, 1899.

VON EZDORF, R. H., assistant surgeon. Relieved from duty at Hampton, Va., and directed to rejoin station at New Orleans, La. September 11, 1899.

ADAMS, F. B., acting assistant surgeon. Granted leave of absence for ten days. September 11, 1899.

BANKS, C. E., surgeon. Granted leave of absence for one day. September 15, 1899.

PECKHAM, C. T., surgeon. To proceed to Eagle Pass and Laredo, Tex., as inspector. September 20, 1899.

MCINTOSH, W. P., surgeon. To proceed immediately to Meridian, Miss., and report by wire to Surgeon H. R. **CARTER** at New Orleans for special temporary duty. September 18, 1898.

WERTENBAKER, C. P., passed assistant surgeon. Leave of absence extended sixteen days on account of sickness. September 20, 1899.

FRICKS, L. D., assistant surgeon. Directed to assume temporary charge of the Service at Key West, Fla , relieving Assistant Surgeon **MCADAM**. September 20, 1899.

MCADAM, W. R., assistant surgeon. Relieved temporarily from the hospital at Key West and detailed for special duty in connection with the yellow-fever epidemic at Key West. September 19, 1899.

HALLETT, E. B., acting assistant surgeon. Granted leave of absence for one day. September 16, 1899.

DAVIS, H. E., hospital steward. Upon the arrival of Steward **WARHANIK**, to rejoin station at Boston, Mass. September 18, 1899.

WARHANIK, C. T., hospital steward. Relieved from duty at Chicago, Ill., and directed to proceed immediately to Baltimore, Md., for temporary duty and assignment to quarters. September 18, 1896.

APPOINTMENT.

WOOLGAR, W. J. W., of Ohio, to be acting assistant surgeon for duty at Cleveland, O. September 8, 1899.

SOCIETY NOTICE.

MASSACHUSETTS MEDICO-LEGAL SOCIETY. — The fall meeting will be held at the Medical Library, 19 Boylston Place, Boston, on Wednesday, October 4th, at 12 M.

The following papers will be read. Herbert Parker, Esq.: "Some Notes from Old Trial Calendars."

Dr. Jay Perkins: "Medical Testimony on Insanity as an Excuse for Crime."

Prof. Charles Harrington: "Food Poisons and Metallic Irritants; Resemblances and Differences Observed."

Members of the medical profession are cordially invited.

JULIAN A. MEAD, M.D., *Secretary.*

Original Articles.

THE TREATMENT OF CEREBRAL TUMORS.[1]

BY PHILIP COOMBS KNAPP, A.M., M.D., BOSTON,
Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System, Boston City Hospital.

The frequency with which cases of cerebral tumor occur is still a matter of some question. Out of 114,802 cases admitted to the Boston City Hospital in the last twenty years the diagnosis of cerebral tumor was made 82 times; while in 276,573 cases treated in the out-patient department in the same period (of whom 8,511 were treated in the department for nervous diseases) the diagnosis was made in only 24 cases. At this hospital, of course, cases of acute disease predominate, but, nevertheless, these figures are very much below those given by Starr,[2] who found the diagnosis of brain tumor made in 80 out of 16,361 cases, or by Bramwell,[3] who found the diagnosis made in 82 out of 10,512 cases. On the other hand, if we turn to the autopsy records, where all slight and curable affections are of course excluded, the frequency seems much greater. A new growth was found in 73 out of 3,650 autopsies at the Boston City Hospital and in 305 out of 26,030 collected autopsies, a trifle over one per cent., as the following table shows:

TABLE I.

BRAIN TUMORS FOUND AT AUTOPSIES.

Boston City Hospital	73	in	3,650
Beadle's Insane Asylum[2]	45	in	4,000
Presbyterian Hospital, New York[2]	7	in	745
New York Hospital[2]	30	in	2,970
Beck[2]	50	in	6,170
Seydel[4]	100	in	8,488
Total	305	in	26,030

The cures, real and alleged, accomplished by surgical interference in such cases and the emphasis laid upon the tendency, without surgical interference, for the patient to grow worse and die after a period of protracted suffering have rendered any consideration of medical treatment uninteresting and almost superfluous. Nevertheless medical treatment has its place. Although most cases which present sufficient symptoms to warrant the diagnosis do grow steadily worse, some cases lead a fairly comfortable existence for a number of years and others cease wholly to suffer except from some residual symptoms, such as postneuritic atrophy. In such cases it may be that the growth has become encapsulated and calcareous, as we sometimes see at the autopsy. We not infrequently find cases at the autopsy in which a tumor of considerable size has caused during life no symptoms, as in six out of 40 cases which I reported some years ago.[5] How frequently, with definite symptoms of a new growth, patients lead a comfortable existence or cease to suffer it would not be easy to say, but most neurologists can recall several such cases in their own experience. Bramwell[6] has recently given the statistics in his own personal experience in 122 cases. Of these, 76 resulted fatally; 11 were apparently cured; 11 greatly relieved; 13 remained *in statu quo*, and the result in 11 cases was unknown. Four of the cases which were apparently cured and one of those which was greatly relieved were non-syphilitic cases, and Bramwell suggests that these were cases of distended ventricle and not of tumor. Be that as it may, cases presenting all the symptoms of tumor may live with comparatively slight discomfort for a period, as in a case under my own observation, of fourteen and a half years, or as, in a case reported by Seguin,[7] of over eighteen years. Furthermore, nine cases out of ten are not amenable to surgical treatment except as a palliative measure for the relief of pain, so that, unless we are ready to do nothing at all to help the patient, some medical treatment becomes necessary.

That the symptoms due to syphilitic growths may wholly disappear after the exhibition of antisyphilitic remedies is so often impressed upon us that we are sometimes led to give too favorable a prognosis in all cases of cerebral syphilis. The symptoms may also be considerably ameliorated by such remedies, not only in tubercle of the brain, which, pathologically, has a certain kinship with gumma, but even in glioma and other growths. This fact is recognized by many trustworthy observers; the reason is still obscure. The lesson, however, is obvious, that whether syphilis be suspected or not, it is worth while to try the effect of large doses of iodide of potassium and of mercury, pushing the doses of each to the limit of toleration. In cases of suspected tubercle cod-liver oil, arsenic and iodide of iron may also be of benefit, but rather as adjuvants to mercury and the iodide of potassium than as substitutes for them.

The length of time that these remedies should be given depends upon the behavior of the patient under treatment. So long as steady improvement is observed the treatment should be continued, gradually diminishing the amount of the dose or occasionally omitting the drugs for a time if the condition warrant it. In cases where there is no noticeable gain the question how soon to abandon the hope of benefit from drugs and resort to operation becomes important. Horsley sets six weeks as the limit in cases of suspected gumma and two months in cases of suspected tubercle, and these limits should be regarded as extreme. At the end of a month, if there be no improvement, and sooner if the patient be rapidly growing worse, operation should be considered. Even in cases that are apparently progressing favorably we must bear in mind the possibility of a sudden change for the worse, — the onset of convulsions or coma with a fatal termination, — be guarded in our prognosis and be ready for prompt surgical interference.

When an operation is contraindicated or is rejected by the patient, considerable may be done in the way of palliative treatment. Convulsions may often be benefited by the bromides and a regimen like that of epilepsy. Headache may be wholly relieved, or at least made tolerable, by the various coal-tar derivatives, which are often well borne. One of my patients took nearly 20,000 grains of phenacetine in a year without bad results and with considerable relief from the headache, and another took about the same amount of antipyrin in the same time. In a third case, however, very marked cyanosis followed the use of a few doses of some proprietary headache powder, so that such remedies should not be given without careful supervision.

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[1] Read before the Section of Neurology of the American Medical Association at Denver, June, 1898, and before the Surgical Section of the Suffolk District Medical Society, November 3, 1898.

[2] British Medical Journal, October 16, 1897.

[3] Edinburgh Medical Journal, June, 1894.

[4] Verhandlungen d. deut. Gesellsch. f. Chir., 1892.

[5] Pathology, Diagnosis and Treatment of Intracranial Growths, 1891.

[6] Brain, xxii, 1, Spring, 1899.

[7] Journal of Nervous and Mental Diseases, April 1887.

I need not speak of other indications for symptomatic or palliative treatment. As I have already said, medical treatment is too important to be ignored. It affords more hope of relief than is often believed, and by its aid the patient may have a comfortable existence for several years or even a cessation of all his symptoms.

I do not mean, however, to slight the fact that in many cases, in spite of our best efforts, the patient steadily grows worse until death ends his sufferings. It is the rule in the majority of cases that present sufficient symptoms to warrant the diagnosis. Therefore Godlee's famous operation in 1884, followed by Horsley's brilliant successes, aroused the widest interest in the new treatment of cerebral tumor, foreshadowed by Wernicke in 1881 — extirpation by surgical means. The earliest operations were almost wholly English and American, but later the zeal for operating spread to other countries, so that cases have been recorded all over the world. I have for the third time [8] collected the reported cases — a task which has become so great that it is doubtful whether any one in the future will undertake to do more than add a few additional cases to these. To the 72 cases collected in 1891 I have added 442 others — a number sufficient to warrant fairly definite conclusions. At the last meeting of the British Medical Association, Ferrier [9] reported statistics based upon 38 cases operated upon at the National Hospital for the Paralyzed and Epileptic in London. These would give a grand total of 552 cases, but as a few of Ferrier's cases have probably already been reported and considered in my collection before I received his paper, this total is somewhat too great. Some of the other cases, notably those mentioned at the same meeting by Beevor and Waterhouse,[10] may also have been reported previously. Ferrier's cases I have considered by themselves. On the other hand, various articles have proved inaccessible, so that the total number of reported cases must now probably considerably exceed 600.

The benefits of such operative interference seem to be still somewhat in dispute. H. C. Wood[11] stands at one extreme when he states that "cerebral surgery as practised by various surgeons has been very valuable to neurology by affording early post-mortems in cases which otherwise might after some months have drifted away from medical watching." Starr's [12] hope still triumphs over experience when he says that "I cannot but believe that the operation for tumor of the brain will be more widely performed in the future, that cases will be operated upon earlier in the disease as our knowledge of diagnosis increases, and that the day will come when as little fear will be felt in opening the cranial cavity as is at present felt in the opening of the abdomen. And I believe that the statistics at present available, which would seem to indicate that but three per cent. of brain tumors can be successfully removed, will be materially changed within the next ten years." Chipault,[13] however, stands at the extreme of optimism when he states that "in the very near future every intracranial tumor will be considered, when the diagnosis is made, as warranting surgical treatment, and, taking into account deaths from the operation whose number will certainly be reduced by the methodical and prudent technique we have indicated, this treatment will cure by a radical intervention seven per cent., and, by palliative intervention, which may be repeated two or three times on the same patient, will relieve at least 60 per cent. of intracranial tumors.

Statistics are well recognized as fallacious, and Bruns,[14] regarding Starr's percentages as too favorable, argues that it is wiser to draw our conclusions as to the indications for and prognosis of surgical treatment, and as to the general results from a carefully selected series of cases than from the whole mass of collected cases, and Oppenheim [15] emphasizes the criticism which I raised eight years ago in regard to the percentages of recovery, that many cases are reported too soon for us to determine what the real result is, and that others are reported too imperfectly for us to draw definite conclusions. In a personal note Mr. Horsley has made another criticism on the collected statistics that in many cases the operation is not done early and that the risks are increased by trying to do the whole operation in one sitting, instead of in two stages, as he has repeatedly advised. It is, however, a difficult matter to determine the principle on which a selection of cases should be made. To select only cases reported by a few well-known men would make an invidious distinction, and, as the tables will show, it might not be much more satisfactory, for well-known men have failed; to select only the cases which were not reported until time enough had elapsed for definite conclusions to be drawn would be misleading, since all the fatal and only a part of the successful cases would thus be included. Fortunately the recent article by Ferrier affords a standard of selected cases for comparison. These 38 cases under the observation of the leading neurologists of London and operated upon under the most favorable conditions of skill and technique by Horsley or Ballance may fairly be compared with the aggregate of cases collected.

In considering the question of surgical interference it may be well first to consider once more what percentage of cases may fairly be considered as operable, and then, from the statistics, to draw conclusions as to the chances first of diagnostic and second of operative success. Under the latter heading we must consider also the chances of success according to the situation and according to the nature of the growth. In the event of a failure in diagnosis we must also consider whether harm or good has been done by operation.

The percentage of operable cases has not been materially altered by more recent statistics. In 1891 I gave the percentage as in the neighborhood of eight. Further statistics show that the proportion remains about the same. In 73 autopsies at the Boston City Hospital, part of which were reported in 1891, it seemed possible to remove the growth in twenty, but in only six cases were there symptoms enough to warrant a local diagnosis and in only three cases was an operation actually performed. Out of 1,745 autopsies collected in the following table, an operation was thought possible in 152 — 8.7 per cent. —

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[8] Boston Medical and Surgical Journal, April, 1890. Pathology, Diagnosis and Treatment of Intracranial Growths, 1891.

[9] British Medical Journal, October 1, 1898.

[10] British Medical Journal, August 6, 1898.

[11] Wood and Fitz: Practice of Medicine, p. 528.

[12] Dercum: Text-book of Nervous Diseases, p. 505.

[13] Travaux de Neurologie Chirurgicale, p. 167.

[14] Die Geschwülste des Nervensystems, p. 216.

[15] Die Geschwülste des Gehirns, Nothnagel's Spec. Path. u. Ther., ix, p. 239.

but these totals are not wholly to be depended upon, as many of the cases undoubtedly figure in more than one of the collections.

TABLE II.

Operable Cases (Autopsies).

Boston City Hospital	6 in 75
Hale White[16]	10 in 100
Mills and Lloyd[16]	10 in 100
Starr (children)[16]	16 in 300
Starr (adults)[16]	21 in 3 0
Bernhardt[16]	53 in 485
Gray[16]	10 in 102
Dana[16]	5 in 29
Beck[16]	8 in 50
Bruns[16]	3 in 33
Seydel[17]	3 in 100
Oppenheim[18]	1 in 23
Bramwell[19]	6 in 50
Total	152 in 1,715

If we judge simply by clinical cases without autopsies, the percentages are larger, because the chances of error are admitted. In 60 cases of which I have clinical records a local diagnosis admitting an operation was made in 18, but an operation was actually advised in only 9 and performed in 5. Starr[16] regarded 18 cases in 80 operable, 15 of which were actually operated upon. Bruns[20] made a probable local diagnosis in 61 out of 76 cases, but a definite diagnosis in only 51. Of these 15 were operable and 7 were actually operated on. Bramwell,[21] on the other hand, found only 5 cases in 123 operable. Thus 56 cases in 339 seemed operable — 16.5 per cent.

TABLE III.

Operable Cases (Clinical).

Knapp	18 in 60
Starr	18 in 80
Bruns	15 in 76
Bramwell	5 in 123
Total	56 in 339

This reference to the chances of error in diagnosis leads naturally to a consideration of the question of the chances of diagnostic success. It is not enough to ask, when we are estimating the chances of success in the individual case, what are the chances of recovery if the tumor be removed. We must also take into account the chances of error in the diagnosis and the possibility of removing the tumor if the diagnosis be correct. Of course here the personal equation is a large factor; much depends upon the skill of the neurologist who is called upon for a diagnosis, but a study of the collected cases will show that even the best neurologists are not free from error.

Under the general heading of failure to remove a tumor, we must consider three classes of cases: (1) Where the tumor existed at the point operated on, but where from its extent, from the fact that it could not be distinguished from the surrounding healthy brain substance, or from the patient's condition, it could not be removed; (2) the cases where there was a mistake in diagnosis, the tumor not being at the point operated on or there being no tumor at all, and (3) the cases where the focal symptoms were indefinite and an operation was undertaken merely as a palliative measure. It is not easy to classify the individual case, especially if the original report be not at hand, so that my tables must be regarded as only approximately correct. When a tumor is not found at the operation it is more soothing to say that the operation was done merely to relieve pressure, but some of these operations have been so clearly palliative (a correct diagnosis of an inoperable tumor being made), that strictly speaking they should be disregarded if we consider only *bona fide* attempts to remove a tumor.

If we study the reported cases we will find that the increase in our diagnostic skill which Starr hopes has not as yet followed. Godlee's operation came fourteen years after the publication of the researches of Fritsch and Hitzig in 1870 — the first contribution to the study of the localization of functions in the cerebral cortex which made the surgical treatment of cerebral tumors possible. In 1884 our knowledge of the functions of the cerebral cortex enabled us to localize the centres for motion, smell, sight, hearing and speech. In spite of the study that in the period of fifteen years since 1884 has been made of cerebral functions and the symptomatology of cerebral tumors, we have gained only a more exact and detailed knowledge of the areas we knew in 1884; the functions of the other parts of the cortex are still obscure. The results of operations show no increase in diagnostic skill. In the cases I collected in 1891 there were 26 failures to remove the tumor in 72 operations (36.1 per cent.), of which 15 (20.8 per cent.) were due to errors in diagnosis. In removals attempted since there have been 198 failures (44.7 per cent.), of which 96 (21.7 per cent.) at least were due to errors in diagnosis. Of course a certain number of incompetent men have attempted to make a diagnosis, especially as the interest in the operation has extended, but not all the failures can be ascribed to incompetence. Even in the 38 cases reported by Ferrier, we find 18 failures to remove (47.3 per cent.), but he

TABLE IV.

Removals and Failures to Remove Tumors, 1884–1891 and 1891–1899.

Removals and failures, 1884–1891.					Removals and failures, 1891–1899.					Ferrier's cases.		
	Cases.	Per c.	Total failures.			Cases.	Per c.	Total failures.				
			Cases.	Per c.				Cases.	Per c.		Cases.	Per c.
Removed	46	63.8			Removed	244	55.3					
Impossible to remove. Failure	4	5.5			Impossible to remove. Failure	41	9.2					
Growth not found. Failure	15	20.8	26	36.1	Growth not found. Failure	96	21.7	198	44.7	Removed	20	52.7
Palliative. Failure	7	9.7			Palliative. Failure	61	13.8			Failed	18	44.3
Total	72					442					38	

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[16] British Med. Journal, October 16, 1897.
[17] Verhand. d. deut. Gesellsch. f. Chir., 1892.
[18] Die Geschwülste des Gehirns, p. 246.
[19] Edinburgh Med. Jour., June, 1894
[20] Die Geschwülste des Nervensystems, p. 220.
[21] British Med. Jour., August 6, 1898.

does not state in how many of these cases the tumor was found and could not be removed, or how many operations were simply palliative (Table IV).

It may fairly be said, however, that increased skill in surgical technique has given a diminished mortality. Thirty-one of the 72 cases operated on between 1884 and 1891 died as a direct result of the operation, a mortality of 43 per cent., 148 out of 442 subsequent cases in which the result is known proved directly fatal, a mortality of 33.4 per cent. This gain seems due to the improved technique rather than to any more careful selection of cases, of which I can find no indication in the collected reports. Ferrier's cases strengthen this belief, for in these, where the technique must be regarded as the best attainable, only seven died as a direct result of the operation — an immediate mortality of only 18 per cent. (Table V).

Coming now to the question of operation in a case of brain tumor, let us once again consider what the chances are of benefiting the patient. I have collected 514 cases, excluding the 38 reported by Ferrier, a very large proportion of those on record. Of these I have classified 68 (13.2 per cent.) as palliative operations, some of which may more properly be regarded, perhaps, as cases of mistaken diagnosis. In 45 cases (8.7 or 10 per cent., according as we include or exclude these palliative operations from the total number) the growth existed at the point of operation but it could not be removed. In 111 cases (21.5 or 24.8 per cent.) it was not found. In 290 cases (56.4 or 65 per cent.) it was found and removed, but in at least 57 of these cases (11 or 12.7 per cent.) the growth was of such a character that it could not be wholly removed. We see, therefore, that in only about one-half of the cases operated upon has it been possible, with our present knowledge and skill in technique, wholly to remove the growth. Assuming that 16 per cent. of all cases seem operable we can therefore hope to find and wholly to remove the growth in about 8 per cent., the same proportion that autopsy records show as operable.

TABLE V.

RESULT OF OPERATIONS.

Cases 1884-1891.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Total.
Removed	21	4	2	3	..	1	15	46
Impossible to remove. .	..	1	..	..	..	..	3	4
Growth not found . .	..	..	..	2	..	..	13	15
Palliative	..	6	..	1	..	..	..	7
Total	21	11	2	6	0	1	31	72
Cases 1891-1899:								
Removed	49	68	6	34	6	14	67	244
Impossible to remove. .	..	5	..	4	4	2	26	41
Growth not found . .	4	10	..	27	9	1	45	96
Palliative	..	29	..	14	4	4	10	61
Total	53	112	6	79	23	21	148	442
All cases, 1884-1899, except Ferrier's:								
Removed	70	72	8	37	6	15	82	290
Impossible to remove. .	..	6	..	4	4	2	29	45
Growth not found . .	4	10	..	29	9	2	58	111
Palliative	..	35	..	15	4	4	10	68
Total	74	123	8	85	23	23	179	514
Ferrier's cases:								
Removed	6	..	..	8	..	3	3	20
Failed to remove. . .	..	3	..	8	..	3	4	18
Total	6	3	..	16	..	6	7	38

Granting, however, that the growth be found at the point selected for operation, and that it can be wholly removed, what are the chances for the patient's recovery? In the statistics previously collected by me in 1890 and 1891, it seemed at that time that the chief question to determine was the fatality of the operation itself. Many of the cases were reported very soon after the operation and little was said as to the later history. Nevertheless at that time I showed that the percentage of success (30 cases in 46, nearly 66 per cent.) was too favorable because, in some instances, the growth had recurred later with fatal consequences. Later statistics emphasize this danger. Out of 209 removals 82 died as the direct result of the operation, 37 died subsequently with symptoms of the recurrence of the growth, 8 others showed symptoms of recurrence but were still living. In most of these last 45 cases, however, the operation caused temporary relief. In 15 cases there is no record of the result and in 6 cases there was no improvement. In 142 cases the patient recovered from the operation, either completely or with considerable improvement. In 72 cases, at least, although some of the more distressing symptoms were relieved and the fatal progress of the disease was checked, the recovery was incomplete. Blindness from post-neuritic atrophy, epilepsy, paresis or complete spastic hemiplegia, remained as the result of the destruction caused by the tumor or by the surgical measures for its removal. Even in the 70 cases that are classed as recovered, the records are often too imperfect to enable us to say definitely whether the recovery was complete. A very few cases have been examined some years after the operation and have been found to be practically well. Such proof of complete recovery is exceptional and we must regard the alleged cures with much suspicion. Ferrier, in his statistics last year, wisely refrained from giving too definite statements as to recovery. In 16 cases in which a tumor was removed from the cerebrum 2 died, 6 lived from one to ten months, and 6 lived over a year.[22] In 4 cases in which a tumor was removed from the cerebellum 1 died, 1 lived from one to ten months, and 1 lived over a year. In the other cases the result was unknown. Viewing these statistics in the most favorable light, we are forced to conclude that, while we may expect to be able wholly to re-

TABLE VI.

PARTIAL REMOVALS (INCLUDED IN TABLES V AND VIII).

Location.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Total.
Prefrontal							1	1
Central		11	5	14	2	1	12	45
Parietal		1					1	2
Temporal				3		1	1	5
Cerebellar		1		1			2	4
Total		13	5	18	2	2	17	57

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[22] These I have classed as recovered for the sake of comparison

move the growth in about one-half of the cases which seem operable (that is, in about 8 per cent. of all the cases) over one-fourth of these cases will die as the direct result of the operation and less than one-fourth will make a complete recovery. Of the rest a portion will succumb later to a recurrence of the growth, the rest will linger for a few years blind, epileptic, or paralyzed — a result far below Chipault's sanguine predictions; a result perhaps not much better than may be attained by purely medical treatment.

Shall we then cease to operate in cases of brain tumor? It would be going too far to say yes. There is the hope, faint though it be, that the operation may result in a complete cure. Failing that, it may give relief from pain, prevent blindness and prolong life, even if the patient remain epileptic or paralyzed. Even if the growth be partly removed, or if it recur, it may be operated on two, three, four, or even eight times with some relief.[28] Even temporary relief justifies the operation, and many patients would prefer life and comfort with paralysis to suffering and speedy death. It is still permissible to operate in cases of brain tumor, but we must be guarded in our predictions and we must not lead our patients to expect too much from the operation.

TABLE VII.[25]

FORTY-FIVE CASES WHERE IT WAS IMPOSSIBLE TO REMOVE THE TUMOR (INCLUDED IN TABLE V).

	Improved.	Improved. Died later.	Not improved.	Not stated.	Died.	Cause of failure.
Previously collected. Pathology, diagnosis and treatment of intracranial growths	1				3	
Aldibert. Revue de Chir., p. 158, 1895			1			
Beck. In Auvray, op. cit., p. 360					1	Impossible to remove.
“ “ “ 361					1	Multiple.
3 “ “ “ 359		1				Collapse.
Bruns. Op. cit., p. 226				1		Infiltrated.
Carson. Annals of Surgery, xxviii, 328					1	Impossible to remove.
Chipault. Gaz. des Hôpitaux, lxxi, 557, 1898	1					Hemorrhage.
Chipault and A. Chipault. Rev. Neurol., April 15, 1893					1	Indistinguishable, infiltrating.
Clegg. Liverpool Medical-Chirurgical Journal, xii, 244, 1892 . . .	1					Collapse.
Collins. Transactions of the American Neurological Association, 1895 .				1		
Conroy. New York Medical Journal, ii, 537, 1893					1	Too large.
Dinkler. Neurol. Centralblatt, xvi, 611, 1897					1	Too deep-seated.
Eskridge. Journal of American Medical Association, September 30, 1893.					1	
Eskridge. Denver Medical Times, June, 1896					1	Too large.
Fisher. New York Medical Journal, April 16, 1898.					1	Too large.
Gordinier. American Journal of Medical Sciences, May, 1899 . . .					1	Indistinguishable, collapse.
Gray. Op. cit., second edition, p. 336					4	Impossible.
Hermanides. Operative behandeling van hersengezwellen, 1894	1					Too deep-seated.
Hermanides. “ “ “ “ “	1					Impossible.
King. Chicago Clinical Review, April, 1897					1	Infiltrating.
Knapp. Unpublished					1	Infiltrating, collapse.
Krause. New York Medical Journal, July 30, 1898			1			Too deep-seated.
Lanphear. Journal of the American Medical Association, April 27, 1895 .					1	Hemorrhage.
2 Lovett and Bullard. Unpublished			1			Too deep-seated, hemorrhage.
McBurney and Starr. American Journal of Medical Sciences, April, 1893.					1	Too large.
Nicholson. British Medical Journal, ii, 1367, 1893		1				Too large.
Rose. Medical Press and Circular, i, 175, 1894	1					Impossible.
Rossolimo. Arch. f. Psych., xxix, 528, 1897					1	Hemorrhage.
Schultze. Deutsche Zeitschr. f. Nervenheilk., ix, 217, 1896					1	Indistinguishable.
Sonnenburg. Berlin. klin. Wochenschr., p. 939, 1894					1	Collapse.
Starr. Medical Record, i, 145, 1896					1	Infiltrating, hemorrhage.
Starr. British Medical Journal, October 16, 1897			1			Hemorrhage.
Stieglitz. Transactions of the American Neurological Association, 1895 .					1	Impossible.
Stieglitz. “ “ “ “ “ “ .					1	Hemorrhage.
Taylor. Transactions of the Ophthalmic Society, London, xiv, 105, 1894 .		1				Infiltrating.
Taylor. “ “ “ “ “ “ “ .		1				Infiltrating.
Taylor and Elliot. Boston Medical and Surgical Journal, 1896					1	
Winkler. Bijdrage tot de Hersen Chirurgie					1	Infiltrating, collapse.

Where the growth cannot be wholly removed the prognosis, of course, is worse. In most of these cases the growth is of an infiltrating character, either glioma or sarcoma. Out of 57 such cases 17 died as the result of the operation, and 18 died later from a recurrence of the growth. In 5 cases more the growth recurred after a period of temporary improvement, in 2 there was no improvement, in 2 the result is not stated, and in the other 13 the condition was reported as improved (Table VI).

If the growth cannot be removed at all, it may be due to several causes. Either the patient's condition becomes so bad that the operation cannot be continued, in which case, of course, a fatal result is very probable, or the growth is so extensive that it cannot be removed, or is so infiltrated that it can hardly be distinguished from the normal brain, or else so small, or of a consistency so like that of the normal brain that it cannot be detected. In all these cases the risks are obviously very much greater. Out of 45 cases 29 died as a direct result of the operation, 4 were not benefited, 4 improved for a time and then died, in 2 the result was not stated, and only 6 were reported as relieved, the operation being practically a palliative one (Table VII).

(To be continued.)

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[25] In the preparation of these tables I have been obliged to rely in part upon the collections made by Chipault (Chirurgie Opératoire du Système Nerveux and Travaux de Neurologie Chirurgicale) and Broca and Maubrac (Traité de Chirurgie Cérébrale.) Many other articles were accessible only in abstracts in the Neurologisches Centralblatt, Revue Neurologique, etc. In this way errors may have crept in and desirable data may have been omitted. I am indebted to various of my colleagues for permission to include unpublished cases. In cases marked with a + the growth was not entirely removed. The number preceding some of the references indicates that several operations were done on the case; in such cases the result is based on the final operation.

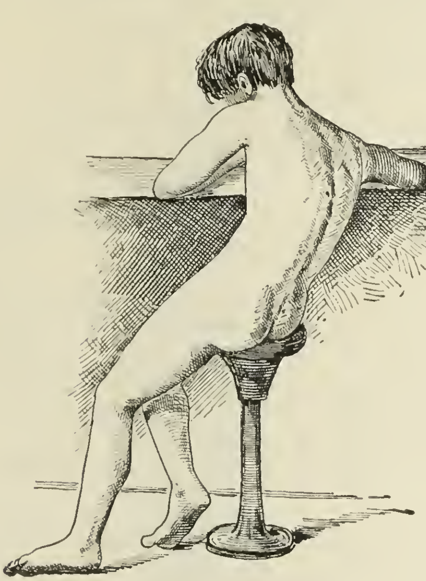
[28] Thirty-five cases in Table VIII were operated on more than once.

SCHOOL SEATS.[1]

BY E. H. BRADFORD, M.D., AND J. S. STONE, M.D., BOSTON.

As it is often asserted that school chairs furnish one of the influential factors in the development of lateral curvature, a careful study of the proper form of school chair deserves and has received much attention. The results, however, are neither as satisfactory nor conclusive as is desirable, as the seats supplied in our schools are not always suitable.

The movement for reform in school furniture may be said to have begun with the publication in 1841 by Barnard, of Hartford, of his classic work on school architecture. Preceding this publication there had been, however, considerable discussion of the subject. About ten years earlier in Boston Dr. John C. Warren and Dr. Alcott, and in New York Mr. William J. Adams, had begun to advocate the use of sloping desks of proper heights, the separation of the seats from the desks behind, and the use of individual seats with backs.

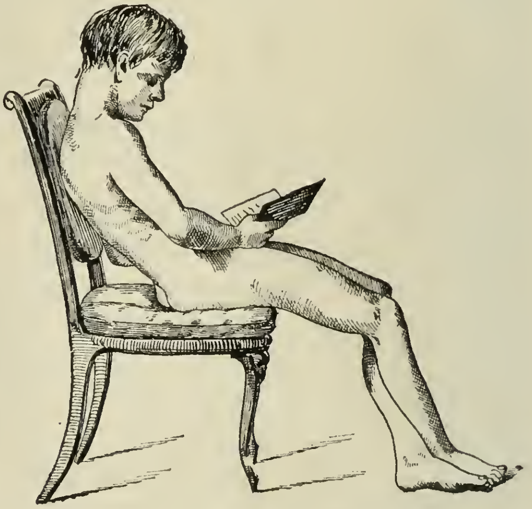


Faulty attitude in sitting.

The use of seat backs began about fifty or sixty years ago. Then followed the introduction of separate seats and later, at about 1850, the separate desks and chairs were first used. Attention had also been directed to the horizontal "distance" between the back of the desk and the front of the seat. Although a "minus" distance in which the desk overhangs the seat was advocated by some, yet Barnard and Alcott believed in a zero distance, which was, however, a step in advance as compared with the former "plus" distance of several inches.

Barnard was the first to make definite measurements of children of different ages and to devise from this a scale for the height of the seat and desk. In 1863 Fahrner, of Zurich, published the first European scale. There have since been published in this country the Whitcomb and the Bobrick scales, while in Europe the Frankfort scale, published in 1885, and the scales of the Prague and Vienna Commissions, published in 1892, are the most important. Much attention has been given to the various scales according to which fixed furniture is constructed and by which adjustable furniture is fitted. Being based on different series of measurements of children of different nationalities and classes there have been considerable differences in the results. Moreover, different standards are taken as the basis from which seat height and desk height of adjustable furniture are computed, as, for example, in one scale knee height and in another total height is taken as the basis.

While the scales have served a very useful purpose in bringing about more accurate fitting, according to averages, they cannot, of course, compare for accuracy in special cases with individual measurements made, for instance, in the school measuring chair, devised by Dr. Hartwell, in which at one sitting all the required measurements are easily read off. In the use of individual measurements, particularly in weak children, and in children above or below the average of those of the same age, and in careful attention to the seating of such individuals, much good may be done, although at present the universal adoption of complete individual measurements can scarcely be expected.



Attitude commonly assumed by weak-backed children.

At the same time that so much was being done in the development of various scales there were introduced many different kinds of adjustable furniture, both desks and chairs.

The problems of desk construction are, according to Cohn, (1) to secure such a "difference" in height between the desk surface and seat that the elbow with the arm hanging naturally just reaches the desk, which brings the book at the proper distance from the eye; (2) to secure such a horizontal "distance" between the seat and the desk that the body and head may not be inclined forward too far in order that the eyes may be near enough to the desk; (3) to have a proper slope to the desk surface. For purposes of reading the ideal slope is 45, because then the eyes can be directed downward without fatigue and without bending the head forward. Such a slope, however, is not practicable for writing, and therefore, as a compromise, a slope of from one in six to one in ten has usually been adopted.

Modern construction in all adjustable desks meets the requirements of proper height. The problem is simple because there is no need of automatic change. The need for automatic change by the scholar in the horizontal distance between the desk and seat has been met in two ways, first, by movable desk tops and second, by movable seats. Of the movable desk tops there were two types. In one the surface is divided transversely so that one part may move upon the other, usually the posterior part folding over on top of the anterior, as in the desk devised by Parow in 1865.

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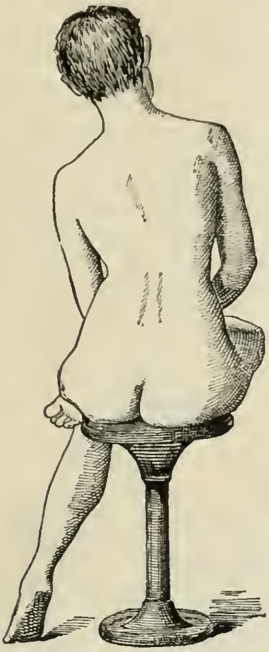
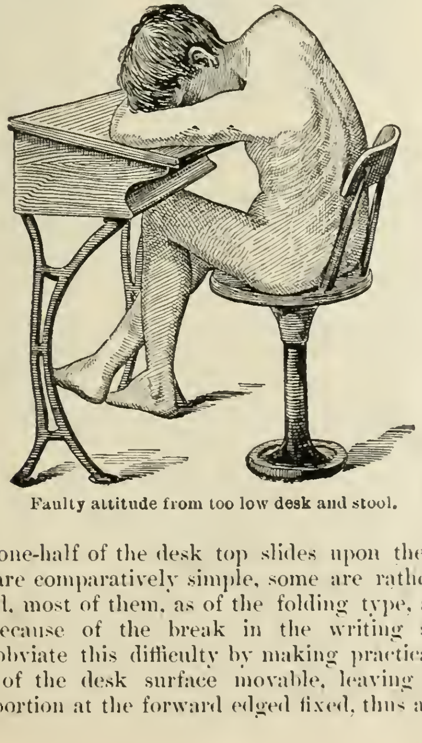
[1] Read by title at the annual meeting of the American Orthopedic Association, 1899.



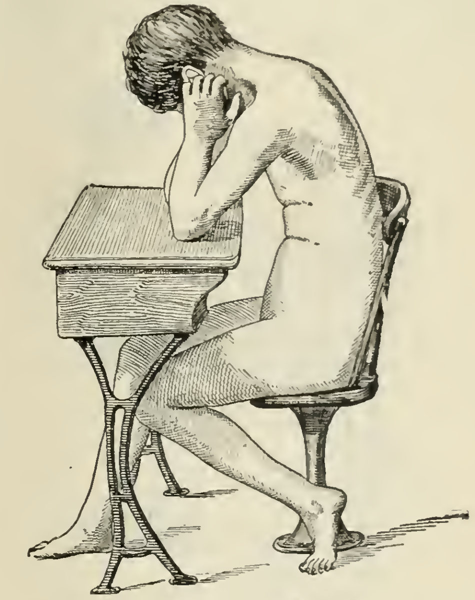
Faulty attitude.

There are also a great variety of mechanisms by which one-half of the desk top slides upon the other. Some are comparatively simple, some are rather complicated, most of them, as of the folding type, are not used because of the break in the writing surface. Some obviate this difficulty by making practically the whole of the desk surface movable, leaving only a small portion at the forward edged fixed, thus approximating the type in which the whole desk top moves. So much weight has been attached to the importance of a movable desk top by Lorenz and Cohn, among others, that much attention has been paid to perfecting the mechanisms by which the desk top as a whole is moved.



Faulty attitude from too low desk and stool.

Some of the folding and some of the sliding desks meet the third requirements of desk slope by making a change at the same time that they change the distance, so that for reading there is a positive distance with an increased slope, while for writing there is a negative distance and a decreased slope. The Simplex desk of Schenck deserves particular attention. In it the "distance," the "difference," and the slope are all altered automatically by a very simple mechanism. By a simple mechanism also in the modern Chandler desk the slope and the distance may be changed together or independently as the scholar wishes. A certain amount of instruction and care is, however, necessary for the intelligent use of a desk of this sort, which is not necessary for those of the simplest construction.



Faulty attitude from too low desk and stool.

Of course in the difference in height and the horizontal distance between the seat and the desk the chair must also be considered. Thus many adjustable seats have been made at the same time that the desks were improved. It is now universally recognized, in regard to the chair, that the height of the seat should equal the length of the leg from the sole of the foot to the under surface of the thigh when the feet are placed squarely upon the floor and the knee is bent to a right angle. It is generally agreed that the seat surface should slope slightly from front to back so as to counteract the tendency to slide forward, but not slope so much as materially to tilt the pelvis if the child sits sidewise in the seat. The length and breadth of the seat should correspond roughly to the dimensions of the thighs. A seat of insufficient depth can cause no particular harm. A seat of too great breadth allows, while one of too great depth compels, bad postures. The last requirement is, as stated by Hartwell, that "the seat should be provided with a back that shall top. Thus this chair gives what no other chair has ever given, the ability to move forward into an upright and well-supported position for writing and the ability to slide away from the desk a few inches into a well-supported reclining position for reading.

The back of this chair, which is at slightly more than a right angle with the seat, carries two transverse supports, a lumbar and a dorsal. Each is adjustable for height. The former can be moved forward and back as well.

These adjustments in the back are a great gain over the ordinary chair back. Another marked improvement is seen in the modern spring-back typewriter's chair, having a back support adjustable for height, and at an adjustable angle with the seat. The latter mechanism is in some ways more satisfactory than the back of the Miller chair, which, however, has the advantage of a forward and back adjustment of the lumbar support.

By combining the seat and castings of the Miller chair with the spring back and by replacing the two adjustable pads of the Miller chair and the single pad of the typewriter's chair with a combined dorsal and lumbar pad swinging like a mirror with the long arm uppermost, the advantages of each are secured. In such a combination chair there are secured four automatic changes, by far the most important that from the upright to the reclining position; second, that in the distance from the desk; third, that in the angle between the body and thighs, and, fourth, that in the back supports to conform to changes or individual variations in the curves of the spine.

There are other fixed adjustments, one of importance being that for seat height and others being for height and angle and strength of spring of back supports. In ordinary use all of these adjustments might not prove necessary, although those least simple are the ones in actual use in the very popular typewriter's chair.

In the combination proposed there are secured automatic changes in distance from the desk and in the position of the body as a whole. There are also possible automatic changes in the back supports. At the same time the lumbar spine always receives firm, the dorsal spine sufficient, support, no matter what the occupation of the scholar. The fact is recognized that improper attitudes result from fatigue and that fatigue must always follow any attitude, no matter how satisfactory in itself, which is long maintained without change.

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THE BOSTON DISPENSARY CLINIC IN MENTAL DISEASES.[1]

BY ARTHUR C. JELLY, M.D., BOSTON.

(Concluded from No. 13, p. 312.)

March 10, 1898. M. W., twenty-two years old, single, born in Boston. No occupation. Mother died at forty of consumption and dropsy. Father living, alcoholic, abandoned wife and children. Patient is said to have been a delicate child. She became deaf after scarlet fever when ten years old. Did not get beyond second class in grammar school. Noises in her ears have disturbed her much for a long time. She thinks her first nervousness was several years ago, when she had many vague fears and worries; for example, she hesitated to undress and go to bed for fear she might do herself some physical injury.

After losing her mother she feared she could never get on alone, and is sure all would have gone well if her mother had lived. She has a brother whom she rarely sees, and she lives with a distant relative who is evidently impatient with her. She tries to help about the house but her worries so absorb her attention that she cannot apply herself. Feels she never can be better. Yesterday felt she was a curse to the world. Has thought much of suicide and felt impelled strongly to drown herself but never made any attempt. Is sure she can never go to heaven anyway. Neglected her church-going because so hopeless. Wept freely as she talked about herself. Has enormous appetite and adequate digestion. Constipation obstinate. Catamenia regular and do not affect mental state.

March 17th, 24th, 31st. She showed at each visit less depression and more self-control, and it seems probable that if she had been under good management, she might have continued to improve. But she was not helped much by her relatives, and we learned subsequently that she tried to drown herself at South Boston, was prevented by a police officer and sent to an asylum.

A brief experience with such cases was enough to show that the conditions of life at home were often so unfavorable that improvement was prevented. It was impossible to obtain proper food in sufficient quantity; or undisturbed nights; or periods of rest in the daytime; or they lived alone; or their friends failed to give them encouragement when it was needed. It is hardly fair to expect a case of incipient melancholia to improve under such conditions.

It happens sometimes that after a most thorough examination one is unable to give an opinion upon the question whether a person is insane. I saw twice in December with Dr. C. A. Craigin a very interesting case of this sort whose mental symptoms followed the development of exophthalmic goitre. These doubtful cases appear in the wards of all the general hospitals and frequently cause much trouble before a decision can be reached as to where they should go.

Sometimes alarming mental symptoms appear suddenly, and an emergency arises which demands prompt measures to ensure the safety of the individual or of others. The attention of his associates may not have been called to anything unusual in his conduct, till the patient attempts suicide, or assaults a friend, or runs away from home, or refuses to accept advice from friends, or to submit to their control. Cases of this sort have been seen at their homes with the district physicians of the dispensary. Others have been brought to the clinic by friends. Two women in this condition have come alone.

Miss H., thirty years of age, born in Sweden, a domestic, was brought to us by Dr. A. S. Knight. Not been sleeping well for two weeks; not eaten as much as usual; not done her work properly. Two nights ago she went to the house of a friend, but slept none. Yesterday, without notice to the family that employed her, she went to a town in New Hampshire where a friend lives, but could not sleep well there. Has felt for a short time that everything was upset. Could not remember what her work was. The thoughts which keep her awake are about people at home, who have done wrong; she does not know who the people are;

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[1] Read before the Boston Society for Medical Improvement, March 13, 1899.

she was not connected in any way with the wrong done, but somehow she fears she may be blamed for their misdeeds. She has never heard anything of this sort said, but she has a feeling inside that makes her think so. Has abstained from eating, neither because she thought food would injure her, nor because she thought that by fasting she might atone for the wrong, but because she felt no desire for food. Has visited her friends less of late than formerly and neglected her religious duties, to which she formerly devoted considerable time.

Physical examination was negative, except that she appeared pale and thin. She was advised to go to the Boston Insane Hospital as a voluntary patient. She went immediately but remained only a few days. In this time, however, she lost almost entirely the morbid fears which had been the chief cause of her erratic conduct. For the next four weeks she continued to improve, did not show any evidence of mental disorder and then went to Sweden on a visit.

Miss M., a seamstress, twenty-seven years old, came to the dispensary alone in an agitated condition, because the people in the house from whom she got her tea had put poison in it, and she was suffering greatly in consequence. She was so distressed that I did not dare let her go away, but persuaded her to go to my office and wait for me there. In the meantime I found her sister, who took charge of her. But in the next twenty-four hours she moved three times because she was so suspicious of poisoning and so much afraid of causing trouble. She was undoubtedly suicidal. Considerable risk was run during the time that elapsed before her sisters were convinced that she needed hospital treatment.

Our experience has been convincing that some provision should be made for the treatment of mild and probably curable cases, either in a ward of some general hospital or in a small hospital especially set apart for this work. We believe that some of them (M. W. is an example) might be prevented from having a serious and prolonged attack of mental disease if put under treatment early. In this way considerable money could be saved.

Provision is needed, also, for the observation of certain doubtful cases and for the temporary care of emergency cases. But since these doubtful and emergency cases are often liable to become violent, destructive and noisy, it is obvious that harm would be done to the mild and curable cases if in their vicinity the noisy and violent were treated. Therefore, it is evident that some place should be provided for the latter; that is to say, Boston should have what is usually called a reception house.

This need has long been known to some of you. Attention was called to the subject last July by the announcement in the *Journal of Mental Science* of the retirement from active service of Dr. Frederick Norton Manning, who had held the position of Inspector-General of Insane in New South Wales for thirty years. About 1865 Dr. Manning was authorized to travel extensively and study the methods followed in various countries in the care of the insane. Upon his return, certain reforms were instituted, among which was the establishment of a reception house at Darlinghurst..

Dr. Manning refers to Belgium as a country which recognized early the need of having places for the reception of the insane. And I find that the law of June, 1850, directed that the public authorities should provide for the lodging and temporary care of the insane, either in a general hospital or in a hospital for insane or in some other suitable place; it distinctly prohibited keeping them in a prison or transporting them in company with prisoners or suspected criminals. Their detention in such provisional asylums was strictly limited to the time needed for rest on the journey or for necessary legal steps. Persons able to pay were to be charged the expenses incurred.

In France, Dr. Manning says, many of the insane reach the asylums through the police and are temporarily confined in jail. But in the Department of the Seine there is a complete establishment, called the Bureau of Admission, which is connected with the Asylum of St. Anne. There is a central administration building and two wings consisting of six separate buildings, intended for four patients each. One doctor has charge of each sex.

All the insane of Paris who pass through the hands of the public authorities are brought to this place from jails, hospitals or private residences, and after a short period of observation, are sent to the asylum best suited to their needs: if acute, to St. Anne's; if likely to be benefited by agricultural life, to Ville Everard or to Vanclose; if demented, idiotic or epileptic, to Bicetre or Salpêtrière. Such a reception house is for temporary residence, for diagnosis and for classification.

Of England, Dr. Manning wrote in 1868, the poorhouses of the various parishes are the only reception houses for the poor, and no provision is made for the rich.

In the *Lancet* of October, 1882, Dr. H. W. Gordon advised the establishment of a receiving house for the county and urged that all lunatics should first be sent to this institution. But apparently nothing of this sort was done, because the *Journal of Mental Science* of July, 1898, reports "that there is a rumor that the London County Council is considering the establishment of reception houses such as those conducted by Dr. Manning in New South Wales."

Dr. Manning's reports from 1868 to 1893 give full information about the character of the houses and the work done there. (I have not been able to get reports later than 1893.)

Urgent cases may be received upon the certificate of one physician, though nearly all cases come certified by two physicians. The ordinary length of stay is fourteen days; but in exceptional cases this may be lengthened or shortened under strict regulations.

In the report of 1880 he says: "It has been found desirable to admit to the reception houses numerous doubtful cases in which neither the magistrate nor the medical practitioners are satisfied of the existence of real insanity, and which would otherwise be remanded to jail for treatment. Cases should be selected judiciously so as not to throw open the door to habitual drunkards suffering from delirium tremens."

In the report of 1882 he says: "Patients under remand from magistracy, 227. Of these 153 were set at large, 61 certified as insane and sent to a hospital; four died. The work done has therefore been large and important. Scientific treatment can be applied at an early stage and so some cases prevented from passing into more advanced stages."

It appears, therefore, that there are three sorts of reception houses now in operation: (1) A ward connected with a general hospital; (2) a ward connected with a hospital for insane; and (3) a separate establishment. Of these the first seems the least desirable. In regard to the second it seems hardly probable that our people would take kindly to a system such as that at St. Anne's, where the physicians assign the patient to the hospital that seems best suited to his needs. The plan of separate houses, such as those of Dr. Manning, appears to afford many advantages over either of the other plans. And it is to be hoped that the earnest co-operation of all physicians in this neighborhood will soon lead to the establishment of a reception house worthy the city of Boston. In this endeavor, however, we must not lose sight of the equally important need of making suitable provision for treating mild cases in the early stages.

Clinical Department.

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On examination of the patient I found her to have a small vagina and an infantile uterus. The adnexa could not be palpated nor could the fundus of the uterus be felt. A tumor could be felt at the brim of the pelvis on the patient's right side, reaching upward almost to the level of the umbilicus. It was oval, somewhat irregular in form, and movable, but it could not be determined that the tumor moved separately from the uterus.

An operation was decided upon and was performed on March 6th. On opening the abdomen it was found that the right tube and ovary had been removed. As the patient's suffering had been so great the only promise of relief seemed to be in the removal of the other tube and ovary and the extirpation of the uterus together with the cervix.

After this operation was performed the mass still remained at the brim of the pelvis on the right side. It was retroperitoneal, somewhat lobulated and it seemed probable that it was a retroperitoneal lipoma. The possibility of a horse-shoe kidney was suggested. An incision was made through the peritoneum and fat and it became apparent that the tumor was a kidney. Being on the right side and the possibility of a horse-shoe kidney suggesting itself an examination of the left side was made and no kidney was felt. Inasmuch as the patient was in the Trendelenburg position and the examination was by no means easy it was thought wise to make a second examination of the left renal region. When this was done it was supposed that the kidney was palpated. I proceeded, therefore, to remove the mass at the brim of the pelvis, dissecting from left to right. I encountered and divided one ureter. As I proceeded with the enucleation of the kidney I found a second ureter implanted into its substance. It seemed probable, therefore, that my examination of the region of the kidney had been incorrect and I proceeded for the third time to palpate the region of the left kidney. I found that in the second examination the omentum had been carried upward with the hand and had so wrapped itself around the spleen that it had lead me to mistake the spleen surrounded by omentum for a kidney with perirenal fat. The question then arose as to how the operation could be successfully terminated. I could not make out that the kidney had a single pelvis, so it was not possible to ligate the proximal end of the divided ureter and trust to the discharge of urine through the right ureter. I also tried to see if it was possible to insert the end of the ureter into the pelvis of the kidney from which the right ureter was discharged, but I could not bring the pelvis on this side into view. An operation of this sort therefore was impossible. Inasmuch as at the time of the division of the ureter I had seized the distal end with a pair of hemostatic forceps, thus crushing it, it made the remaining portion of ureter so short that a lateral anastomosis seemed impossible. The proximal end of the divided ureter was also cut off so high up that it was impossible to implant it into the bladder. The only thing which remained for me to do was to make an end-to-end anastomosis. I proceeded to do this with very fine catgut and made a careful and accurate approximation. Fearing lest there might be leakage of urine followed by infection of the abdomen I utilized a flap from the anterior wall of the pelvis which had been partly formed by the removal of the uterus, and drawing this upward and backward sutured it to the brim of the pelvis. By this means the abdominal cavity was entirely closed off from the pelvis, and iodoform gauze was carried through the vagina and pelvis into the retroperitoneal opening made in the operation attempted upon the kidney.

The same afternoon a glass drainage tube was carried through the opening in the vaginal vault into the pelvis to facilitate drainage and permit the escape of any urine which might leak from the ureter. The patient endured the operation very well and remained perfectly dry, the urine passed by bladder being normal and free from blood.

On March 9th there was a little increased vaginal discharge and a suspicion of the presence of urine. A few days later the presence of urine in the vaginal discharge became unquestioned.

It is not necessary to give a further detailed history of the case. It will suffice for the purpose of the present paper to say that the patient for several days passed no urine whatever by vagina, but would pass a normal amount by bladder; again for a few days there would be more or less leakage, when it would stop entirely. The patient remained in the hospital until the 1st of May.

I heard from her last on the 20th of June. At that time she had gained eight pounds in weight, there was no leakage of urine by the vagina and the patient was in better health than she had been for years, considering herself quite well.

Of course, in a case of this sort it is impossible to demonstrate absolutely the success of an end-to-end anastomosis of a divided ureter. It might be said that the patient had but one pelvis to the kidney and all of the urine passed by the undivided ureter. It might further be said that the caliber of the ureter had been closed by contraction, and that a portion of the kidney which it drained had become atrophied, its function being taken up by that portion of the kidney drained by the right ureter. An attempt was made during the progress of the case to see whether on the days in which there was leakage of urine per vaginam the amount passed by bladder was less, and also whether on days when there was no leakage per vaginam the amount passed by bladder was greater. I was unable, however, to satisfy myself upon either of these points. Without being too dogmatic in my opinion, I think that it is fair to conclude that the case is one of successful end-to-end suture of a divided ureter. The evidence certainly is as strong as that given in describing other operations of ureteral anastomosis.

The method used to protect the abdominal cavity from possible infection by a flap of peritoneum taken from the anterior pelvic wall and united to the pelvic brim is, so far as I know, unique. The location of the horse-shoe kidney is also lower than that which is commonly found. It is not my intention to go extensively into the literature of this subject, since the publications which I wish to refer to subsequently summarize sufficiently what has been done in this direction. It may be of interest, however, to give a brief statement of the present status of operations upon the ureter.

Efforts to restore the integrity of the ureter when for any reason it has been completely divided have lead to the employment of two methods of anastomosis, one of which has been variously modified. Perhaps the best established procedure is that of lateral anastomosis, first proposed by Van Hook in 1893. By this method the distal end of the ureter is ligated and below the ligature a longitudinal slit is made into which the proximal portion is drawn and secured with sutures.

Experimental work upon animals by Van Hook and later by Bloodgood has been eminently successful, both as regards the integrity of the joint and the subsequent patency of the canal. The end-to-end anastomosis has been subjected to several modifications. Animal experiments have been surprisingly successful. Invagination of the proximal into the distal end after stretching the latter was practised by Poggi on dogs with marked success, but the experiments repeated by Tuffier and Bendinger were equally marked failures. Transverse end-to-end suture over a gum-elastic catheter was attempted by Gusserow and Pawlik without success. Oblique end suture has been done successfully on dogs by Bovee. No other animal experiments have been found recorded, but in addition to these on the human subject there has been done a simple end-to-end suture, invagination of the proximal into the distal end after slitting the latter, and invagination without slitting over a gum-elastic catheter. These methods have all been well illustrated in a recent article by Markoe and Wood. Fourteen cases of anastomosis by the above method have been recorded. An excellent summary of 12 of these, including one of his own, has been made by Bovee. A case of end-to-end invagination with lateral slit by Winslow and a case of simple invagination over a gum-elastic catheter by Markoe and Wood complete the list, so far as we can find after an independent search of the literature. Of the 14 previously reported cases three were by lateral anastomosis, 11 by end-to-end suture. Of the latter, one was by invagination over a catheter, two by invagination with a lateral slit, four by simple transverse suture, three by transverse suture over a catheter and one by oblique suture. As these cases have been so completely summarized recently by Bovee and Markoe and Wood, further notes seem an unnecessary repetition.

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Medical Progress.

REPORT ON PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

(Concluded from No. 13, p. [illegible].)

BLUE GLASSES IN THE DETECTION OF CUTANEOUS ERUPTIONS.

JULLIEN[1] extols the merits of blue-glass spectacles in distinguishing macular eruptions upon the skin. Broca in 1895 was the first to call attention to this aid to diagnosis, and Haas in 1895 reported that, wishing to utilize the principle of complementary colors in the detection of cutaneous eruptions, he had for several years used a monocular glass, so constructed that the object was viewed through water, colored blue. Jullien has made use of this method of examination for three years, using binocular colored glasses. He connected with a hospital for insane; and (3) a separate establishment. Of these the first seems the least desirable. In regard to the second it seems hardly probable that our people would take kindly to a system such as that at St. Anne's, where the physicians assign the patient to the hospital that seems best suited to his needs. The plan of separate houses, such as those of Dr. Manning, appears to afford many advantages over either of the other plans. And it is to be hoped that the earnest co-operation of all physicians in this neighborhood will soon lead to the establishment of a reception house worthy the city of Boston. In this endeavor, however, we must not lose sight of the equally important need of making suitable provision for treating mild cases in the early stages.

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Medical Progress.

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(Concluded from No. 13, p. 319.)

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JULLIEN[5] extols the merits of blue-glass spectacles in distinguishing macular eruptions upon the skin. Broca in 1893 was the first to call attention to this aid to diagnosis, and Haan in 1898 reported that, wishing to utilize the principle of complementary colors in the detection of cutaneous eruptions, he had for several years used a monocular glass, so constructed that the object was viewed through water, colored blue. Jullien has made use of this method of examination for three years, using binocular cobalt glasses. He considers it best to shun a very bright light, that of cloudy weather being preferable. The glass ought to be placed as near the eye as possible in order to avoid a diffusion of the rays, and to separate the eye from all outside rays. Broca claimed that by this means an eruption could be detected before it was visible to the naked eye, that the trace of an antecedent eruption could be determined, and that an aborted eruption could be seen. Jullien has found that the elements of a syphilitic roseola may be detected without doubt some time before they are distinguishable to the naked eye. The advantage of this is seen when it is necessary to establish the diagnosis or to begin treatment as early as possible. There is a considerable proportion of cases in which no symptoms are observed after the chancre, until perhaps several years have elapsed, when the ordinary late lesions may appear. Jullien surmises that in most of these instances an early roseola may be detected by means of blue glasses.

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[5] Annales de Derm. et de Syph, January, 1899.

An eruption may also be detected in this way some time after it has become invisible to the naked eye. The vascular system is still affected and the remains of the inflammatory infiltration are still left. These alterations cannot be perceived by the eye alone, but may be when aided by the blue glasses. These spots are apt to persist about the axilla, at the upper angles of the scapulæ or upon the sides of the thorax. Syphilides may thus be detected at the end of six months, and Jullien has often recognized them at the expiration of a year.

Slight scars also may be detected by this method which cannot be seen ordinarily, as there is the same optical difference between a cicatrix and the hyperemic skin. From a medico-legal point of view this method may be of considerable value.

BLASTOMYCETIC DERMATITIS.

Hyde, Hektoen and Bevan [6] report a case of this affection occurring in a man of fifty-seven, who was a day laborer by occupation and a resident of Chicago. He was a native of Holland, leaving that country when in his eighteenth year for the East Indies, where he served in the army. He returned to his own country and after eight or nine years he came to America. His mother, three sisters and one brother died of consumption.

The affection had begun about five years before with a small red spot on the right leg below the knee. This increased in size until it occupied almost the whole anterior surface of the leg, and appeared as a raw, bleeding surface, which finally healed, under treatment, with the exception of a small spot.

One and a half years before, the left thumb began to be affected in a way similar to the leg, and the affection extended until the dorsal surface of the left thumb and almost the whole dorsal surface of the left hand presented a reddish denuded patch of a verrucous appearance, and covered with a moist and sticky exudation. There was considerable pain, which radiated up to the elbow, and the fingers became partially flexed, the little finger permanently so. The palm was not affected.

Operative interference was discussed but was not resorted to, as under treatment with the iodide of potassium in daily doses of one hundred grains, the small sore on the leg healed and the patch on the hand was very much improved.

On microscopical examination of a piece of the tissue excised, it was found that a parasite was present of the order of the blastomyces. It was found in the tissues, and could also be demonstrated in pure cultures, the first appearance being that of a round body with double membrane, filled with a granular protoplasm, with and without nuclei. It could also be shown in the act of budding. There were numerous miliary abscesses in the epidermis, which were regarded simply as accidental. The corium contained giant cells, mast cells and polynuclear leucocytes. The organisms were not so numerous in this case as in those previously described, being found only in the epithelium in the miliary abscesses. They were cultivated best upon beerwort, glucose and glycerin-agar. They also grew readily on blood serum and on potato.

When injected subcutaneously into guinea-pigs and rabbits this organism produced local abscesses, which were *sometimes* followed by gradual emaciation and death after from two to four weeks, and foci of granulation tissue in the lungs and liver contained blastomyces.

The writers then passed in review the cases of this affection that have been previously reported, mentioning Gilchrist, Busse, Welles, Hessler, etc. They also refer to a case of a woman of sixty-five, who first developed a papule on the posterior surface of the right leg. This was soon followed by a second papule, and the two united and an ulcer was formed, which would heal and then reopen. The growth was regarded as an epithelioma, but microscopic examination of the excised mass showed epithelial proliferation and miliary abscesses containing blastomyces.

It is pointed out that seven cases of this affection are on record in each of which the organism has been cultivated and carefully studied; of these, six involved the skin alone. Five of the patients were men and two were women, all in or near middle life. The disease usually lasted from five to ten years. The dorsum of the hand and the anterior surface of the right leg are the parts most often primarily affected, and the writers think it fair to conclude that in these cases the affection has been conveyed from the hand to the leg. Hand lesions have been prominent in four of the seven cases.

With regard to diagnosis, the affection resembles tuberculosis to a striking degree, especially the form known by the name of tuberculosis verrucosa cutis, and the writers are not prepared to say that a decisive diagnosis can at present be made from the clinical appearances alone. At the same time the assertion is made that when their attention had been directed to blastomycetic dermatitis, it became probable to them that other cases of this disorder had been observed by them, and considered instances of tuberculosis.

So far as can be judged from the small number of cases on record, the prognosis of the affection is pretty good. The iodide of potash produced a marked improvement, and the hand is reported to have become worse when this drug was omitted. The writer concludes: (1) That there is sufficient evidence to justify the acceptance of blastomycetic dermatitis as a distinct disease, due to the invasion of the skin by one of the forms of the yeast family; (2) that this dermatosis bears a close resemblance to certain forms of cutaneous tuberculosis, and that a microscopical examination is necessary to distinguish it from this latter affection; (3) that the internal administration of the iodide of potash should be tried in future cases, on account of the improvement produced by it in the case reported.

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[6] British Journal of Dermatology, July, 1899.

[The resemblance of these cases to verracous tuberculosis is so close that the utmost care should be taken in excluding this affection. It is not impossible that a complication may exist in some instances, the yeast parasite being engrafted on a pre-existing tuberculosis. An exhaustive negative search for the tubercle bacillus would add great strength to a positive diagnosis of blastomycetic dermatitis. Rep.]

THE NATURE OF ERYTHEMA INDURATUM.

Erythema induratum was first described by Bazin,[7] but had been overlooked and forgotten until a few years ago, when attention was again directed to it by the French school. The nature of the affection has not yet been definitely settled, however. It was regarded as a scrofulide by Bazin, with the vague conception that this term conveyed at that period. Pringle and Crocker have regarded it as a manifestation of tuberculosis, without definite anatomical proof. Audry thought that it was a fatty degeneration, developing upon a territory affected with edema, while Leredde considered that it belonged in the class of "tuberculides."

Thibierge and Ravant's studies were made on cases of indurated erythema, which were found to have the same anatomical character. The subjects were all young women, two of the cases being of the non-ulcerated, one of the ulcerated, variety. The microscope showed the tumors to be divided into lobules by bands of sclerous tissue in the subcutaneous region. Vascular changes were noted, with an infiltration of embryonic and giant cells in the neighborhood, with some granular degeneration and necrosis. In no instance was the tubercle bacillus discovered, from twenty to twenty-five sections being searched in each case. Attempts at inoculation were negative except in one instance, that of a girl of fifteen, who had ulcerated lesions on the legs, cicatrices upon the thighs, and tuberculosis of one finger. A guinea-pig inoculated with a bit of the tumor that was not ulcerated was killed thirty days after the inoculation, and showed a typical tuberculosis, the glands, liver and spleen being filled with tubercles. A second guinea-pig was inoculated with the spleen of the first and developed tuberculosis a month later. The writers consider that the vascular lesions, the inflammatory and degenerative changes, and the giant cells are sufficiently suggestive of tuberculosis, which is made positive, in their eyes, by the result of inoculation in the last case. The absence of the tubercle bacillus they do not regard as a strong argument against their theory, inasmuch as it is so difficult to find in almost all forms of cutaneous tuberculosis, and a longer search might have demonstrated its presence. They suggest the name "tuberculome" for these tumors.

The clinical arguments in favor of the tubercular origin of this affection are then touched upon, and the writers repeat that the subjects of indurated erythema often have a tuberculosis of other organs, or have lived in immediate contact with a person affected with tuberculosis.

The importance of the vascular lesions in erythema induratum is insisted upon, and the opinion is hazarded that the nodes may be the result of an embolic process. The writers conclude that Bazin's erythema induratum belongs in the class of cutaneous tuberculoses, and is caused directly by the action of the tubercle bacillus.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

Regular meeting, Monday, March 27, 1899, Dr. R. H. Fitz in the chair.

Dr. J. H. McCollom read a paper on

SCARLATINA.[1]

From the examination of the health reports both in this country and in Europe and from the study of 1,000 cases the following conclusions may be drawn:

(1) That scarlatina is more prevalent in Boston than in some of the larger foreign and American cities.

(2) That scarlatina has diminished in frequency in Boston during the past three years owing to the establishment of an isolation hospital sufficiently large to accommodate all applicants.

(3) That the death-rate of scarlatina in the hospital, considering the class of cases that are treated, is remarkably low.

(4) That the period of isolation in scarlatina, in order to be effectual, should be continued for a long time, at least fifty days.

(5) That rest in bed and a non-irritating diet during the first few weeks of the illness are very important factors in reducing the frequency of renal complications in scarlatina.

Dr. Rotch: The paper is a very valuable one. Certain points in it should attract especial attention: First there is what Dr. McCollom describes as the desquamation around the edge of the nails. This is not, I think, generally looked for by the general practitioner. Also what Dr. McCollom has noticed about the papillæ of the tongue is comparatively new. What he says about the relapses is important. These three points in the paper are of especial interest. I myself rather believe in the tub bath for little children where you can have a tub by the bed and wrap the child in a thin blanket and gradually lower it into the tub, graduating the temperature of the water exactly with a thermometer; I think it can perhaps be managed better than by sponging in bed, and I think the child minds it rather less. We should be careful about the application of cold water to young children. Certain children show very serious signs of collapse after it. I fully agree with Dr. McCollom that it is most valuable in the treatment of scarlatina.

Dr. Buckingham: I think Dr. McCollom has done a valuable thing in calling attention to these relapses and second attacks. I do not think that they are appreciated by the community at large as much as they ought to be. They certainly do occur.

As to the use of fats on the skin, my experience has not been large enough to speak very positively as to how much they affect temperature, but I believe the effect of vaseline is not the same as that of the animal fats. I have had patients treated with vaseline on one side of the body and with lard on the other side, and the way in which they remain on the skin is quite different. Lard will soak in and disappear very quickly with a high temperature, but vaseline will not.

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[7] Thibierge and Ravant: Annales de Derm. et de Syph., June, 1899.

[1] This paper appeared in full in the Report of the Medical and Surgical Staff of the Boston City Hospital for 1898.

Will Dr. McCollom please state how often he finds an antitoxin rash simulating scarlet fever and having the scarlet fever appearance in the throat and mouth?

Dr. McCollom: In every case of scarlet fever you have an eruption in the throat, and this has been one important point in the differential diagnosis.

Dr. Farlow: Dr. McCollom has spoken of the enlarged papillæ on the side of the tongue as being universally present in scarlatina. It seems to me that I have seen a similar condition occasionally when scarlatina was absent, and I would like to ask Dr. McCollom if he has not seen such cases.

Dr. McCollom: Except in scarlet fever I don't think you ever see this peculiar appearance. You see enlarged papillæ, but you don't see the papillæ enlarged in this peculiar way. You cannot describe it. I never saw it in any other condition or disease. You see enlarged papillæ in measles, but the enlargement is entirely different from the enlargement you see in scarlet fever. It is possible, I presume, for a person to have enlarged papillæ of a certain type, but this peculiar type is something I think that is only found in scarlet fever and not in any other disease.

Dr. F. H. Williams: We are all much indebted to Dr. McCollom for his valuable paper. I should like to ask about the use of other things than vaseline on the skin, with a view of getting rid of the desquamation earlier; for example, a mixture of glycerin and peroxide of hydrogen.

Dr. McCollom: I have not tried a mixture of glycerin and peroxide of hydrogen, and it possibly might accelerate desquamation. I have tried about everything else without any satisfactory result.

Dr. Williams: In quite a number of cases it did shorten the period. A few years ago I used in the scarlet-fever ward of the Boston City Hospital a mixture containing one part of glycerin and seven parts of ten-volume hydrogen-peroxide solution. In a series of cases this mixture was applied daily to the skin of every alternate patient and I found that the average period of desquamation was shortened in those where it was used as compared with those in which it was omitted.

Dr. Morse: I should like to ask how the enlargement of the papillæ which you get in young babies and children in gastro-enteric disturbances differs from that in scarlet fever.

Dr. McCollom: There are two varieties of enlargement in scarlet fever. One looks as if Cayenne pepper had been rubbed on the tip and edges of the tongue. In the second the papillæ assume a sort of button-like appearance entirely different from the appearance that you see in young babies who have digestive disturbance.

Dr. Morse: Have you examined a large series of young children with reference to this point?

Dr. McCollom: Quite a number, but they look entirely different from the enlarged papillæ you see in scarlet fever.

Dr. Fitz: Dr. McCollom recommends that the period of quarantine be fifty days. Has he evidence which makes that period necessary?

Dr. McCollom: The process of desquamation is not entirely completed in the majority of cases in less than that time. I have known quite a number of cases where children have been released from quarantine in three weeks and the rest of the family came down with scarlet fever in five or six days. In these cases other sources of infection could be eliminated.

Dr. Rotch: Should we not consider the individual rather than the average case in determining the period for isolation? In certain cases where the skin is not very deeply affected the desquamation may run a shorter course. Does Dr. McCollom think it worth while to isolate cases fifty days, where the desquamation has entirely ceased in a far less time?

Dr. McCollom: If I did not find necrotic skin in the commissures of the toes and fingers, I should say the patient could not communicate the disease, but as long as there was necrotic skin — and in the majority of cases you will find necrotic skin up to forty-five and fifty days — I should think the patient should be isolated.

Dr. Brough: Dr. McCollom has referred to the great diminution in the number of cases of infectious disease in Boston since the establishment of the hospital. It has seemed to me that there is another and very important factor in causing the decrease in the number of cases. This was the establishment by the Board of Health of the Medical Inspectors of Schools. In addition to their other duties these inspectors examine into the isolation of every case of infectious disease treated at home. The city is divided into forty-nine districts and each inspector reports on the isolation of each case in his district. This inspection began about the same time that the new hospital for contagious diseases was built. We now find owing to this inspection that more care is taken of the isolation of the infectious cases at home than ever before. The hospital has been of incalculable value to the Board of Health in receiving cases that could not be isolated at home. Only these cases that can be properly isolated are allowed to stay at home. If isolation can be carried out at home the case is removed to the hospital whether the family desire the sick person to go or not.

The Board of Health has the power of forcibly removing these cases if there is any opposition, and this power is used very frequently. We thus find that this results in that only selected cases are allowed to remain at home. Of these cases that remain at home, isolation is kept up until the patient is thoroughly free from any danger of infecting others, which the medical inspector so certifies. Thus the new hospital has enabled the Board of Health to carry into effect the proper isolation of infectious diseases and this has certainly been an important factor in reducing the number of cases in the last few years.

Dr. Townsend: What was the average length of isolation?

Dr. Brough: About four weeks is the average time.

Dr. Townsend: If fifty days, or seven weeks, is needed, as advised by the reader, four weeks would be very insufficient and many more cases of scarlet fever would occur after isolation has been given up in those families. I think myself four weeks is short, but five or six weeks seems safe in a great many cases, and the saving in time of two weeks or even one, in private practice, is a great boon to the family as well as to the physician. Each case ought to be judged by itself and quarantine not relaxed until all desquamation has ceased. I have found warm butter useful during this period in hastening the process of desquamation.

Dr. Fitz: If, as Dr. McCollom suggests, a protozoön is the cause of the disease, it is a little difficult to understand its passing out through the cuticle.

Dr. McCollom: I doubt if scarlet fever is a bacterial disease. We know that so long as a child is desquamating he is a source of danger to other children. When I state fifty days, it seems to me in the majority of cases fifty days is a much better time than four or five weeks, and I have known of quite a number of cases where the isolation has been only four or five weeks and a second series of cases has appeared in the families.

Dr. Fitz: The possibility comes in that the second series may have received the disease from other sources.

Dr. McCollom: In these cases I was thoroughly convinced that the children contracted the disease from the child who had scarlet fever originally.

Dr. Folsom: Have the cases at the hospital ever been tabulated and analyzed in reference to that point, with regard to the length of time desquamation is actually observed in the various cases?

Dr. McCollom: They never have been tabulated. There is an immense amount of material.

Dr. Folsom: I think my individual cases must have amounted to five hundred or more and I must say I should be very unwilling indeed to make any guess upon those cases of the length of time during which quarantine is necessary. The period of time during which desquamation was observed after the initial fever varied very much indeed in the individual cases. I have never seen any external application which made the least difference with regard to that point except cold baths. I believe that cold baths materially shorten the length of the disease. All these cases of mine were treated with cold baths from the beginning when the temperature got beyond 102.5° F. and frequently, as they are given in typhoid fever. As Dr. Rotch says, I don't know any other one measure of treatment which gives so much comfort to the child, and it seems to me that it makes a difference in the length of time during which desquamation was observed. There must be an immense mass of evidence at the hospital on that point and it seems to me that it would be of very great value if some one would tabulate the cases and find out what the facts are. It is a very great hardship if a child has a mild attack of scarlet fever and desquamation disappears soon to maintain a long quarantine, yet of course it is important from the point of view of the public that it should be long enough to be safe.

Dr. McCollom: It is an important point that a mild attack of scarlet fever desquamates more slowly than a very severe attack. I have seen a severe case get through desquamating in four weeks. Before the patients are discharged they are carefully examined, and if there is any necrotic skin anywhere it does not seem to me they ought to be discharged, because they can communicate the disease to other people.

Dr. W. T. Councilman presented the subject of

TUBERCULOSIS,

illustrating his remarks by a large number of lantern-slides showing the various tubercular lesions.

Bust of Emil Dubois-Reymond. — A marble bust of Dubois-Reymond has been placed in the Physiological Institute of Berlin.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Twenty-third Annual Meeting, held at Philadelphia, May 30, 31, and June 1, 1899.

FIRST DAY.

The President of the Association, Dr. John A Fordyce, opened the meeting with an address in which he gave an admirable *résumé* of the advances in dermatology that have been made within the past year.

Dr. M. B. Hartzell read a paper on

EPITHELIOMA AS A SEQUEL OF PSORIASIS, AND THE PROBABILITY OF ITS ARSENICAL ORIGIN.

The patient, a woman of thirty-five years, had been affected with psoriasis since the age of fourteen. Upon the outer side of the left heel there was an ulcer two inches in diameter with shallow edges and a deep centre. The palms and soles showed marked keratosis, with corn-like elevations. Upon the elbows and trunk were a few patches of psoriasis which presented nothing unusual. In the left groin was a bosselated tumor the size of a small orange, firm and elastic except at the summit, where it was soft. The patient had been given arsenic in considerable doses over long periods of time. The patient developed the horny condition of the palms and soles about two years after the psoriasis had made its appearance. Later small superficial ulcers occurred beneath the horny masses and obstinately refused to heal. At this time the tumor in the groin speedily ulcerated, forming a deep, fungating, foul ulcer which discharged abundantly. This was soon followed by a more or less continuous fever, loss of appetite, rapid emaciation and death in about two months. Histologic examination of an excised section of the border of the ulcer demonstrated beyond doubt its epitheliomatous nature.

Ten cases of associated epithelioma and psoriasis have been reported. In all of them the psoriasis was of quite long standing; in all but 3 there was some form of keratosis; and in all epitheliomatous change took place beneath one or more of the horny excrescences. In all in which mention is made of treatment, 8 out of 11, arsenic had been given in considerable quantity over a long period. It is noteworthy that in 50 per cent. of the cases the lesions were multiple and that one-half of the patients were under the age of forty. In conclusion, the writer remarked that the evidence thus far in our possession was of such a character as to permit us to accept as very probable, at least, the arsenical origin of the epithelioma in these cases.

In the discussion that followed, some of the members held that the epitheliomatous change was due to the continued irritation produced by the excessive keratosis and could not be directly traced to the arsenic. Dr. Hartzell, in closing, maintained that the arsenic being the cause of the keratosis was responsible for the epithelioma that it superinduced.

Dr. L. D. Bulkley, of New York, read a paper entitled

IMPERFECT OR DEFICIENT URINARY SECRETION AS OBSERVED IN CONNECTION WITH CERTAIN DISEASES OF THE SKIN.

The article was a record of the results of the examination of the urine in several hundred cases of skin disease. Careful quantitative analyses had been made of the various urinary constituents. No uniform characteristics were found peculiar to any particular dermatosis. The urine often varied greatly in the same disease. In psoriatic patients the urine was usually of high specific gravity and contained urea in excess.

Dr. J. T. Bowen, of Boston, reported

TWO EPIDEMICS OF ALOPECIA AREATA IN AN ASYLUM FOR GIRLS.

Several months after a young girl had been attacked with areate baldness of the scalp the disease broke out among the other inmates of the institution in which she lived, and spread so rapidly that in a short time 63 of the 69 girls were attacked. After several years' absence the original patient returned to the asylum and again gave rise to an epidemic of the disease, this time 26 out of 45 inmates becoming affected, although only 4 of these were among those previously attacked. The disease differed only from the ordinary type of alopecia areata in the smallness of the patches and their angularity. Numerous examinations of the hairs failed to show the presence of any parasite. Similar epidemics have been recorded by French observers, but heretofore none has been noted in America.

Dr. James C. White, of Boston, who saw the patients referred to, was inclined to believe that the disease was not a true alopecia areata as he comprehended the term.

The discussion that followed revealed the fact that while many American dermatologists still hold to the trophoneurotic theory as an explanation of the majority of cases of alopecia areata, there is an increasing disposition to accredit the theory of contagion.

EVENING SESSION.

Dr. S. Sherwell, of Brooklyn, read a paper entitled

REPORT OF A CASE OF CONGENITAL DERMATITIS HERPETIFORMIS AND ALMOST COMPLETE ABSENCE OF FINGER AND TOE NAILS.

Dr. D. W. Montgomery, of San Francisco, reported

A MACULO-ANESTHETIC LEPRIDE OF THE PALM.

Dr. J. C. Johnston, of New York, read a paper on

NECROTIC GRANULOMA AND INDURATED ERYTHEMA IN THE SAME SUBJECT.

(*To be continued.*)

Filtration for the Water Supply of Philadelphia. — Now that the commission of experts appointed by Mayor Ashbridge, says the *Philadelphia Medical Journal*, has reported in favor of slow sand-filtration as the best remedy for the purification of the water supply of the city of Philadelphia, councils should lose no time in putting into speedy and active operation the recommendations proposed, thus at once freeing the city of the stigma that it has so long borne, and stopping the destruction of life that its citizens have so patiently and so meekly endured. Let us have filtered water, and let us have it without delay.

THE BOSTON

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THE INTERNATIONAL CONGRESS ON VENEREAL DISEASE.

As previously announced, an international conference for the prevention of syphilis and venereal disease has recently been held in Brussels, and, as its importance warranted, was well attended by French, German and English syphilographers, as well as by others interested in the general question. The significance of the meeting lay not only in the importance of the subjects under discussion, but also in the fact that this was the first international recognition of this type of disease, as a menace to society. Such congresses will tend to force upon all civilized countries the absolute necessity of recognizing the widespread prevalence of venereal affections and of instituting such prophylactic and protective measures as may ensure to the greatest degree the general health of the community.

From an interesting report which has appeared in the current number of the *Medical News*, regarding the proceedings of the Congress, we should judge that the same difference of opinion prevails to-day as in times past relative to the legal control of prostitution. Discussion was evidently active, if not actually acrimonious, and no doubt the various disputants came away more convinced than ever of the correctness of their own positions. Inevitable as this outcome usually is, nevertheless such discussions are exceedingly valuable in bringing out essential points of difference, and determining accurately the varying conditions under which work must be attempted. In general the French and German speakers advocated official control, while the English, the most notable of whom was Dr. Jonathan Hutchinson, opposed such methods. Hutchinson was inclined to think that the danger of syphilis had been exaggerated and that a popular fear was being aroused which was unnecessary and unfortunate.

A proposition, moved by Fournier, of Paris, urging upon governments to use all their powers for the absolute suppression of juvenile prostitution was unanimously adopted. A second proposal suggested the foundation of a society of sanitary and moral prophylaxis, whose centre should be in Brussels and which should encourage the creation of a quarterly publication, and also future meetings of the Congress — the next to be held in Brussels in 1902. In a third proposition the conference recommends governments to secure a supply of doctors thoroughly competent in this specialty, by instituting in each university complete and compulsory courses, the subjects of which shall form part of the State examinations, the examiners to be specialists. A fourth proposition related to the more careful supervision of orphan children. A fifth proposal advocated the equal application of laws to *souteneurs* and pimps as to prostitutes. A sixth proposition suggests the appointment by government in each country of a commission to determine the frequency of venereal disease, to inquire as to existing institutions for its treatment, and to reach some definite conclusions as to the best means of preventing venereal disease. A seventh proposal urged governments to avail themselves of every proper opportunity to draw public attention to the dangers of prostitution. An eighth and final resolution expressed the wish that the statistics of venereal diseases might be arranged on a uniform basis for all countries.

We shall await with interest the final and official report of the Congress. Medicine has no more difficult problem to solve than this of venereal disease and its relation to society at large. As was insisted upon at this meeting, the sentimental side of the question must be left aside, or given a subordinate place, until the scientific aspects of the question are exhausted. The spread of venereal disease must be prevented at all hazards; that is the chief end to be attained, whether by legal control or by methods directed toward the completer education of the people in matters related to the sexual sphere. With all the difficulties in arriving at general conclusions, one fact is perfectly clear, and that is that the conditions to be met differ widely in different countries, depending upon the character of the people and the openness with which prostitution is practised. It is easy to conceive that forcible repression in the case of one country, whose inhabitants have certain traditions and moral standards, would be completely inefficacious as applied to another of different traditions. In any case the problem is a knotty one, which we are safe in assuming will not be definitely solved while human nature and the sexual instinct remain as they are. This should, however, not discourage our efforts in the right direction, and such conferences as that just held at Brussels undoubtedly do much toward clearing the way for reasonable and effective action in the future.

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THE SCIENTIFIC STUDY OF PHYSICAL TRAINING.

Our attention has been called to the fact that we seemed not to give due credit to the work of Williams and Arnold in our editorial of September 14th, on "Scientific Study of Physical Training." It will be remembered by those interested in the subject that a paper by these writers appeared in the *Philadelphia Medical Journal*, June 3d, which concerned itself particularly with the effects of prolonged muscular exercise upon the heart. This work consisted in a study of the physical condition of certain men, not for the most part in strict training, before and after a long running contest known as the Marathon race. It follows that, valuable as their conclusions are, their opportunities for observation were limited and not to be compared in scope to the possibilities afforded Darling in his investigations of the Harvard crews, extending as they did over a considerable period of time under varying conditions. It was by no means our intention to belittle any work done toward the solution of the difficult problems of training; we need all the evidence possible from every source. We merely took Darling's completer paper as a type of investigation which demands encouragement. Any other interpretation of our editorial comments on the subject is misplaced.

The following remark was made at the outset in our communication: "We desire to call attention not so much to the details of Dr. Darling's interesting investigation, for which we would refer our readers to the original paper, as to the significance of such studies in general with reference to the highly important matter of athletic training." If we fell short of this general aim in our subsequent remarks, we regret it, and are quite willing to give credit whenever and wherever it is due.

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MEDICAL NOTES.

A Memorial to Dr. Mueller. — It is reported that a memorial to Dr. Mueller, who lost his life while studying plague a year ago in Vienna, is about to be unveiled.

Compulsory Vaccination in Japan. — We learn from the *Medical News* that one of the latest signs of progress in Japan is the announcement that the Japanese Government has decided to make vaccination compulsory in Japan, and that all children are to be vaccinated before they reach the age of ten months. They must be revaccinated when they are six and again when they are twelve years of age.

Value of Glycerinized Vaccine Lymph. — Dr. Albert C. Barnes, of Philadelphia, has recently collected a large number of statistics regarding the various methods of vaccination and their efficacy. His conclusions are published in the *American Gynecological and Obstetrical Journal* for September, and are essentially as follow: He finds that when glycerinized lymph is used vaccination is successful in from 90 to 100 per cent. of primary cases and from 60 to 75 per cent. of secondary cases; that properly prepared glycerinized vaccine is pure and free from staphylococci, streptococci, and other pathogenic organisms; that glycerinized vaccine affords absolute protection against small-pox; that vaccination with the glycerinized products does not cause excessive inflammation of the vaccinated area; that vaccine points are apt to lead to a false sense of security, inasmuch as they induce a local staphylococcic or streptococcic infection which is entirely distinct from true vaccination; that a high estimate of successful "takes" from vaccine points is by these and numerous other reports shown to be not over 60 per cent. in primary cases and a much lower percentage in secondary cases; that glycerinized vaccine has been officially adopted by the governments and health authorities of the United States, Great Britain, Germany, France, Russia and Belgium.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, October 4, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 80, scarlet fever 21, measles 2, typhoid fever 28.

Improved Facilities for Bowdoin Medical School. — The medical students of Bowdoin College will, according to *Science*, receive instruction during their last year at Portland, where suitable buildings are now being erected, and where they will have improved clinical facilities. After 1900 the course will be four years in length, the first two years being spent at Brunswick, and the second two years at Portland.

NEW YORK.

"Knock-Out" Drops. — A man was convicted in the Court of General Sessions on September 26th, before Recorder Goff, of having "knock-out drops" in his possession, and it is said that this is the first conviction of its kind in the New York criminal courts. Persons have been convicted who used such drops in assisting them to rob, but the convictions have all been on the robbery charge. The prisoner was first tried on the charge of robbing a man of $100 in a saloon, and the evidence being insufficient, he was acquitted, but as it was brought out at the trial that knock-out drops had been found in his possession, the recorder suggested to the district attorney's office that the case of Riallis be brought before the Grand Jury. This being done, the Grand Jury indicted him, and at the trial expert testimony was introduced, showing that the vial which he had contained chloral hydrate. The maximum penalty is ten years in State prison.

John H. Feuss, M.D. — On the transport *Burnside*, which arrived from Santiago on September 27th, was the body of Dr. John H. Feuss, acting assistant surgeon United States Army, a passenger on the steamer, who had committed suicide by shooting himself in the heart on the day previous. He was a contract surgeon who had been stationed at Brocadella Terra, and a letter which he left addressed to a New York physician indicated that he had brooded a great deal over certain alleged charges against him that he had suppressed knowledge that yellow fever had gained a foothold in that town, fearing that even if they were proved to be unfounded his reputation would be affected. On the steamer it was stated that he had complained of malarial trouble and appeared to be suffering from great mental depression. Dr. Feuss was thirty-five years old and a native of Bremen, Germany.

Dr. Francis A. Thomas. — Dr. Francis A. Thomas, who had practised for over forty years in the 19th Ward of New York City, died at the Presbyterian Hospital on September 28th from concussion of the brain, the result of being struck by a cable car two days previous. He was seventy-three years old and a native of Lewis County, N. Y. He was graduated from the College of Physicians and Surgeons, Columbia University, in 1853.

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Correspondence.

[Special Correspondence.]

LETTER FROM PARIS.

The Status of Therapeutics in the Medical World in France.

Paris, September, 1899.

Mr. Editor: — The Paris Society of Therapeutics has at last publicly called attention to a question that for many years back has been slowly but steadily forcing its way to the front here: *the status of therapeutics in the medical world in France.*

At one of its meetings this spring a prominent practitioner in Paris entered a protest against the unintelligent way in which iodide of potash is administered by the generality of physicians in disorders of the circulatory system; he added that practitioners appeared to lack familiarity with many new remedies and methods of treatment, and finally proposed to the members of the Society that, as no one was better fitted than themselves for the purpose, they should take the initiative of drawing up and publishing a complete study of the principal remedies used in daily practice (about fifty in number, according to him), for the instruction and guidance of their *confrères.*

His remarks about the lack of therapeutic knowledge on the part of the average physician were immediately echoed, with still greater emphasis, it may be said, by the professor of materia medica at the Paris Faculty, who observed as follows:

"It must be admitted that the scandal of our times is the shameful ignorance shown by an infinite number of physicians concerning the real action of drugs. Although our practitioners are pretty fair clinicians, they are almost all unaware of the true properties of the remedies which they handle every day with extraordinary heedlessness."

The Society appears to have accepted this statement, and to have agreed with this description of the condition of affairs, as it lost no time in appointing a committee of three members to report on the most feasible plan of commencing work on this compendium of therapeutics to be issued under its sanction.

This is, I fancy, the first time such a work has been undertaken under similar circumstances, and I shall follow with the deepest interest the carrying out of the project by the members of the Society. Any one who has ever had occasion to look up a given drug in a series of authorities belonging to different countries has realized the enormous latitude existing between their opinions, and the fearful divergencies between their judgment as to its use in a given disease; if to this we add the touchy nature of the members who will be gathered together to discuss the articles of the compendium, and the strong individual opinions that many of them hold on their few pet subjects and which nothing will compel them to relinquish, it is not easy at first sight to see how the work can possibly progress.

The fact of the matter is that the study of drugs, and of their application to the relief of disease, had fallen to a pretty low point in France. Profound skepticism was the universal order of the day. The student in the hospitals saw nothing but the half-dozen great specifics administered, when indicated, the other patients being treated by rest, diet, cataplasms, herb-teas, etc. Prescription writing was openly scoffed at in the wards, as will be seen from the following illustration. One of my former masters here, an excellent teacher so far as diagnosis went, remarked to us one day: "Gentlemen, when you are in practice, you will see that the point that will most impress a *confrère* is a correct diagnosis; the patient's family will be most impressed if your prognosis turns out correctly; but you yourself will be most impressed when your treatment is followed by any improvement that you think can fairly be ascribed to it."

At the Faculty of Medicine the lectures on materia medica and therapeutics were generally given by men who had no special training or taste for the subjects, but who had been appointed professors of those chairs because it happened to be their turn for a professorship, the consequence being that no one attended the lectures, which were non-obligatory. In the chairs of general medicine the chapter "Treatment," in each disease, was equally neglected. I personally once attended a course of lectures at the Faculty by a man who is now dead. He lectured for an hour three times a week for nearly two months on the subject Pneumonia, and then crowded his treatment into the last half-hour of the last lecture, whereas he had spent days on the pathological anatomy alone.

It is furthermore a noteworthy fact that there does not exist a single good work on materia medica and therapeutics by a French author.

The result of such training was that when the students came to their final examinations, their knowledge of these branches was practically *nil*. A French friend of mine who had to pass in materia medica and therapeutics this spring — an examination, which, like all the others, is oral in France — told me that of the nine candidates that day, not one could give the examiners any information whatever about sulphonal, and appeared to think that they had been very hardly used in getting such a question.

But when they finally became doctors, the therapeutic skepticism, which was their most cherished article of faith, received a severe blow, as they found their patients anything but disposed to put up with that sort of ideas. Useful or not useful, the French patient requires his physician to give him medicine of some sort to take; and if he does not get it from one man, he simply sends for some other physician. The young doctor, then, knowing nothing whatever of that branch, was obliged to resort to one of two expedients: he either hurriedly learnt by heart a certain number of prescriptions in one of the many wretched formularies that crowd the shelves of the medical booksellers, or else he set to work to prescribe proprietary medicines, of which he had a countless number at his disposal.

From what I have observed I should say that the former plan was the one usually followed at the beginning of a medical career. Later on, many men tried a little formula-writing on their own account, but promptly found themselves in a most humiliating position. Ignorant of the action, doses, form, solubility, etc., of many of their remedies, it was not long before shameful errors appeared in their prescriptions, for which they were openly derided by the druggist; they also soon felt the risk connected with prescribing syrups, tinctures, etc., without a definite idea of the amount of active principle represented by a given dose.

This became disheartening after a while. The steadily increasing demands of a practice on their time prevented their taking up the question from the beginning and really mastering it, so the final stage in their career was marked by the lax habit of prescribing proprietary medicines — X's Syrup, or Y's Pills; "an excellent preparation; you will find full directions on the wrapper." This was so easy and saved such a lot of time!

My readers would have great difficulty in grasping the extent to which this ordering of "specialties," as they are called, has been carried in France. The most eminent Paris consulting physicians do it, men known all over the world for their scientific worth, and men who possess all the honors France can confer.

I have before me two written consultations with one of the leading professors of the Faculty, a physician of great and just repute. They both cover three sides of ordinary letter paper, and are subdivided into *primo*, *secundo*, etc. They read as follows:

For Mrs. D.

1° Diet.
2° Proprietary medicine.
3° Written formula.
4° Two proprietary medicines.
5° Proprietary medicine for external use.
6° Two proprietary medicines.
7° General directions.

For Mrs. W.

1° Proprietary medicine.
2° Proprietary medicine.
3° Proprietary medicine.
4° Written formula, but into which enters a proprietary medicine.
5° Written formula.
6° Climate.

There is no man in Paris of better standing than the writer of these two prescriptions; so if the leaders err in this fashion, it is not a matter of surprise that the rank and file follow suit.

It must not be supposed that Paris has had absolutely no exponents of the art of handling drugs. We have had, of late years, two men who have been pre-eminent in this branch, both of whom have written or edited voluminous though poor treatises on the subject. There is, however, little doubt but that their therapeutic proclivities were distinctly harmful to their professional standing with their *confrères*, by whom they were commonly termed "polypharmacists," — a most derogatory term in France, — and neither of them attained the high official positions in the profession to which their talents might have warranted their aspiring. One of them, by the way, is the author of a very neat shot fired into the ranks of the therapeutic unbelievers. In speaking of the mistake it is in face of disease to fold one's hands and do nothing, he remarks: "Le doute élevé à la hauteur d'un principe ne va jamais sans une réelle ignorance!"

There is also in France a peculiar feature in medical life that has unquestionably deterred many, who might otherwise have been led to do so, from writing on questions of therapeutics. The druggists are constantly on the lookout for new remedies to put up in the form of proprietary medicines. The moment a man publishes anything in this line, some druggist pounces upon it, prepares the stuff wholesale, calls it Dr. X's, cites the author's article on the cover, and puts his name in the advertisement he inserts in all the daily papers. You see at once the poor physician's predicament and the light he can be placed in. The curious part of the affair is that, according to the institution the French call Law, the physician has absolutely no redress against the druggist who has put him in such a plight. Many of my readers may remember the pharmaceutical orgies that took place after the first papers were read at the Academy of Medicine on the action of glycerophosphates.

Such, in brief, has been the state of matters in therapeutics in France. For some time past the medical world has been realizing that something would have to be done, and curiously enough it is the druggists who are in a large measure responsible for the "revival" that is now taking place. They claim that in the "specialties" the only man who makes a profit is A, the maker of the "specialty"; that B, who sells A's preparation when ordered, makes nothing like as much as though that prescription had contained a written formula that he could have made up out of the original drugs. They, therefore, have been calling attention to all this "specialty" traffic in the hopes of putting a stop to it.

Physicians have also observed two other points. Many patients, when given a "specialty" which they have seen advertised in their daily paper, say to themselves: "It was not really worth while to pay that doctor a fee for something I could just as well have got from my own paper." The second point is, that when a friend of theirs complains of feeling seedy, instead of telling him to see a doctor, they prescribe the "specialty" on their own authority, so that the medical man has probably lost a whole series of patients by his ignorance.

Finally, many men feel that this reliance on the "specialty" puts them in a humiliating light, and that future generations of physicians ought to be better equipped than they were when they left the schools of medicine. This feeling is meeting with a response at the Faculty here, where the severity at the examinations is being slowly, but steadily, increased. It was about time!

In closing this letter I should like to refer to another recent occurrence at the meetings of the Society of Therapeutics. A proposal was made to elect a certain number of foreign correspondents *honoris causâ*, and a list of thirty-two men, representing twelve different countries, was drawn up, presented to the Society and adopted by the members. In this list England, Germany, and other leading countries are worthily represented by Lauder Brunton, Leyden, etc.; and then come Norway, Belgium, Spain, Russia (seven names!) etc., represented by men whose fame, I humbly confess, had not reached my ears. The United States appears to possess no therapeutist of eminence, at least we have not the honor of being included in the Society's list, not even by the side of little Portugal, which country (two representatives) was added to the original list at a subsequent meeting, in order, presumably, to make it complete.

SPECTATOR.

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GENERAL WOOD'S REPORT ON PROVINCES OF SANTA CLARA AND SANTIAGO, CUBA.

WASHINGTON, September 23, 1899.

MR. EDITOR: — A very interesting report from Gen. Leonard Wood, commanding the Provinces of Santa Clara and Santiago, Cuba, has just been received at the War Department. This report is dated Cristo, Cuba, August 9, 1899, and covers the year of occupation by United States troops. The report says, in part:

"During the period between August 10th, the date of the formation of the department, and August 25th, the date of sailing of the last of the Fifth Army Corps, the conditions existing in and about the city of Santiago were serious in the extreme. The prostrating effects of the siege were showing themselves plainly on the population, who were dying at the rate of 180 a day. The city was full of sick people, there being hardly a house which did not contain one or more persons suffering from disease. There was a large number of the Fifth Army Corps sick, and field hospitals practically surrounded the city. The water main, which had been partially destroyed during the siege, had not been placed in complete repair and there was a great shortage of water. In addition to our own troops and civilians there were some 12,000 Spanish prisoners, who had nearly 4,000 sick. All these conditions rendered the service of the new troops very trying and the difficulties of supplying and taking care of them became very great."

Referring to the Second United States Volunteer Infantry General Wood says:

"At the time this regiment was sent to Holguin a great epidemic of small-pox was raging in and around that city and the work they were called upon to perform was arduous and dangerous. Military quarantine and isolation hospitals were established. These and other measures, under the intelligent supervision of Colonel Hood, assisted by Dr. R. S. Woodson, United States Army, and Dr. Felipe Veranes, quickly and effectually checked the epidemic and in a short time resulted in its entire subsidence. In connection with this it may be interesting to state, as an illustration of the efficiency of vaccination that this regiment was sent into a district reported to have 9,000 cases of small-pox, 3,000 of which were of a virulent type. The men had all been twice vaccinated and they went safely through the epidemic without a single case occurring in the regiment, although in the performance of their duties they were thrown in constant contact with the people of the infected villages. So complete was the infection that many houses had to be burned. The exact loss of life among the natives will never be known, but it must have amounted to a thousand or more."

General Wood recommends that recruits and officers for Cuban service be sent to the island only during November, December and January, to thus favor acclimatization before the sickly season. He is averse to having officers sent out for duty who are more than fifty years old, as they do not well withstand the effects of the climate. Of the improvements relating to the sanitary condition of Santiago he says:

"We have doubled the water supply, reduced the death-rate, in comparison with former years, fully 50 per cent. Five miles of first-class asphalt streets have been built and curbed with either concrete or bluestone curbing. The same amount of macadam streets have been constructed and in all that portion of these streets constructed in the city proper a thoroughly modern sewerage and water system has been laid, so that, when means are available to complete and put in operation throughout the entire city, it will not be necessary to tear up these newly-constructed pavements.

Extensive and complete surveys have been and are being made in view of submitting a plan for greatly increasing the water supply; which, although double what it formerly was, is barely a fifth of what is needed — and until this supply is procured we cannot put into successful operation a modern sewerage system, nor shall we have water for flushing and cleaning the streets."

A complete sanitary department has been organized and equipped with modern appliances. The work done by this department has been excellent. A sea wall has been built along a large section of the water front and the old sewerage flats have been dredged out and dumped outside of Morro. Extensive fillings have been made in the low swampy lands near the city. An emergency hospital has been established and equipped. The jail, city market and slaughter house have been renovated and repaired. The civil and military (Spanish) hospitals have been renovated and outfitted with modern appliances and furniture. A large ice plant has been installed and is successfully operated. An extensive intercepting sewer will soon be commenced and disinfecting and settling basins constructed. This will completely free the harbor from contamination by means of the present sewers.

General Wood recommends that all troops be withdrawn from seacoast towns known to be infected with yellow fever and quartered in light, airy barracks of wood raised well off the ground, with double roof and wide verandas. These buildings should be cheaply constructed and placed at points, if possible, at least 1,000 feet above the sea. He says:

"We have found it (yellow fever) to be a disease of the towns, developing in damp masonry buildings with earthen and masonry floors; that the points of infection are in the towns themselves and that any amount of precaution will not prevent infection of barracks and hospitals which are situated in these old towns. We have found also that it is a disease which can be most readily checked by isolation, sanitation, sunshine and plenty of fresh air. The inference is that we should send all troops away from towns known to be, or to have been, infected and put them in light, well-ventilated barracks, on the most elevated ground available. Under such circumstances we can deal with the disease under circumstances most advantageous to ourselves and with the best prospect of success. If our barracks do become seriously infected they can be burned and rebuilt for less than it costs to disinfect and rehabilitate the masonry structures turned over to us by the Spaniards. Hospitals should be constructed on the same plan and located at points hitherto uninfected. The buildings should be small, numerous, well separated from each other and well raised from the ground. By following this plan, if a building becomes infected it is only a small one and can easily be dealt with or destroyed, if necessary, without great loss. There are no towns in this department near which suitable locations cannot be found; locations which are both safe from a sanitary standpoint and suitable from a military one. If we can avoid yellow fever we shall have no difficulty in maintaining our troops here in good health."

General Wood recommends khaki as the military uniform but criticises the quality of that issued. A brown helmet is suggested as a head dress and the combination of white forage cap, blue blouse and white trousers as a full-dress uniform. Pommel slickers for the use of mounted troops are highly praised. The present ration appears to be ample. Over-eating is to be avoided and abstinence from alcoholics is to be insisted on. The refrigerated beef is satisfactory and much to be preferred to native beef. The report concludes, in the usual manner, with commendation of the work of individual members of the staff. Altogether the report is unique, showing, as it does, what may be accomplished, in the face of untried conditions and much passive opposition, by the combination of personal force of character, a professional training and full executive authority.

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EFFECTS OF TRAINING.

Washington, September, 1899.

Mr. Editor: — Long professional observation of physical training, with actual personal experience in athletics and the holding of several records, of which modesty alone prevents the mention, must be my apology for saying that the articles by Dr. Darling, in your late issue, August 31st–September 7th, relative to the training of the Harvard crews, have been read with more than pleasurable interest. Dr. Darling assuredly deserves credit for the able investigation and study he has brought to bear upon a timely and popular subject that heretofore has been discussed either by athletes who knew nothing of medicine or by physicians having no practical or personal knowledge of athletics. The resulting conclusions from such divergent points of view, as many of us know, were consequently variable and of little worth. Happily such crude and conflicting views, no longer arbitrary constants, are less prevalent nowadays, since many of our intelligent physicians are not only fine athletes but have done much to break up obsolescent error and to spread sounder knowledge of physical training.

Among the details that strike one in reading Dr. Darling's study, it is quite possible to agree with him on the point that the effects of training on the heart and kidneys in particular may approach unpleasantly near pathological condition, and this is all the more evident when training has been injudicious, as we know much of it to be.

To avoid the ill effects of training and to get the best results, Dr. Darling's first suggestion as to preliminary work might be supplemented and emphasized by insisting upon graduated work; for the ambition of most of our young athletes is to exceed their powers by trying to carry the ox before lifting the calf.

As to nourishment, it is generally known that prevailing notions as to proper food for athletes have greatly changed for the better when compared with those that obtained among trainers several years ago. There is still much room for improvement, and the recognition of individual preferences as to diet suggest to the reflective mind that Mr. James Corbett is quite right in asserting that he eats and drinks what he likes when training, his object being to build himself up and to make himself "feel good," and that in consequence he always gains weight. It appears that in the dietary of the Harvard crew "no tea or coffee was allowed," and that "a dish of calves'-foot jelly with sherry" was given each man during the last week after the morning row. The benefits of this dish are, to say the least, problematical, and the prohibition of coffee is still more doubtful. Not to enter upon a mootable subject, I have found in common with many others that coffee in moderation is of great benefit in training. Naval officers tell me that the reason why our sailors always beat the British at rowing races is because our men drink coffee, while the British man-o'-warsman drinks cocoa. A considerable experience with the United States Army, as well as two Arctic expeditions, convince me of the salutary physical effect of coffee. Wood-choppers have been known to work effectively for weeks on a diet mostly of cornmeal and coffee without milk. Some years ago, I was never in better condition than when sojourning temporarily at a farmhouse, with an improvised gymnasium in the backyard, where I lived on a diet of bacon, a few vegetables and coffee. In reciting the virtues of coffee, I but repeat the concurrent testimony of many experienced and competent observers, all of whom believe it to be a mistake to withhold the moderate use of what is physiologically a permanent and diffusible stimulant of much value when great muscular effort and nervous fatigue are to be undergone, especially in a climate so capricious as ours.

The third point in Dr. Darling's suggestions as to providing variety of exercise is, perhaps, his most valuable one as regards training for a rowing contest. Much practice in a boat is naturally called for when training for a race; but this monotonous exercise should be varied with running and swimming. The judicious interpolation of these two exercises will greatly improve both mind and digestion and put the system in better condition to escape the possible ill effect of high arterial tension. I am aware that most trainers object to swimming as an adjunct to rowing; but what should we think of a trainer with so little notion of harmonious essentials as to allow a boxer no other exercise than that obtained from the gloves? The swimming of race horses may also be mentioned in this connection as part of the training. But I am often told by rowing men that swimming weakens and causes loss of weight. This belief is contrary to the experience of myself and of others. I have done a great deal of rowing, and nothing gets me in better trim for that exercise than to alternate this with the sport of swimming. Moreover, a course of swimming always increases my weight. This was notably so two years ago, when I gained four pounds a month for three months, notwithstanding what some might consider an excessive swim every afternoon in the Potomac River. On another occasion, during an outing at Fort Monroe, the increased assimilation of food incident to swimming caused me to gain ten pounds in ten days. In addition to others with similar experiences, I may cite the case of a medical friend in Washington, who has besides improved his rowing at least fifty per cent., which he attributes to improved condition brought about by swimming. Indeed, I feel so convinced of the utility of introducing variety of exercise and sports as an adjuvant means during training for a rowing contest that given two crews of equal capacity at the outset of training the one trained by my method of alternate exercise would win every time.

There is yet another hint of great value that is generally unobserved. When the men have been trained up to a high key it is wrong to keep them hard at work till the day of the race. In every respect, physically and mentally, they will be more fit if allowed almost complete rest for two or three days before the race. This will contribute largely to that state of euphory, or sense of well-being, so characteristic of perfect training, and will put the men in the best cue to seize the psychological moment that falls to the victor in every contest.

Very truly yours,

Irving C. Rosse, M.D.

METEOROLOGICAL RECORD

For the week ending September 23d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...17	30.27	64	77	52	60	74	67	S.W.	S.W.	8	13	C.	C.	
M..18	30.12	68	80	57	74	81	79	W.	S.W.	10	20	C.	C.	
T...19	30.05	72	82	63	81	83	82	S.W.	S.W.	12	12	F.	O.	
W..20	29.77	65	68	62	100	81	90	N.E.	N.W.	26	10	R.	C.	2.82
T...21	29.87	64	73	54	87	89	88	W.	W.	8	12	O.	C.	.21
F...22	30.05	62	73	50	74	75	74	S.W.	S.W.	10	12	C.	C.	
S...23	30.32	54	59	50	69	62	66	N.	S.E.	14	8	O.	C.	
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* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 23, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1154	478	15.57	11.52	7.74	1.71	2.88
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	211	81	12.69	7.99	4.70	1.88	4.70
Baltimore . .	506,389	179	69	16.80	11.76	11.76	1.68	2.80
Cincinnati . .	405,000	85	—	3.54	1.18	3.54	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	84	30	27.37	13.09	15.47	5.95	3.57
Washington .	277,000	118	40	25.50	14.45	8.50	5.95	7.65
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	40	13	17.50	12.50	15.00	—	2.50
Nashville . .	87,754	29	12	30.72	7.68	12.80	2.56	7.68
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	108,240	39	23	—	—	—	—	—
Fall River . .	95,919	31	22	22.61	6.46	19.38	3.23	—
Cambridge . .	89,724	21	7	19.04	14.28	14.28	—	4.76
Lowell . . .	88,641	25	12	28.00	—	24.00	—	—
Lynn	66,703	17	—	11.76	—	5.88	—	—
New Bedford .	66,340	26	13	11.15	11.15	11.15	—	—
Somerville . .	66,101	21	5	9.52	4.76	—	4.76	—
Lawrence . .	57,263	23	20	21.75	8.70	13.05	—	4.35
Springfield . .	56,501	12	5	8.33	8.33	—	—	8.33
Holyoke . . .	43,424	19	11	21.04	—	21.01	—	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem	36,883	16	5	6.25	6.25	6.25	—	—
Malden . . .	34,613	7	3	28.56	—	14.28	14.28	—
Chelsea . . .	33,468	14	3	7.14	14.28	7.14	—	—
Haverhill . .	32,022	12	4	8.33	—	—	—	—
Gloucester . .	30,589	5	2	—	40.00	—	—	—
Newton . . .	29,716	5	2	20.00	—	20.00	—	—
Fitchburg . .	29,438	6	2	16.66	—	—	—	—
Taunton . . .	28,167	16	4	37.25	6.25	18.75	6.25	—
Everett . . .	25,338	6	2	16.66	16.66	—	—	16.66
Quincy . . .	23,549	4	4	50.00	25.00	50.00	—	—
Pittsfield . .	22,643	7	1	14.28	14.28	14.28	—	—
Waltham . .	22,296	4	3	—	—	—	—	—
North Adams .	20,971	7	3	—	—	—	—	—
Chicopee . .	17,842	9	6	33.33	11.11	22.22	—	—
Medford . . .	16,511	4	3	25.00	—	25.00	—	—
Newburyport .	14,915	6	3	—	—	—	—	—
Melrose . . .	14,032	2	—	50.00	50.00	—	50.00	—

Deaths reported 2,276; under five years of age 857; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 360, consumption 227, acute lung diseases 201, diarrheal diseases 186, diphtheria and croup 68, typhoid fever 49, whooping-cough 26, cerebro-spinal meningitis 16, measles 8, scarlet fever 6.

From scarlet fever New York 4, Providence and Washington 1 each. From whooping-cough New York 15, Boston and Washington 2 each, Baltimore, Pittsburg, Lowell, Lawrence, Taunton and Chicopee 1 each. From cerebro-spinal meningitis New York 9, Worcester 2, Boston, Washington, Lynn, Somerville and Fitchburg 1 each. From measles New York 7, Worcester 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending September 16th, the death-rate was 21.1. Deaths reported 4,617; acute diseases of the respiratory organs (London) 133, diarrhea 931, diphtheria 69, fever 61, whooping-cough 55, measles 39, scarlet fever 27, small-pox (Hull) 3.

The death-rates ranged from 13.5 in Croydon to 32.5 in Salford; Birmingham 25.2, Bradford 19.6, Cardiff 16.8, Gateshead 25.9, Huddersfield 17.6, Leeds 18.1, Liverpool 30.9, London 18.8, Manchester 26.2, Newcastle-on-Tyne 24.9, Nottingham 21.8, Portsmouth 18.6, Sunderland 29.4, West Ham 19.3.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 30, 1899.

C. E. **RIGGS**, passed assistant surgeon, detached from the "New York" and ordered home to wait orders.

E. S. **BOGERT**, passed assistant surgeon, ordered to the "New York," October 3d.

C. P. **KINDLEBERGER**, passed assistant surgeon, detached from the Philadelphia Naval Hospital and ordered to the "Iowa."

M. S. **GUEST**, passed assistant surgeon, detached from the "Wabash" and ordered to the Philadelphia Naval Hospital.

R. P. **CRANDALL**, passed assistant surgeon, detached from the "Iowa," and upon relief to proceed home and wait orders.

D. L. **WRIGHT**, assistant surgeon, ordered to additional duty on board the "Monterey."

T. A. **BERRYHILL**, surgeon, detached from the "Panther" when out of commission and ordered to the "Monongahela."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING SEPTEMBER 28, 1899.

MEAD, F. W., surgeon. Granted leave of absence for two days. September 28, 1899.

BLUE, RUPERT, passed assistant surgeon. Granted leave of absence for one month and eight days from October 6th. September 25, 1899.

TABB, S. R., assistant surgeon. To proceed immediately to South Atlantic Quarantine for temporary duty. September 23, 1899.

VON EZDORF, R. H., assistant surgeon. To proceed to Miami, Fla., for special temporary duty. September 25, 1899.

BILLINGS, W. C., assistant surgeon. Relieved from duty at New York, N. Y., and directed to report in person at the Bureau for temporary duty in charge of the Miscellaneous Division. September 28, 1899.

BAILEY, C. W., acting assistant surgeon. Granted five days' leave of absence. September 25, 1899.

WALKLEY, W. S., acting assistant surgeon. Granted leave of absence for four days. September 28, 1899.

COMFORT, N. C., hospital steward. To report at Bureau for orders. September 23, 1899. To proceed immediately to New York, N. Y., and report to Passed Assistant Surgeon H. D. **GEDDINGS** for assignment to duty in charge of the steamer "Wapiti" on her voyage from New York to Florida. September 25, 1899.

SOCIETY NOTICE.

MEDICAL SOCIETY OF VIRGINIA. — Thirtieth annual session of this Society will be held in the Roof Garden of "The Jefferson" Hotel, Richmond, Va., October 24, 25 and 26, 1899.

BOOKS AND PAMPHLETS RECEIVED.

Anæsthesia: Nitrous Oxide; Ether; Chloroform. By S. Ormond Goldan, M.D. Reprint. 1899.

Asepsis in Country and Private Practice: A New Sterilizer. By Hamilton Fish, M.D., Ouray, Colo. Reprint. 1899.

Involvement of the Eye and Ear in Cerebro-spinal Meningitis. By William Cheatham, M.D., Louisville, Ky. Reprint. 1899.

Case of Papilloma of the Ovary. The Conservative Treatment of the Myomatous Uterus. The Intrauterine Application of Chlorid of Zinc. Secondary Abdominal Pregnancy after Traumatic Rupture of the Uterus in the Fourth Month; Laparotomy; Recovery. The Bacteria Occurring in the Female Genital Canal and their Relation to Endometritis. The Opening of the New Lakeside Hospital. The Influence of Extirpation of the Ovaries upon Structural Changes in the Uterus. Irrigation with Salt Solution and Other Fluids in Surgical Practice. Infection after Abdominal Operations and its Treatment. The Treatment of Retrodisplacements of the Uterus. A Case of Endothelioma Lymphangiomatodes of the Cervix Uteri. By Hunter Robb, M.D., Cleveland, O. Reprints. 1897–98.

Original Articles.

THE EROSIONS OF THE CERVIX UTERI.[1]

BY F. H. DAVENPORT, M.D., BOSTON.

This may seem a trivial affection to be the subject of a paper before this Section, and in one sense it is. There are only two considerations which have induced me to choose it, one of which is my conviction that its importance has been underestimated, the other that I personally, and perhaps it may be true of the profession at large, know very little of its true significance and am often in doubt how to treat it. It is with the idea of contributing something to our knowledge of the symptomatology of the affection, and also with the hope that I may get some light on its treatment, that I present this paper.

First, as to the normal structure of the cervix. Even here pathologists are not in accord on all points, but the main general facts may be thus briefly stated: On the vaginal surface there is pavement epithelium covering and bridging over the papillæ. As we approach the os uteri, the epithelial layer grows thinner, and the papillæ become more prominent and the line of junction between the pavement epithelium and the cylinder epithelium lining the cervical canal often forms a distinct ridge, which was called the "hymen uterinus" by Künecke.[2] It is held by more recent observers that the change from one variety of epithelium to the other does not, even in normal uteri, occur always at a fixed point, but may take place anywhere from the os uteri to a point about a third of the distance up the canal.

Underlying the epithelial layer is elastic connective tissue, the fibres of which are intimately woven with the subjacent muscular fibres. From the larger arterial branches[3] numerous small vertical arterioles run towards the surface, and a capillary network surrounds each papilla.

The question as to whether glands are normally found on the vaginal surface of the cervix has been the subject of a good deal of controversy, and different observers hold quite divergent views. Wagner[4] found them throughout the whole of the cervix. Wedl[5] and Kolliker[6] did not find them in the neighborhood of the os externum. Friedländer[7] and Lott[8] found none below the arbor vitæ. Henle questions whether Wagner had not confounded the arterioles with the glands.

Klotz,[9] as the result of the examination of thirty cervices, comes to the conclusion that there are two extreme types of normal cervix, one without glands, and with the pavement epithelium extending high up in the cervix, the other rich in glands, with regular arrangement of the blood-vessels, and the pavement epithelium ceasing low down in the cervix. Between these there is every intermediate form. The intermediate forms were the most frequent, and those rich in glands less frequent than those without.

Ruge and Veit[10] doubt the occurrence of glands on the normal cervix, and consider that when found they are part of a pathological process.

Landau and Abel[11] show that at some time in fetal life the whole genital tract is covered with cylinder epithelium, which gradually changes in the vagina into the pavement variety. Sometimes this fails to be completed before birth, and we have the so-called congenital erosion. They believe that, without any irritating cause, cylinder epithelium may occur on the vaginal portion, either as a continuous ring around the os externum, or even in isolated patches. They are of the opinion that glands do not occur on the vaginal surface of normal cervices, but that cysts and follicles may, and that these may have been mistaken by other observers for true glands.

The changes which are found in erosions, and the method of their production, are variously explained. Klotz describes one form occurring principally in those cervices which are poor in glands, where there is merely an absence of the epithelium, and the free exposure of the papillæ. More common is the form which he calls glandular excrescence, where portions of the gland wall project into the cavity of the gland, and gradually emerge from the orifice in the shape of little reddish points. The accompanying swelling may easily lead to ectropion.

Fischel[12] describes three forms. From some injury, mechanical or chemical, or from some internal cause, a swelling of the mucous membrane occurs. The horny layer becomes thinner, the projections between the papillæ disappear, a large prominent papilla is formed, at the summit broken through and red, what I should call a granular erosion. As a second form, he describes those called by Klotz glandular excrescence, where portions of the gland wall project into the cavity of the gland. If the orifice becomes occluded, we have retention cysts, ovula Nabothi; when the cyst walls break down, follicular ulcerations. This form of erosion he calls adenomatous. The papillary erosion, which he describes as a third form, takes its origin in the glands of the cervix, or of the vaginal portion, usually accompanies ectropion, and may very possibly be a source of epithelioma.

Ruge and Veit explain all forms of so-called erosion or ulceration as different stages of one process. Any irritation affects first the cells of the rete Malpighi, they become larger and softer, and the pavement epithelium gradually disappears, leaving the surface covered with cylinder epithelium. This begins to grow down into the subjacent layers, at first solid, then hollow, forming the canals and follicles. In other words, there is a real new gland formation, proceeding from the rete Malpighi itself.

Landau and Abel say that the pathological changes in erosions consist, in their simplest forms, of small-cell infiltration of the stroma, and a thinning of the layer of pavement epithelium, the so-called simple erosion. In a second form the stroma is studded with follicles or crypts, the surface thrown into folds and covered with cylinder epithelium. If glands are found, they are a direct continuation of the cervical glands, and occur only near the os externum.

So much for the histological and anatomical explanation of so-called erosions. The attempt to divide the forms according to the minute histological characteristics seems to result in so much confusion, and to lead one so far, that for practical purposes I prefer a simpler division. Clinically I meet with two forms, one associated with and following endocervicitis, the other not. In the first form the inflammation of the lining membrane of the cervical canal is the primary factor. The erosion develops later. It is at first perhaps an ectropion, a hypertrophy and prolapse of the cervical mucous membrane, a condition which I am sure is often mistaken for erosion. But if the process stops here no erosion occurs, and in many cases it is so limited. Under treatment the hypertrophied and congested membrane shrinks and is withdrawn into the cervical canal. In some cases however an erosion develops. Surrounding the ecropion is a zone of red, angry looking tissue, dotted here and there with bright red points, slightly raised above the level of the cervix and covering a space from the size of a dime to a quarter of a dollar. The essential factor which characterizes this class of cases is the antecedent and accompanying endocervicitis. This is clearly demonstrated by the history and by the appearance on examination.

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[1] Read before the Suffolk District Medical Society, Section for Obstetrics and Diseases of Women, March 22, 1899.

[2] Die vier Factoren der Geburt, Berlin, 1859, p. 165.

[3] Henle: Anatomie, ii, p. 163.

[4] Arch. f. Phys. Heilk., 1856, p. 504.

[5] Grundz. d. Path. Hist., 1854, p. 500.

[6] Microscop. Anat., 1855, p. 446.

[7] Physiolog. Untersuch. über den Uterus, 1870, p. 43-49.

[8] Anat. und Physiolog. d. Cervix Uteri, 1872, p. 13.

[9] Veränder. an Port. Vag., 1879.

[10] Zeit für Geb. und Gyn., Band ii, p. 415.

[11] Archiv für Gyn., 1890.

[12] Ein Beitrag zur Histol. der Erosionen der Port. Vag. Uteri. Archiv für Gyn., Band xv.

The second form of erosion that we find clinically differs from the one I have described in that so far as the appearances are concerned there is no endocervicitis. The patient does not complain of any discharge, nor on examination can any amount of mucus be seen coming from the cervix. The erosion does not differ from the first form except that it is apt to be more angry looking and the papillæ are more prominent. In my experience it has been more often associated with an anteflexion of the uterus where there is a conical cervix than is the first variety. The patients are apt to be of a neurotic type, or else those who have recently been under an unusual nervous strain. If I may generalize from a moderate number of cases, I should say that the symptoms were more distinctly general in character than local; not that there are no local symptoms, but that they are overshadowed by those general in character, which are also largely reflex. It would follow as a corollary of this proposition that the essential factor back of this form of erosion is the state of the general health, and this I conceive to be the case. The first form is secondary to a pre-existent disease of the cervical canal. The second form is associated with a condition of the vital forces and is in many cases an index of the state of the health of the patient.

On examination we are apt to find a general hyperesthesia of the pelvic organs; the examining finger will cause pain when pressure is made upon the cervix or in either of the culs-de-sac, and that pain will sometimes last for hours after such examination has been made. Moderate pressure seems to cause as much disturbance as deeper pressure, nor can the examiner detect that any particular organ is more sensitive than another. Any treatment, however simple, is followed by a feeling of distress or actual pain, which may last for some time. This condition of extreme sensitiveness varies at different times. The examination may be one day excessively painful and at another time comparatively painless. The time of the month seems to have a certain bearing upon this affection. As the menstrual period approaches, and the pelvic organs become more congested, there is apt to be more pain. So, too, at the middle of the intermenstrual period there is a day or two when the symptoms are aggravated and, in passing, I may say that I believe close questioning of our patients will reveal a much more general occurrence of symptoms at the intermenstrual epoch.

The local symptoms of both forms are, in the first place, backache (which I am of the opinion holds a very definite relation to any affection of the cervix uteri), and, in the second place, a feeling of irritation low down in the pelvis without differentiation on the part of the patient, and which cannot be accurately located by her. These are almost the only local symptoms of which the patient will make complaint. Of course, in the first form we have in addition the symptoms which are characteristic of the accompanying endocervicitis.

The general symptoms vary greatly with the individual; it would be impossible to enumerate them in detail here, and it is hardly necessary, inasmuch as it is not claimed that they are directly the result of the erosion, but merely associated with it. They are the Protean forms of neurasthenia or poorly regulated nerve action, as shown in head symptoms — headache and neuralgia, trouble with the eyes, impaired mental activity, symptoms referable to the digestive system, or those associated with circulatory disturbances. The sequence of events is often the following: The patient becomes run down nervously from some overstrain or overwork and at varying length of time there will begin to be local disturbances. On examination the only pelvic pathological condition found will be an erosion. The question then arises what bearing the erosion has upon the general condition of the patient, and what should be our course of treatment. This brings us to the question of the treatment of erosions in general. As regards the first form, that associated with an inflammation of the lining membrane of the cervix, the most natural course would be to direct our efforts to the care of the initial lesion, namely, endocervicitis. As will be very well recognized by all of you who have had any experience in gynecological work, this is by no means so easy as it sounds. The milder forms of treatment which have been recommended ever since there was any attempt at the treatment of these affections will prove in the majority of cases of little avail. Applications to the diseased surface of iodine or the stronger mixtures, or even carbolic or nitric acid, will often leave one in the lurch. Even curetting will ofttimes prove of very little value; still this is the most effectual means that we have at present, and where it is possible this more heroic form of treatment should be employed. Sometimes with the cure of the endocervicitis the erosion will disappear; again it will persist even though the cervical canal is made healthy. For such obstinate cases I have a method of treatment to propose, which also applies to the next class, and which I will describe later.

The history of the second class leads naturally to the proposition that, inasmuch as this form is either secondary to, or intimately associated with, the condition of the nervous system generally, our measures of relief should be directed to the building up of the nerves, with the expectation that with an improved condition of the nervous system the local lesion will improve as well. This does not always follow. It must have been within the experience of you all to have had cases where an affection which was clearly secondary in its appearance, assumed so much importance in the production and keeping up of symptoms, that it either overshadowed the primary affection or completely neutralized the attempts at building up the general health. I have seen this follow other gynecological affections, such as laceration of the cervix or of the perineum, which remained dormant as regards symptoms for a number of years, and then, with a deterioration of the general health, caused so many local and general symptoms, that only after its repair could a fair start be made towards the restoration of the nervous system. This, I am sure, is what often happens in these cases. Erosions slight in appearance will yet at times assume an importance which imperatively demands that they should be relieved, before any permanent state of health can be attained. For this reason all cases must be carefully analyzed. In a certain proportion the local treatment may be omitted entirely. If the general health is looked after the erosion will keep pace with the improvement of the nervous system and will gradually disappear. Another contingent of cases will demand local treatment. I must confess to a feeling of skepticism, of almost hopelessness, as regards the effect of local applications on these erosions of the neurotic type, if I may so call them. Iodine, various powders, such as oleate of zinc, ichthyol, antiseptic washes, glycerin tampons, have all, at times, proved useless in my hands. Perhaps the one remedy which has given me the best results is a weak solution of nitrate of silver painted over the surface of the diseased membrane. A solution of nitrate of silver, from five to fifteen grains to the ounce, according to the sensitiveness, seems to me not only to promote healing but to have at the same time a benumbing effect upon the pain. In these cases I avoid the use of the glycerin tampon, which seems to me a little harsh. Many cases, however, will fail to be improved by these applications, and for these I am more and more inclined to perform a simple operation.

All of you have undoubtedly seen cases of erosion where there was a good deal of hypertrophy of one or both lips, which so nearly simulated a laceration of the cervix that only the absence of any history of pregnancy made the diagnosis sure. The natural thought in considering treatment for such cases is to operate as for a laceration, and a number of cases are on record where this has been done. I have seen several such cases myself and it seems to me that this principle might be extended further so as to embrace a large number of cases, even those without much hypertrophy. A thin layer of the diseased mucous membrane can be removed from the cervix without any great loss of tissue, and the raw surfaces united so as to restore the vaginal surface of the neck of the uterus to its natural state. It is a simple operation and, in my judgment, and I think in the opinion of many patients, a preferable course to weeks or months of uncertain local applications. I have done this several times and the results have been very gratifying. Even this, however, is no safeguard against a return of the trouble, as was demonstrated to me by a case in my own practice. I had a patient who had been under my care for several years with a simple misplacement of the uterus. After a period of unusual nervous strain she complained of certain indefinite symptoms of irritation and discomfort in the region of the womb, and on examination I found an erosion. There was a certain amount of hypertrophy, and I operated as for a lacerated cervix. There was an immediate cessation of the nervous symptoms — a state of things which lasted for about two years. She then returned to me saying that from her symptoms she felt sure that there had been a return of the trouble, which on examination I found to be the case. A second trachelorrhaphy was performed, and the patient since then, now five years, has remained free from symptoms.

It will be seen from what I have said, that my experience with minor forms of treatment for erosions of the cervix has led me to be rather pessimistic as to their value. At the same time, it will be recognized from what I have said that I do not consider them the innocent or simple affairs which many I am sure do. I believe that they have a marked influence upon the nervous system of delicate women, and that something should be done for their relief. In order to attain better results than I can by applications, and in many cases by attention to the general health, I am more and more inclined to treat these cases by operation.

I shall gladly welcome any suggestions from others who have been able in simpler ways and more frequently to cure these troublesome afflictions.

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THE TREATMENT OF CEREBRAL TUMORS.[1]

BY PHILIP COOMBS KNAPP, A.M., M.D., BOSTON,

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(Continued from No. 14, p. 337.)

Having thus considered the general results of attempts at removal of cerebral tumors, two secondary questions arise as to the effect that the location and the nature of the growth have upon the operation.

It is true, as Oppenheim and Bruns have said, that the question of the operative treatment of cerebral tumors is primarily the question of tumors in the Rolandic region, but Bergmann[24] goes somewhat farther in maintaining that we should operate only on tumors in the Rolandic region, and not on cerebellar growths. The distinction between tumors in the prefrontal, central and parietal regions is not quite easy to make from the reports of cases, since a good-sized tumor may lie between two regions, and may be classed as belonging to either (Table VIII). I have classed 9 cases as prefrontal, with 7 operative recoveries and 2 deaths, 192 as central, with 138 operative recoveries and 52 deaths, and 10 cases as parietal, with 8 operative recoveries and 2 deaths, so that the prefrontal and parietal regions seem as suitable for operation as the central itself. Operations in other parts of the cortex also disprove Bergmann's assertion. In 7 cases of tumor of the temporal region only 3 resulted fatally, and the statistics of abscess operations show that there is no special reason to shrink from operating on that region. In 6 cases of tumor of the occipital lobe there were 3 operative recoveries and 2 deaths, which shows that this last region may also be attacked under suitable conditions. Tumors of the central region are probably much more common than tumors elsewhere in the cerebral cortex, and the symptoms to which they give rise are usually much more definite and permit a much more exact diagnosis; hence such tumors have formed and will continue to form the chief number in operative cases, but there is no *a priori* reason why, if the diagnosis can be made, tumors in other regions of the cortex should not be operated on, and the statistics show that such operations may be attended with a fair share of success.

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[1] Read before the Section of Neurology of the American Medical Association at Denver, June, 1898, and before the Surgical Section of the Suffolk District Medical Society, November 3, 1898.

[24] Neurolog. Centralblatt, xvi, p. 920, 1897.

TABLE VIII.

TWO HUNDRED AND NINETY REMOVALS AND PARTIAL REMOVALS CLASSIFIED ACCORDING TO THE LOCATION OF THE GROWTH (INCLUDED IN TABLE V).

Region.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Total.
Prefrontal	5	2					2	9
Central	43	57	6	30	2	2	52	192
Parietal	2	3	1	1	1	0	2	10
Temporal				3		1	3	7
Occipital	1	1			1	1	2	6
Cerebellar	1	6		3			8	18
Not stated	18	3	1		2	11	13	48
Total	70	72	8	37	6	15	82	290
Ferrier's cases of removal	6			8		3	3	20

Prefrontal tumors.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Nature of growth.
Previously collected, 3. Knapp. Op cit.	2						1	
Carle. Revue de Chirurgie, February, 1899	1							Sarcoma.
Devic and Courmont. Revue de Médecine, April, 1897		1						Glioma.
Doyen. Cong. Français de Chirurgie, 1891	1							Cyst.
Obici. Il Policlinico, ii, 6, 1895	1							
Thomas and Keen. American Journal of Medical Sciences, November, 1896		1						Sarcoma.
Verco. Transactions Intercolonial Medical Congress of Australasia, 1893, p. 383							1	Hydatid.
Central tumors.								
Previously collected, 29. Knapp. Op. cit.	16	1	2	3		1	6	
Abbe. Presse médicale, November 13, 1895	1							
Abrams and Tait. Occidental Medical Times, June, 1896							1	Sarcoma.
Adenot and Carrier. Archiv. prov. de Chir., March, 1889		1						Glioma.
Albertoni and Brigatti. Rev. Sper. di Fren., xix, 1, 1895		1						Glioma.
Anderson, Buchanan and Coats. British Medical Journal, March 14, 1891	1							Sarcoma.
Annandale. Edinburgh Medical Journal, i, 899, 1894	1							Sarcoma.
Armstrong. Montreal Medical Journal, May, 1896	1							Cyst.
+ Back and Bernays. Medical Record, March 22, 1890							1	Glioma.
+ 8 Ballance. Medical Chirurgical Transactions, lxxix, 167, 1896				1				Sarcoma.
Bartlett. Hahnemann Monthly, May, 1890							1	“
Beck. In Auvray. Les Tumeurs Cérébrales, p. 251	1							“
+ Beck. “ “ “ “ “							1	Glioma.
Beck. “ “ “ “ 252	1							Cyst.
3 + Von Beck. Beitr. zur. klin. Chirurgie, xii, 1				1				Glioma.
Beevor and Ballance. British Medical Journal, i, 5, 1895		1						Sarcoma.
Von Bergmann. Die chirurg. Behandlung von Hirnkrankheiten, p. 128, 2d ed.							1	Cyst.
+ Bird. Australasian Medical Journal, December 15, 1893		1						Glioma.
Bonhœffer. Monats. f. Psych., April, 1898				1				Glioma.
+ Booth and Curtis. Annals of Surgery, February, 1893				1				Tubercle.
Von Bramann and Hitzig. Arch. f. klin. Chir., xlv, 365		1						Sarcoma.
+ 4 Von Bramann and Hitzig. “ “ xlv, 1893				1				Sarcoma.
Braymer. Charlotte Medical Journal, November, 1896		1						
Bremer and Carson. American Journal Medical Sciences, February, 1895							1	Endothelioma.
+ Broca and Maubrac. Arch. gén. de Méd., February, 1896		1						
+ Brugelius and Berg. Hygiea, lvi, 529, 1894				1				Glioma.
Bruns. Neurolog. Centralbl., xiv, 125							1	Angioma.
Bruns. Die Geschwülste des Nervensystems, p. 226							1	Sarcoma.
+ Bruns. “ “ “ p. 227							1	Sarcoma.
Carhart and Bernays. Transactions Texas State Medical Association, xxiv, 203, 1892		1						
Chisholm. In Graham. Hydatid Disease							1	Hydatid.
Chisholm. Australasian Medical Gazette, p. 38, 1893							1	Cyst.
Cleghorn. New Zealand Medical Journal, vi, 14, 1893		1						
+ 3 Cleghorn. “ “ “ vi, 255, 1893					1			Glioma.
+ 3 Cleghorn. Transactions Intercolonial Medical Congress, Australasia, 1892			1					Sarcoma.
+ Colquhoun. New Zealand Medical Journal, iii, 231, 1890		1						Sarcoma.
Cornil and Doyen. Bull. de la Soc. Anat. de Paris, November, December, 1897				1				Tubercle.
2 Crowley. Transactions Medical Society of the State of California, xxviii, 197, 1898				1				Sarcoma.
Czerny. Münch. med. Wochenschr, No. 11, 1896		1						“
Dallas and Mongeri. Gaz. méd. de l'Orient, 1897							1	“
+ Dana and Conway. New York Medical Journal, i, 773, 1895		1						“
Davenport. Australasian Medical Gazette, p. 315, 1892							1	Hydatid.
Diller and Buchanan. American Journal of Medical Sciences, July, 1893		1						Cyst.
Dinkler. Neurolog. Centralblatt, xvi, 611, 1897							1	Fibroma.
Doyen. Arch. f. klin. Chirurg., lvii, 876, 1898	1							Cyst.
Dreyfus. Lyon Médicale, lxxxviii, 195, 1898				1				Gumma.
Duncan and Maylard. Glasgow Medical Journal, April, 1897		1						Sarcoma.
Escher. Lancet, i, 1,444, 1891							1	Hydatid.
2 Elliot. Boston Medical and Surgical Journal, June 3, 1897				1				Glioma.

TABLE VIII. — (Continued.)

	Central tumors.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Nature of growth.
+ 2	Erb. Deutsch. Zeitschr. f. Nervenheilk., ii, 414, 1892			1					Glioma.
	Eskridge and Parkhill. Medical News, August 1, 1896		1						Cyst.
	Eskridge and Parkhill. " " September 5, 1896		1						Angioma.
	Esteves. Semana Medica, May 17, 1894	1							Hydatid.
	Friedländer and Schlesinger. Wiener klin. Wochenschr., January 21, 1898		1						Gumma.
	Fürstner. Archiv f. Psych., xxiv, 634							1	Glioma.
	Gajkiewicz. Gaz. lek., Nos. 2 and 3, 1895	1							Gumma.
	Gibson. Edinburgh Medical Journal, February, 1896		1						Glioma.
+ 2	Graser. Arch. f. klin. Chir., l, 901, 1895							1	Sarcoma.
	Gray. Nervous and Mental Diseases, second edition, p. 336							1	Glioma.
	Grisson. Neurolog. Centralblatt, xvii, 1,138, 1898	1							Cyst.
	Hassler. " " xvi, 1,068, 1897		1						
	Henschen. Mittheil. aus d. Grenzgebieten d. Med. u. Chirurgie, iii, 287, 1898.				1				Cyst.
	Henschen. " " " " "		1						
	Henschen. Klin. u. anatom. Beiträge z. Pathologie des Gehirns, iii, 194				1				Sarcoma.
+	Henschen. " " " " 214			1					Glioma.
	Hermanides. Operative behandeling van hersengezwellen, 1894							1	Sarcoma.
+	Hirschl. Neurol. Centralblatt, xv, 609, 1896		1						Sarcoma.
	Hitzig. Therapeut. Wochenschr., Nos. 19, 20, 1896							1	
	Horsley. Lancet, December 1, 1894				1				
	Jaboulay. Arch. prov. de Chirurgie, ii, 61, 1893		1						Fibroma.
	Jeannel. La Semaine méd., xi, 119, 1891		1						
	Jones. Medical Sentinel, v, 603						1		
	Jones and Moore. Northwestern Lancet, p. 316, 1891	1							
	Kappeler. Deutsch. Zeitschr. f. Chir., xl, 500, 1895		1						Endothelioma.
+	Keen. American Journal of Medical Sciences, cii, 231							1	Glioma.
	Kirschfink. Ueber Trepanation bei Hirntumoren	1							Cyst.
	Koehler. Charité-Annalen, xvii, 329, 1892							1	Sarcoma.
	Kosinski. Medycyna, xxvi, 1, 1898	1							
+	Krauss. New York Medical Journal, July 30, 1898							1	Glioma.
	Krauss. " " "							1	Sarcoma.
	Krönlein. Beiträge z. klin. Chir., xv, 251, 1895		1						Tubercle.
	Landerer. Med. Corr. Blatt. des Würtemb. ärzt. Landesvereins, lxvi, 369, 1896		1						Tubercle.
	Lanphear. Journal of the American Medical Association, December 19, 1891		1						Osteoma.
	Lanphear. " " " April 27, 1895		1						Angioma.
	Lanphear. " " " May 4, 1895	1							
	Lanphear. " " " May 4, 1895							1	Cyst.
	Laviston. Reference in Revue Neurologique, ii, 309, 1894				1				Cancer.
	Le Dentu. In Auvray. Op. cit., p. 316	1							Gumma.
	Llobet. Revue de Chirurgie, p. 970, 1892		1						Hydatid.
	McBurney and Starr. American Journal of Medical Sciences, April, 1893							1	Sarcoma.
+ 2	Mareau. Archiv. méd. d'Angers, i, 212, 1897		1						
2	Maylard. Glasgow Medical Journal		1						Sarcoma.
	Meyer. Annals of Surgery, xxvii, 770, 1898		1						Cyst.
	Mills and Keen. American Journal of Medical Sciences, December, 1891					1			Sarcoma.
	Morse. Pacific Medical Journal, p. 217, 1891							1	Sarcoma.
	Mudd. American Journal of Medical Sciences, i, 412, 1892	1							Hydatid.
	Mugnai. Riforma Medica, July 15, 1891							1	
	Murray. Lancet, March 16, 1895	1							Sarcoma.
	Mya and Codivilla. Il Policlinico, March 1, 1894		1						Hydatid.
	Nason. Lancet, May 25, 1895							1	Cyst.
	Nedwill. Lancet, i, 1,466, 1898		1						Hydatid.
+	Nixon. British Medical Journal, ii, 1,276, 1893							1	Enchondroma.
	O'Hara. Intercolonial Quarterly Journal of Medicine and Surgery, i, 48, 1894	1							Hydatid.
	Oliver and Williamson. British Medical Journal, November 26, 1898		1						Angioma.
	Oliver and Williamson. " " "			1					Sarcoma.
	Parry. Australasian Medical Gazette, August, 1892							1	Hydatid.
	Pauly and Clement. Comptes Rendus de la Soc. des Sciences Méd. de Lyon, xxxiii, 3, 1894							1	Cyst.
	Péan. La Semaine Méd. No. 31, 1891	1							Angioma.
	Pel. Berlin. klin. Wochenschr., January 29, 1894							1	Fibroma.
	Poirier. Memoires de 6me Cong. français de Chir., p. 633, 1892		1						Angioma.
3	Post. Unpublished							1	Cyst.
	Postempski. Atti del XI Congresso Med. Internaz., iv, 20		1						Sarcoma.
2	Putnam and Richardson. Boston Medical and Surgical Journal, February 9, 1899.				1				Sarcoma.
	Reynier. Cong. français de Chir., v, 110, 1891		1						Glioma.
2	Riegner. Deutsch. med. Wochenschr. p. 497, 1894.	1							Sarcoma.
+	Rose. Medical Press and Circular, i, 175, 1894		1						Sarcoma.
+ 3	Rossolimo. Deutsch. Zeitschr. f. Nervenheilk., vi, 76, and Archiv f. Psych., xxix, 528				1				Glioma.
2	Roth. Deutsch. med Wochenschr., No. 25, 1895	1							Cancer.
	Sacré. Jour. de Méd. et de Chir. pratique de Bruxelles, p. 738, 1890.	1							Hydatid.
	Schlesinger. Wiener klin. Wochenschr., January 21, 1898		1						
	Schnitzler. Centralbl. f. d. ges. Therapie, xvi, 65, 1898.							1	Tubercle.
	Von Schrötter. Cong. des Chirurg. Polonais, 1892	1							
	Schultze. Deutsch. Zeitschr. f. Nervenheilk., ix, 217							1	Sarcoma.
+	Schultze. " " " "							1	Glioma.
	Schwartz. Bull. Soc. de Chirurgie, xxi, 221, 1894							1	Tubercle.
	Sciamanna and Postempski. Archiv. di Psichiatria, xii, 461, 1891		1						Endothelioma.
+	Shaw and Bush. Bristol Medical and Chirurgical Journal, ii, 99, 1895				1				Sarcoma.
	Sick. Deutsch. med. Wochenschr., No. 2, 1897		1						Tubercle.
3	Sinkler. Transactions of the American Neurological Association, 1896							1	
	Söderbaum. Upsala Läkareför. Förhandl., xxvi, 68, 1890-91		1						Cyst.
+	Springthorpe. Australasian Medical Journal, p. 518, 1893				1				Sarcoma.
+ 2	Starr. Medical Record, i, 145, 1896				1				Cyst.
	Starr. British Medical Journal, October 16, 1897							1	Glioma.
	Starr. " " "							1	Cyst.
	Steele. Journal of the American Medical Association		1						
	Stewart. Pittsburgh Medical Review, November, 1892							1	Cyst.
2	Stieglitz. Transactions of the American Neurological Association, 1895	1							Glioma.
2	Stieglitz and Gerster. American Journal of Medical Sciences, June, 1893		1						Cyst.
2	Stratton and Crowley. Pacific Medical Journal, xli, 282, 1898				1				Sarcoma.
	Sweeney. Northwestern Lancet, xiv, 261, 1894		1						Cyst.
	Syme. Australasian Medical Journal, p. 60, 1895	1							Sarcoma.
	Tauber. Archiv. di Psich. Russ., xxvii, 1, 1896				1				
+ 2	Taylor and Elliot. Boston Medical and Surgical Journal, 1896							1	Endothelioma.

TABLE VIII. — (Continued.)

	Central tumors.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Nature of growth.
	Taylor. Transactions of the Ophthalmic Society, London, xiv, 105, 1894	1							
+ 2	Taylor. " " " " "				1				
	Taylor. " " " " "				1				
+ 2	Taylor " " " " "				1				
	Taylor. " " " " "				1				
	Taylor. " " " " "				1				
	Terrier and Broca. Cong. de Chirurg. Franç., 1891		1						Cyst.
	Tietze. Centralbl. f. Chirurg., p. 850, 1893		1						Hydatid.
	Troje. Deutsch. med. Wochenschr., p. 103, 1894	1							Hydatid.
	Van Wayenburg. Psych. en Neur. Bladen, ii, 109, 1898		1						Sarcoma.
2	Vierordt and von Beck. Fortschr. d. Med., p. 493, 1894; and Beiträge z. klin. Chirurg., xii, 1		1						Tubercle.
	Washburn and Lane. Transactions of the Clinical Society, London, xxx, 154, 1897,		1						Endothelioma.
+	Webster. Canada Practitioner, xx, 813, 1895		1						Sarcoma.
+	White. Lancet, ii, 1,280, 1891					1			Sarcoma.
+	Wiener. New York Medical Journal, October 15, 1898						1		Glioma.
+ 2	Winkler. In Chipault. Trav. de Neur. Chir.		1						"
+	Winkler. Bijdrage tot de Hersen Chirurgie							1	"
	Winkler. " " "							1	
+ 2	Wood and White. University Medical Magazine, January, 1895		1						"
	Ziehen. Zeitschr. f. prakt. Ærzte, No. 5, 1898							1	Sarcoma.
2	Ziehl and Roth. Deutsch. med. Wochenschr., No. 19, 1897		1						Sarcoma.
	Parietal tumors.								
	Previously collected, 2. Knapp. Op. cit.	1	1						
+	Von Beck. Beiträge z. klin. Chir., xii, 1							1	Glioma.
	Colman and Ballance. Transactions of the Clinical Society, London, xxix, 120, 1896				1				"
+	Eskridge and Parkhill. Medical News, July 11, 1896		1						"
	Fitzpatrick. Australasian Medical Gazette, p. 581, 1894							1	Hydatid.
	McCosh. American Journal of Medical Sciences, May, 1898		1						Angioma.
	Senenko. St. Petersb. med. Wochenschr., xiv, 51, 1889			1					
	Starr. American Journal of Medical Sciences, November, 1894	1							Angioma.
	Starr. British Medical Journal, October 16, 1897					1			Fibroma.
	Temporal tumors.								
+	Barr and Nicoll. British Medical Journal, October 16, 1897				1				Sarcoma.
+	Bruns. Neurolog. Centralblatt, xii, 386, 1893				1				"
+	Bruns. Die Geschwülste des Nervensystems, p. 226						1		"
+	Nicoll. Lancet, October 29, 1898				1				"
	Sommer. Jahrbücher f. Psych., xii, 32, 1893							1	Endothelioma.
	Stewart. Northwestern Lancet, May 15, 1897							1	Sarcoma.
+	Winkler. Bijdrage tot de Hersen Chirurgie							1	Glioma.
	Occipital tumors.								
	Previously collected, 1. Knapp. Op. cit.							1	
	Bartlett and Van Lennep. Hahnemann Monthly, April, 1894		1						Sarcoma.
	Bullard and Bradford. Unpublished	1							Angioma.
	Hirsch. Ein Beitrag zur Chir. d. Occipitalhirns							1	Sarcoma.
	Kocher. Corr. Bl. f. Schweiz. Ærzte, July 1, 1897						1		Osteoma.
	Rodgers. Times and Register, ii, 343, 1888					1			Glioma.
	Cerebellar tumors.								
	Previously collected, 5. Knapp. Op. cit.		2					3	
+ 2	Collins and Brewer. Medical Record, May 15, 1897				1				Tubercle.
	Gibson. Edinburgh Medical Journal, February, 1896		1						Sarcoma.
2	Guthrie. Practitioner, lxi, 69, 1898		1						Cyst.
	Hermanides. Operative behandeling van hersengezwellen, 1894							1	Sarcoma.
	Macewen. British Medical Journal, ii, 1,367, 1893				1				Tubercle.
2	Moran and Kerr. Virginia Medical Semi-Monthly, July 23, 1897				1				Cyst.
+	Munn. International Journal of Surgery, 40, 1895.							1	Glioma.
+	Murri. Lancet, January 30, 1897		1						Sarcoma.
	Parkin. British Medical Journal, December 19, 1896	1							Glioma.
+	Parry. Glasgow Medical Journal, ii, 36, 1893							1	Tubercle.
	Pershing Medical News, March 26, 1898							1	Glioma.
	Starr. Brain Surgery, 247, 1893							1	
	Stewart and Annandale. Edinburgh Hospital Report, 127, 1895		1						Sarcoma.
	Location not stated.								
	Previously collected, 6. Knapp. Op. cit.	2						4	
	Annandale. Edinburgh Medical Journal, p. 936, 1894					1			Cyst.
	Beevor. British Medical Journal, August 6, 1898	4							
	Bieganski and Wrzesniowski. Medycyna, xxiv, 1,045, 1896							1	Sarcoma.
	Von Bramann. 24te Cong. deutsch. Chirurg.	1							
	Felkin. Edinburgh Medical Journal, p. 1,031, 1894	1							Cyst.
	Gussenbauer. Prag. med. Wochenschr., p. 99, 1893						1		Sarcoma.
	Harrison. British Medical Journal, ii, 1,367, 1893							1	Gumma.
	Harrison. " " "	1							Gumma.
	Hingston. New York Medical Journal, ii, 313, 1891	1							Hydatid.
	Hitzig. Mittheil. aus d. Grenzgebiet. d. Med. u. Chirurgie, iii, 365							1	Cyst.
	Horsley. British Medical Journal, ii, 1,366, 1893			1					Gumma.
	Kosinski. Obozr. psichiat., ii, 699, 1897						1		
	Lanphear. Journal of American Medical Association, April 27, 1895	3							

TABLE VIII. — (Continued.)

Location not stated.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later	Not improved	Not stated	Died.	Nature of growth.
Lundmark. Upsala Läkarefor. Förhandl , iii, 573, 1898					1			Cancer
Lundmark. " " "							2	
O'Hara. Australasian Medical Gazette, xvii, 57, 1898	1							Hydatid.
Postempski. Boll. della R. Accad. Med. di Roma, xix	1							Sarcoma.
Rebensburg. Casuistische Beiträge zur chir. Behandlung v. Gehirntumoren, 1867,	1						4	
Richardson Journal of Nervous and Mental Diseases, xx, 535		1						
Sacré. Jour. de Méd. Chir. et Pharm. de Bruxelles, p. 738, 1890	1							Cyst
Vance. Australasian Medical Gazette, February 21, 1898		1						Hydatid.
Waterhouse. British Medical Journal, August 6, 1898	3	1				6		
White. Lancet, ii, 1,281, 1894	1							

The only remaining region of the brain accessible to the surgeon is the cerebellum. In rare instances, of course, growths may arise from the base of the skull and extend into the frontal or temporal lobes, but such growths symptomatically must be classed with tumors of these lobes. From the extreme difficulty in gaining access to the cerebellum, from the great danger of injuring vital regions in the neighborhood, in the pons and medulla, and from the uniform fatality attending the first attempts to remove cerebellar growths, many writers have questioned or even denied the propriety of making any attempts to operate in this region. Subsequent statistics have rendered this prohibition unwarranted. In 18 operations there were 10 operative recoveries and 8 deaths. Three of the recoveries died later from a recurrence of the growth, 6 were reported as improved, and one is said to have recovered. In the cases collected by Ferrier 4 were removals of cerebellar growth, of which one died, one lived from one to ten months, one lived over a year, and in one case the result was not known. The operation is clearly more dangerous than for a tumor in the Rolandic region, the diagnosis is also much more uncertain, but the results are favorable enough to warrant the undertaking, provided there be any indication that the symptoms are increasing and that the growth is not becoming quiescent.

TABLE IX.

One Hundred and Sixty-five Cases of Complete Removal, Classified According to the Nature of the Growth.

Nature of growth.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Total.
Angioma	4	5					1	10
Carcinoma	1			2				3
Cholesteotoma	1							1
Cyst	10	9		2			9	30
Endothelioma		3					2	5
Fibroma	3	1			1		2	7
Glioma (including gliosarcoma)	2	5		3	1		3	14
Gumma	5	2	1	1			1	10
Hydatid	9	6					8	23
Osteoma		2				1		3
Sarcoma	9	12	1	5	1	1	16	45
Tubercle	3	4		2			5	14
Total	47	49	2	15	3	2	47	165

With regard to the nature of the growth we are at once confronted with a difficulty. Our ability to diagnosticate the existence of a brain tumor or even its exact situation may be fairly good, but our ability to diagnosticate the nature of the growth must be regarded as distinctly poor. More than one case of glioma, for example, has been recorded where the patient has had syphilis, or even purulent otitis, so that the physician has suspected gumma or abscess. Our diagnostic skill is not yet sufficiently exact to enable us to say concerning two tumors in the same region, "This is a fibroma: operate. The other is a gumma; let it alone;" and in the majority of cases we cannot even make a probable guess. The discussion of whether to operate on gummata and tubercular growths is therefore somewhat aimless. The only rule that we can lay down is that when we have evidence of malignant disease elsewhere in the body, as in two cases recently under my observation, we should refrain from attacking the growth in the brain. Nevertheless, as the operative treatment of gumma and tubercle has been the subject of much discussion, it is worth while to consider the statistics (Tables IX and X).

TABLE X.

Fifty-two Cases of Partial Removal, Classified According to the Nature of the Growth.

Nature of growth.	Recovered.	Improved.	Improved. Worse later.	Improved. Died later.	Not improved.	Not stated.	Died.	Total.
Cyst				1				1
Enchondroma							1	1
Endothelioma							1	1
Glioma		4	3	5	1	1	13	27
Gumma							1	1
Sarcoma		6	2	7	1	1	1	18
Tubercle				2			1	3
Total		10	5	15	2	2	18	52

(To be continued.)

Hospitals Not Liable for Damages for Unauthorized Autopsy. — We learn from the *Medical Record* that a Philadelphia judge, in refusing a new trial in a suit for damages against the German Hospital, has decided that as a public charity, possessed of no funds except such as have been contributed by the charitably disposed for the furtherance of its philanthropic purposes, the diversion of its assets to compensate for injuries inflicted or occasioned by the wrongful acts of its agents or servants would be against all law and all equity.

Clinical Department.

RESECTION OF THE CECUM AND A PORTION OF THE ILEUM FOR CARCINOMA.[1]

BY FREDERICK WILLIAM JOHNSON, M.D., BOSTON.

M. L., sixty-five, widow, entered the St. Elizabeth's Hospital March 6, 1899. Her mother died of strangulated hernia. Patient had always enjoyed good health up to one year ago. Married thirty-four years and has had five children. Menopause fifteen years ago. There has been loss of strength and flesh during the past year. Though always pale, the pallor has noticeably increased during the past few months. Bowels somewhat constipated. Appetite good. No pain in the abdomen. Urine, sixty ounces in twenty-four hours; specific gravity 1,017; no albumin, no sugar.

Physical examination. — Left inguinal hernia. Just above McBurney's point there was a mass which felt the size of a cocoanut. This mass was nodular, movable, and sensitive on pressure. There was also a rectocele protruding through the vulva and external hemorrhoids.

An incision was made directly over the tumor. After about half an hour's work in separating adhesions and adherent intestines it was found that the condition was one of malignant disease of the cecum in the neighborhood of the ileo cecal valve. Several inches of the intestines were resected, removing all the cecum and a few inches of the ileum. The cut end of the colon was closed in the usual way, thus making another cecum. Into this new cecum, at about one inch from the end, a button-hole was cut. Into this the ileum was drawn for an inch by traction threads and there fastened with silk. The omentum was carefully spread around the anastomosis and gauze drain was put in. The sequel proved that the gauze was not needed. A few enlarged mesenteric glands were found in the specimen removed. Careful search was made for enlarged glands and diseased omentum before closing the incision, but nothing suspicious was found.

Six days after the operation she was doing well. The temperature was normal; pulse 80. Bowels moved thoroughly, gas was freely passed, and digestion was going on satisfactorily.

Dr. Warren F. Gay reported that the disease was an adenocarcinoma of the cecum. He could not find in any place that it had passed through the intestinal wall. The mass inside the cecum was the size of a hen's egg.

April 24th. She went home, having been up and about for several days. She had a good appetite, no indigestion, slept well, and the bowels moved naturally every day.

May 3d. Her son reported continued improvement.

THE SUPPORT OF BALTIMORE COLLEGE DISPENSARIES. — According to the *Journal of the American Medical Association*, the medical colleges of Baltimore have decided that unless the city appropriates money for the maintenance of the dispensaries connected with them, these dispensaries will be closed.

A TUMOR OF THE LABIUM.[1]

BY EDWARD L. TWOMBLY, M.D., BOSTON.

A FATTY tumor of the labium is said to be "one of the rarest gynecological affections." The cases recorded number only 23 or 24, and Kelly states that "no writer has recorded more than a single instance in his own practice." For this reason I am led to give you a short account of one other, which came under my notice in August, 1898.

The patient, K. L., white, single, age forty years, was born in Maine and was first seen in the Out-patient Department of St. Elizabeth's Hospital by Dr. C. M. Whitney, who referred her to me for operation.

Her family history was good, and she herself had always enjoyed good health. Menstruation began at fourteen years; three days in duration; no pain or clots; six napkins; always regular. Bladder symptoms none; urine negative. Heart and lungs negative. When she was eighteen years old, she states that she had some "hard bunches in each breast" that disappeared after a few months, and she also had a wen on the right side over the ninth rib, which discharged "curious, worm-like, yellowish-white matter" and then healed.

She first noticed this growth on her right labium two years ago, and describes it as a "hard bunch, the size of a bean." In one year it had grown as large as a walnut, and then began to be pedunculated. The elongation continued for five months and then the tumor itself had reached the size of an orange and began to bother her when she walked or sat down. There had never been any pain, nor increase in size at menstrual periods.

On examination, the tumor was found to hang from the outer side of the right labium at a level of the clitoris. The tumor rested on the table with the patient lying down. Its pedicle was three centimetres in length and three in circumference. The tumor was 17 centimetres in length and 14 in circumference, and there was a superficial ulceration at its lowest portion from friction. Its appearance was pear-shaped, which flattened out very much when it was placed on a table. It felt soft, with the fat predominating, and was covered with wrinkled skin, from the upper part of which grew a few hairs. It was not sensitive or painful on pressure, and its pedicle did not extend into the inguinal canal.

On August 2d the operation was done under aseptic precautions, and while the pedicle did not seem large enough to suggest hernia, yet that possibility was kept in mind in spite of the fact that there was no impulse on cough, or reduction in the horizontal position. An oval incision was made in the labium at the base of the pedicle, which was then excised. Several (five) vessels were tied with No. 1 chromicized catgut, so that the wound might be perfectly dry, and it was then closed with a buried continuous suture of the same. There was no elevation of temperature; the wound healed by first intention and she was discharged well in six days.

Six months afterwards I saw the patient, who had not suffered the slightest discomfort or any further swelling of the labium, and the scar was scarcely to be found.

The diagnosis in this case was easy, because the tumor had all the characteristics of fatty tumors elsewhere, namely, it was "a well-defined ovoid," soft, sense of fluctuation, pediculated, covered by wrinkled skin, and painless.

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[1] Read before the Suffolk District Medical Society, Section for Obstetrics and Diseases of Women, March 22, 1899.

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In distinction from a fibroma, the lipoma is apt to appear at any age, is less vascular and is softer, fluctuating or lobulated, while a fibroma more often occurs in the colored race, in the *young* adult, is apt to be supplied with many more vessels of larger size, and its density is much harder.

In the cases reported by different observers the majority of the women were over thirty years old, and the lipomatous growth was slow compared to the present case.

The average age in 13 cases was thirty-five years. The youngest girl was eighteen years, operated on by Kelly. Where the duration of growth was noticed, it was over eight years. In 17 cases the situation was given — seven tumors being found on the right labium and ten on the left. A patient thirty-three years old noticed the growth for four years; one patient forty-six years old, for nine years; one patient thirty years old, for ten years; one patient sixty-one years old, for seventeen years. The older a patient was, the longer she allowed the growth to remain.

One patient tried to cut it off with a razor and nearly died from loss of blood.

These growths, if congenital, are very deeply situated. If they are situated in the flexures of the body or limbs, as in the gluteal folds or perineum, they tend to become polypoid. Trauma may produce them (none in my case). They are noticed in erotic individuals. (I could detect no sign of this in my patient. The left labium was not enlarged and the hymen was intact.) Their distribution is said to correspond to that of the subcutaneous fat, except that they are rare on the abdomen.

Martin states that lipomata of the labia "occur more often in the East, that is, tropical lands," and "arise from pre-existing papillæ," but he gives no cases.

We can readily see how easily such tumors of the labia may become pedunculated, for the tissues in this region beneath the skin are "connective tissue, elastic elements, which predominate, and fatty lobules with underlying adipose tissue and abundant vascular supply."

Treatment is surgical, very easy, but should be done carefully. The growth does not return.

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Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR OBSTETRICS AND DISEASES OF WOMEN.

C. H. HARE, M.D., SECRETARY.

Regular meeting Wednesday, March 22, 1899, Dr. R. A. Kingman in the chair.

Dr. Johnson reported a case of

RESECTION OF THE CECUM AND A PORTION OF THE ILEUM FOR CANCER.[1]

Dr. Cumston: I would like to ask Dr. Johnson if he simply sutured the two serous surfaces together?

Dr. Johnson: Each stitch was carried down to the mucous coat and out and down on the other side as far as the mucous coat, then the peritoneum was sewed with an over-and-over suture.

Dr. E. L. Twombley reported

A TUMOR OF THE LABIUM.[2]

Dr. Johnson: I have seen four cases of tumor of the labium; two of them were herniæ and the other two belong to the class called molluscum contagiosum. These are pedunculated growths, and as I understand, are not so very uncommon in that part of the body. Those are the only four I remember of having seen in connection with the labia.

Dr. Storer: Dr. Twombley has said the diagnosis from fibroids is very easy. In fibroids sometimes the lymph spaces become very much dilated and the diagnosis between a fibroid and a myxoma or lipoma is sometimes almost impossible without the microscope. Sometimes the lymph spaces are so dilated that the border line between them and cysts is closely approximated.

Dr. Twombley: I did not mean to convey the idea that the diagnosis was extremely easy in all cases. It seemed to be so in this case. When one comes to see the two cases, there are many characteristics in common, and, as Dr. Storer says, the only means of diagnosis in certain cases is by the microscope. That will tell you exactly what you have.

Dr. F. H. Davenport read a paper on

THE EROSIONS OF THE CERVIX UTERI.[3]

Dr. Cumston: I have not very much to say, except that from my limited experience in the disease in question it has seemed to me that the treatment by trachelorrhaphy is not only indicated, but is the proper treatment in a large majority of cases. The fact that the lesions give rise to so much trouble seems to me makes an operation so slight as the one recommended perfectly justifiable; on the other hand, I have often been struck, when restoring a lacerated cervix, by the tremendous depth to which the erosions may extend and I do not see how any local treatment would possibly reach them, because after quite a large section of tissue has been excised there may still leak out a certain amount of clear, mucous liquid, showing the culs-de-sac of the glands in the depths of cervical tissue have not been removed, and I have often excised extra pieces, to be sure of getting all the glandular tissue away. My experience with the form produced by ectropion not due to laceration is extremely limited. I have seen a few of those cases in dispensary practice among working girls where I was rather at a loss to account for the condition. There was no history of gonorrhea, the hymen intact, etc. Those cases I find are far more obstinate to do anything with than the more pronounced cases due to laceration of the cervix. In fact, I have only resorted in one or two to puncture and curettement with Unna's acne lancet — a little spear-pointed lancet that is pushed into the acne pustule. I used that to get out the fluid and cauterized the erosion with carbolic acid and tincture of iodine, 1–20. I cannot say how long the result remained because we cannot keep run of the patients. Some of them did very well with that treatment. I believe, however, that the arthritic diathesis plays some rôle in the case of erosions of the cervix in virgins. The discharge is apt to have an acid reaction and a general treatment with syrup ferri iodide, and, locally, a daily irrigation with a mild bicarbonate-of-soda solution will do a great deal in improving the condition. Eczema and erosions are often present in the same patient.

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[1] See page 364 of the Journal.

[2] See page 364 of the Journal.

[3] See page 357 of the Journal.

Dr. Storer: I am very glad to hear Dr. Davenport make this sharp distinction, because I have been very much struck by the great rebelliousness of these cases in some young women in whom there was no causal infection so far as I could make out. I confess it seems to me rather hard to understand how there can be any erosion there without some bacterial infection of some kind. Very possibly that such a condition persists is an index of their rather low general condition, but it seems to me there must be some kind of bacterial activity to account for it primarily. The treatment by general means I have found very much more advantageous than any local treatment.

Dr. Kingman: I have been greatly interested to hear this paper. We frequently see young girls who have been treated for months and months for ulcerated cervix. It does not do any good to tell them there is no ulcer there and they never had one; it simply makes trouble and does no good. The idea seems to be firmly rooted in the minds of the older practitioners that everything in the way of redness is an ulcer. I have found these cases very intractable, and yet I have always felt that the erosion of the cervix was simply an indication of something else; not a separate disease of itself, but rather an indication of endometritis or endocervicitis than anything else. The idea that it could be caused directly as the result of the neurasthenic condition had never occurred to me. I shall be interested in tracing that relationship in the future. I have rarely done anything in the way of local application because I have thought it was not a local condition to be combated, and also because local treatment has been manifestly a failure in my hands, but it has seemed to me that I have seen a very large percentage of amelioration and cure as the result apparently, or at least following, the treatment of the conditions of chronic inflammation higher up. Especially does this seem to me the fact because of the relationship of these erosions and anteflexion, conical cervix and anteflexed uterus. In this case one finds almost invariably an endometritis. In fact, I am strongly inclined to accept Schultze's explanation of extreme cases of anteflexion on the supposition of parametritis posterior, which in turn is caused by endometritis. There being this endometritis higher up, we have to seek no further for the cause of an erosion, and I believe that these erosions disappear always if we get rid of the endometritis or endocervicitis. It is a large if, but if that condition is removed, cure almost certainly follows.

Dr. Davenport: I merely want to add that the most interesting class of cases to me are those which occur in young unmarried women. The suggestion which was made in the paper, as shown by two of the oldest German investigators, that there was a period in the fetal life when the whole genital tract was covered with cylindrical epithelium, and sometime in the later months of fetal life the cylinder epithelium was changed to pavement epithelium, and that frequently this process did not go on to completion, might account for many of these cases we find in young women where there is apparently no possibility of infection. The fact that these cases are poorly developed in other ways would seem to add to the probability that there was a lack of development of the genital organs as well. This is shown by the occurrence of these cases in women with anteflexed and small uteri. A conical cervix, with anteflexion of uterus, we recognize as belonging to a poorly developed uterus. Certainly, clinically, I have seen these cases where there was, as far as could be made out, no evidence of any inflammation of the genital tract higher up, no evidence of endocervicitis or endometritis, and if the foregoing observations are correct, that may explain such a condition. That being the case, a congenital erosion would be an affair of long standing, and the tissue changes not being of recent origin would necessarily be very rebellious to ordinary forms of treatment, and for these cases this simple operation would seem to be more indicated than the treatment by means of applications.

Dr. F. W. Johnson read a paper entitled

LIVE STEAM IN THE TREATMENT OF UTERINE DISEASE.

Dr. Storer: My experience with this method of treatment has been more limited than Dr. Johnson's. I began, I think, last June, and since then have had a chance to try it in only a few cases. These were of various types — endometritis, cancer, etc. The first case in which I tried it was a case of hemorrhage that had been curetted with practically no effect, and the steam stopped the hemorrhage so completely that I tried it further. I use practically the same apparatus that Dr. Johnson has, a very much more primitive one than the Germans use. I have, however, not thought it necessary to use the Burrage speculum. I arm the canula with a piece of rubber tubing long enough to protect the cervix and the operator's fingers, and find that such a contrivance works perfectly well. If the operation is done under ether after the vagina is sterilized and the cervix dilated, I have been in the habit of filling the vagina with ice water until I was ready to insert the canula. I think the cervix ought always to be dilated, and if the cervix is at all tight I regard an anesthetic as almost indispensable. In the case of women, however, with a cervical canal well dilated or easily dilated, I have not had the slightest hesitancy in using steam in my office without ether. The patient is told to lie down when she gets home, but actually going to bed is not insisted upon. As regards the use of steam when the appendages are affected, further experience will very likely show us we can use it with more impunity than now seems advisable. I have not seen any bad results in the few cases in which I have used it when there was positive disease of the appendages. It seems to me a most promising method of treatment. I have had three failures: one a hemorrhage case that did not seem to stop although it was repeated four times, and two cases of very severe gonorrheal endometritis in which it did not seem to have any effect. I think it was due to not having sufficiently high temperature. With the apparatus of Dr. Johnson I do not think we can get steam much over 100°, and by the time it gets to the fundus I doubt if it is as high as 100°, and in many cases I believe a short exposure, twenty seconds or so, to steam at a temperature of at least 100°, would do vastly more good than a longer exposure at a lower temperature.

Dr. Davenport: I have had no experience with this. I have been very much interested in the paper, and should feel that it was a method of treatment which would be applicable in cases which are very stubborn to ordinary forms of treatment. I particularly have in mind the cases of senile endometritis where there is a purulent discharge, which have seemed to me to be most rebellious to ordinary forms of treatment, particularly curetting, and I should think in this method of treatment we had something which was very valuable.

Dr. Boland: I am surpised that Dr. Storer's case of gonorrheal endometritis should have been a failure under this treatment. In gonorrheal knee-joints Dr. Goldthwait opens the joint and flushes out with water at 110° F., and says the gonococcus is killed by water at that temperature. He closes the joint and does up with plaster-of-Paris. There may have been a mixed infection in Dr. Storer's case.

Dr. Johnson: By 100° is meant 100° C. which is 212° F. I think I should be a little afraid to use very much pressure inside the uterus. I think if you get steam up to 215° or 217° F. you would burn a good deal deeper than necessary and would not get regeneration of the endometrium all over the cervix at least. In this instrument there is next to no pressure. If you wipe out the uterine cavity perfectly dry and steam twenty seconds, and then wipe out again thoroughly dry and steam again for twenty seconds, I think you get sufficient effect of the steam with the ordinary atomizer to destroy the endometrium so that it is all exfoliated. You get the same result you are after in all those cases where you use the curette. If steam used as I have described will cause exfoliation of the endometrium, it is certainly preferable to the curette. It comes in intimate contact everywhere with the inside of the uterus and is easier of application and less likely to do harm than the curette. I have not used it without ether. The Germans use it right along at their clinics without any anesthetic. I see no reason why it could not be used without an anesthetic if the cervix is sufficiently patulous.

AMERICAN PEDIATRIC SOCIETY.

The Eleventh Annual Meeting of the American Pediatric Society, held at Deer Park, Md., June 27, 28 and 29, 1899, was called to order by the President, Dr. William P. Northrup, of New York, who chose for the subject of his Annual Address

THE TEACHING OF PEDIATRICS.

He said: The American Pediatric Society is made up to a large extent of teachers of pediatrics, and the discussion of the methods of teaching this subject may be worth our while. What place should the subject of pediatrics have in the curriculum? In an undergraduate course what number of lectures and what amount of time should be given to the subject of pediatrics?

In answering these questions I must draw upon my own experience. In the whole scheme of instruction we may admit the first importance of general medicine, general surgery and obstetrics, and then pediatrics shares with gynecology the second place. Our course of instruction at present includes didactic lectures, clinics and section teaching. There is a wave of sentiment against didactic teaching, and no doubt the reaction against the former complete dissertations on disease is justified, but the didactic lecturer has yet a function, which is to present to the beginner the salient points of a subject, to give the essentials of a subject. Certain diseases must also be seen clinically in order to understand them, and in addition to the regular clinic attended by all, there should be section teaching, so that the students may get very near the patient, and, if possible, each one should repeat the demonstration. In this way gavage, lavage, lumbar puncture, etc., can best be taught.

Dr. Northrup then described what he considered the best arrangement of hospital rooms and wards for teaching purposes, and gave a list of diseases that should be taught entirely by the chair of pediatrics. He was also quite enthusiastic about the value of the stereopticon for teaching purposes. In regard to the status of the teacher of pediatrics, he said that in their school the professor of pediatrics was not a member of the governing faculty, but both he and his chief of clinic received a salary.

Dr. Rotch explained the advance that had taken place in the teaching of pediatrics at Harvard University, and said that it now holds the same position as any of the other branches of clinical medicine or surgery; that the teacher holds a full professorship, receives a salary, and is on an equality with the other members of the faculty. The course of study continues from October to June, and is divided into didactic lectures, clinical instruction and clinical conferences. For the purpose of the conference a certain number of students were asked to work up cases and present them at a meeting over which the professor of pediatrics presides. The subject is then open for discussion, first by the students and then by the pediatric staff. This seems to incite the men to do good work. Lantern-slides are also used with good results. Examination on pediatrics is compulsory.

Dr. Griffith said that, as usual, Philadelphia was not progressing quite so rapidly as Boston, but that there had been at the University of Pennsylvania a steady advance in the recognition accorded pediatrics. The teacher of this branch holds a clinical professorship, but the subject of pediatrics is an elective study. He expressed a hope that the time would come when full recognition would be accorded his department and the study of pediatrics be made compulsory for all students.

Dr. Chapin said that his work had been mostly with post-graduate students and that he had found a large number of the students were not well grounded in the principles of pediatrics. He thought that this was largely due to the fact that the college authorities had not appreciated the importance of pediatrics and had not accorded it the proper place in the curriculum. He thought that it should not be tacked on to obstetrics or to gynecology, and that it should not, on the other hand, be treated as a specialty, but that it should be taught as a branch of general medicine.

Dr. Blackader said that it had been his custom to devote his didactic lectures mainly to a consideration of infantile development and the different way in which a disease manifests itself in the child as compared with the adult. The teacher in McGill University is associated with the chair of medicine, does not hold a chair in the faculty and has no emoluments.

Dr. Adams thought that the matter does not rest so much with the colleges as with the men themselves. That if they insisted upon proper recognition they would receive it. He cited his own experiences to show that at least one faculty had been made to recognize the full importance of pediatrics and he considered it quite as important as any other branch of medicine.

Dr. Forchheimer thought that pediatrics might be taught along with general medicine.

Dr. Rotch opposed this idea on the ground that the subject matter was too large for one man, and that while pediatrics was not to be considered a specialty, it could be best taught by one especially interested in the subject.

Dr. Cotton explained the method just adopted at Rush College, in which the junior students are to be thoroughly drilled in the preliminaries and the seniors are given actual clinical experience.

Dr. Crandall thought that the students were more progressive in many instances than the colleges, for the classes in diseases of children in the post-graduate schools are among the very largest.

Dr. Henry Koplik, of New York, read a paper on

THE INCREASE OF WEIGHT IN INFANTS FED ARTIFICIALLY.

During the past nine years I have conducted in connection with my dispensary clinic a laboratory for the artificial feeding of infants, and for the purposes of the present study, infants below the age of nine months were observed and as many collected as would remain under observation for a protracted period. And, I have studied first, infants fed from birth, or nearly so, with a modified cow's milk; second, infants fed with breast and cow's milk. The modified milk supplied to these infants was in all cases the same, being composed of cow's milk diluted with equal parts of distilled water and six per cent. of sugar of milk added. Infants below three months received three ounces of this mixture; above this age an ounce is added for every month until eight ounces are reached, when full whole milk is administered. The infants were systematically weighed. In some of the older children who did not prosper on this Heubner-Hofman mixture, I increased the amount of fat. My patients were all taken from an ambulatory service in the slums.

Dr. Koplik then gives tables to show the gain in weight of these 25 cases and adds: It is quite safe to predict that an infant, if it has the breast only once or twice in the course of the twenty-four hours, will thrive on the bottle much better than on the bottle alone, and I am convinced that it is inadvisable to deprive the infant of the mother's breast no matter how scant the secretion in the breast may be. It is very difficult to decide how much cow's milk should be given such infants, because it is impracticable to measure the amount of milk secreted by the breast in question, but an observant mother and physician will soon find out how much additional milk to give.

Dr. Rotch thought that while this work was very interesting, it was not at all scientific, and that one could not make a test of any method of feeding upon cases of an ambulatory nature, for he could not tell what they were getting when away from his observation.

Dr. Koplik admitted the force of this objection, and said that he had not attempted to show the value of any particular mixture, but merely to determine how much weight a bottle-fed infant should be gaining if it were prospering.

Dr. Rotch contended that that was just what Dr. Koplik had not shown, as his children were not bottle fed only, and he could not say how much other food they had obtained.

Dr. Morse also considered the work without scientific value, because while it recorded the gains of a certain small number of infants fed on a certain mixture, it did not report the number or condition of those that did not thrive under the same circumstances.

Dr. Wentworth called attention to the fact that analyses had shown that when the mother's milk becomes scanty, it is very apt to be a poor milk, and stated that if Dr. Koplik recommended any breast milk as better than artificial feeding alone he would have to take issue with him on that point.

Dr. Chapin thought that clinical experience seemed to show that even though the albuminoids were high and the fats low, still it was better to give the baby that milk, together with the substitute feeding, rather than to cut it off entirely.

Dr. Blackader rather agreed with this, as he considered it no light measure to at once put the child on artificial feeding.

Dr. Wentworth said that he recognized the value of mixed feeding, and only criticised Dr. Koplik's point that even a very scanty supply of milk was better than bottle feeding alone, and he maintained that if scanty milk was poor milk he could not agree with Dr. Koplik.

Dr. Forchheimer said that while he should be sorry to have in private practice such results as Dr. Koplik reported, still he thought we could not decide these questions yet on the basis of physiological chemistry.

Dr. Geo. N. Acker, of Washington, read a paper entitled

PORENCEPHALUS; CASE AND SPECIMEN.

The patient was a colored male child, age four years. Soon after birth the mother noticed that the eyes had a peculiar appearance, and that he did not move his right arm or leg. He never made any attempt to walk or talk, and was quiet at all times except when hungry, at which time he would cry. The muscles were soft and flabby, with a noticeable atrophy on the right side, and the right forearm was strongly flexed and could not be extended. There were pronounced nervous symptoms, and the temperature at one time reached 107°. Post-mortem examination was made twenty-six hours after death, and it was found that the right hemisphere weighed nineteen and one-half ounces, the left, fourteen and one-half. The fissuration was quite atypical and interfered with a study of the convolutions. The defects in development of certain parts of the brain correspond pretty closely to the parts supplied by the middle cerebral artery and the author thought they had been caused by some change in this artery.

Dr. R. G. Freeman, of New York, read a

PRELIMINARY COMMUNICATION ON SEPARATION OF BACTERIA FROM MILK BY NATURAL PROCESSES.

He said that he had previously expressed the opinion that raw milk, even when the conditions of the dairy were satisfactory, could not be considered safe for administration without heating, because it was likely to contain a considerable number of bacteria, and we could not make sure that among these there might not be the bacteria causing diarrhea, typhoid fever, diphtheria or other diseases. For that reason he desired to make a preliminary report on some work which, while incomplete, seemed to show that the great bulk of bacteria which contaminated milk might separate from it by natural processes without the use of filtration, heat, or preservative agents. If milk is allowed to stand and the cream separates off and then a separate analysis is made of the milk and cream, it is found that the cream contains some three hundred times as many bacteria as the milk, and with the rising of the cream about 99 per cent. of the bacteria are removed from the milk. He thought the separation was probably due to the fat globules carrying the bacteria with them in the course of their inverse precipitation, and suggested that if this proved to be correct we might allow such a separation, sterilize, or pasteurize the cream and then add it again to the practically germ-free milk for administration as a food.

Dr. Koplik thought it would not be wise to let the impression go abroad from this that we are prepared to advise the use of raw milk for babies.

Dr. Forchheimer said that the ideal food of the future is going to be raw milk, and that the tendency is in that direction.

Dr. Rotch said that some infants who cannot take pasteurized or sterilized milk do well on raw milk if administered in proper modifications.

Dr. Adams agreed with Dr. Forchheimer that raw milk would be the ideal food.

Dr. S. S. Adams, of Washington, read a paper entitled

SARCOMA OF THE CEREBELLUM IN A CHILD AGED FOUR YEARS.

The patient was taken sick in June, 1897, the prominent symptoms being high fever and vomiting. In a week's time she had apparently recovered under treatment, but a month later began to complain of intense pain in the head and right arm. Then a weakness of the legs became manifest, the child frequently staggering and at times falling. She slept well at night and seemed to suffer principally in the mornings and afternoons. She developed a second attack of fever and vomiting, after which she lost control of her bowels and bladder. Dr. Adams made the diagnosis of cerebellar tumor, which was proved by autopsy to be correct. The brain weighed thirty-nine ounces, and every suture in the cranium was widely separated.

Dr. J. Park West, of Bellaire, Ohio, read a paper on

ENLARGED BRONCHIAL NODES.

He reported cases of eight children in whom the diagnosis of enlarged bronchial nodes had been made and who were brought to him on account of the accompanying cough. Every child had enlarged cervical nodes; in six there were in addition large axillary nodes and in five large inguinal nodes. All had large tonsils. Two had adenoids that interfered with nasal respiration, and in three the spleen could be felt. The author believes that the enlargement of these nodes was the local manifestation of the status lymphaticus.

Dr. Ratchford said that he had seen four cases this winter presenting similar symptoms that were relieved by removing the adenoids.

Dr. Chapin said that the paper had reminded him of a number of cases of obscure cough where careful physical examination would show no apparent cause for it and where there were also no adenoids.

Dr. Crandall said that he frequently saw these cases in which there were adenoids, with persistent cough.

(*To be continued.*)

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AMERICAN DERMATOLOGICAL ASSOCIATION.

Twenty-third Annual Meeting, held at Philadelphia, May 30, 31, and June 1, 1899.

(Concluded from No. 14, p. 350.)

SECOND DAY.

The session opened with a general discussion on

THE RÔLE OF PUS ORGANISMS IN DISEASES OF THE SKIN.

The referee, Dr. G. T. Elliott, of New York, reviewed the

LITERATURE OF THE PURULENT DERMATOSES AND THEIR EXCITING ORGANISMS.

The causes may be chemical, microbic or unknown. Infection of the skin may take place from within through metastasis, or from without from bacterial entrance into the follicles of the skin. The staphylococci, as saprophytes, abound in the scales of the scalp, under the nails, around the genitals and perineum, etc. The literature of the subject presents the following observations:

Abscesses of the skin and subcutaneous tissue are due to the staphylococcus pyogenes aureus or albus, or to the streptococcus pyogenes. Phlegmon has been shown in 10 out of 14 cases to be caused by the streptococcus pyogenes.

Carbuncle is said by Unna to be due to a peculiar streptococcus. Experimental inoculation with the ordinary streptococcus has produced the disease.

Furuncle has been proven to be due to the staphylococcus aureus. Impetigo vulgaris is claimed by Unna to be produced by an ochre-yellow coccus, which he calls the impetigococcus. He distinguishes a number of different forms of impetigo.

Folliculitis of lanugo hairs is ascribed by Wickham to the agency of the staphylococci.

Ecthyma is maintained to be due to the staphylococci.

Acne vulgaris lesions are, according to the French writers, the result of the action of the staphylococci: Unna claims pathogenicity for his micro-bacillus.

Peri-umbilical pemphigus is said to be caused by the staphylococcus aureus.

Sabaroud ascribes pus-producing properties to a tinea found in horses.

Evidences of metastasis are seen in furunculosis following certain forms of angina, influenza, etc. Furunculosis has been reported to have followed gonorrheal urethritis: gonococci were recovered from the pus of the furuncles.

The writer, in concluding, remarked that the bacterial findings in purulent dermatoses are in many cases contradictory. Pyogenic cocci are not the only causes of suppuration. Many organisms not ordinarily pus producers may become so under certain conditions. Beyond our knowledge of the bacteria causing the group of diseases which comprises abscess, furuncle, carbuncle, phlegmon, etc., the subject is unsettled.

The co-referee, Dr. T. C. Gilchrist, of Baltimore, presented the

RESULTS OF BACTERIOLOGIC EXAMINATION OF 300 VESICULAR AND PUSTULAR AFFECTIONS OF THE SKIN, WITH SOME INOCULATION EXPERIMENTS.

Impetigo contagiosa. — Seventeen cases examined. The streptococcus was found in every case; in 10 in pure culture; in others associated with staphylococci pyogenes. The pseudo-diphtheria bacillus was found in 2 cases. The results confirm those of Larue, who found streptococci in 220 out of 270 cases. The streptococci found are not as virulent as those in erysipelas. Inoculated mice die in a week or ten days, and the organism can be recovered from the heart.

Tricophytosis. — The ringworm fungus is certainly capable of producing pus. After thorough antiseptic cleansing of the skin, the writer scarified the arm of a subject and rubbed in a pure culture of the tricophyton megalosporon ectothrix. There developed in a few days an eczematous patch with small pustules at the sites of hair follicles. Cultures made from these pustules gave a pure growth of the tricophyton fungus. This experiment was repeated, another subject being inoculated with a pure culture taken from the pustule. In two weeks there was formed a large eczematous looking patch with surrounding pustules around the lanugo hairs. The hairs were found to contain the mycelia and spores of ringworm. A smear slide from the pus failed to show micrococci. The evidence is conclusive that the tricophyton fungus may produce pus.

Furunculosis. — Twenty cases examined. Staphylococcus aureus was present in every case. The organism appeared in the smear preparation as a diplococcus.

Scabies. — Nine cases examined. The pustules were in 4 cases due to the streptococcus, in 2 cases to staphylococcus and streptococcus, in 2 cases to staphylococcus albus, and in 2 to staphylococcus aureus.

Superficial whitlow. — From the vesicles there were found in 1 case streptococci, 1 case staphylococcus albus, and 1 case staphylococcus albus and aureus.

Sycosis. — Pustules showed staphylococcus aureus.

Syphilis. — Nine cases examined. Pustules showed streptococci and staphylococci.

Vesicles produced by carbolic acid and croton oil were sterile, as were also those in dermatitis venenata (11 cases), herpes zoster, pernio and erythema multiforme.

Eczema. — Twenty-eight lesions from 19 cases examined. In 4 cases out of 5 vesicles examined were sterile; 13 cases of eczema madidans gave staphylococci.

Acne vulgaris. — Ninety pustules from 53 cases examined. Forty-nine cultures made on agar were sterile; 31 gave staphylococcus epidermidis albus; on nine tubes from 9 cases a bacillus was grown. *This bacillus was found in all of the 90 cases in the smear preparation.* Gilchrist looks upon this bacillus as the cause of the acne lesion. He claims that the growth on agar and glycerin agar only takes place when the pus is deposited in a clump upon the medium and not spread on the surface. The staphylococcus epidermidis albus so frequently found was due to contamination, the result of faulty technique, and was not found when the precautions were strict. The organism is a short thick bacillus, does not grow on gelatine or milk; grows fairly luxuriantly on agar and glycerin agar, where it is seen to branch; invisible growth on potato; the bacillus is motile, has no capsule, and is not decolorized by Gram's stain. Inoculation experiments are at present being made.

Dr. S. Politzer gave a

DEMONSTRATION OF RINGWORM AND FAVUS CULTURES.

Dr. Prince A. Morrow, of New York, read a paper on the

MODES OF INFECTION OF LEPROSY.

He stated that very little significance should be attached to infection through sexual intercourse.

It is quite possible that the mode of salutation of rubbing the noses which prevails in Iceland and Hawaii may have been partly responsible for the spread of the disease in those countries. The plague of mosquitoes and the plague of leprosy appeared in the Sandwich Islands about the same time, and a causal relationship has been claimed. Until recently numerous searches had failed to reveal the presence of lepra bacilli in mosquitoes. The writer discredits the part alleged to be played by the mosquito in the production of leprosy.

Leprosy usually occurs first upon the exposed surfaces, face, hands, etc. Many believe the skin to be the point of entrance of the germs. The probability is that there are many modes of infection, but the most frequent channel of infection is, according to the views of most leprologists, through the upper air passages. The writer believes inhalation to be a frequent cause. Blashko collected thousands of lepra bacilli upon plates placed in the immediate proximity of lepers. Certain conditions predispose to leprosy. Some individuals are absolutely immune. An individual predisposition seems to be the most important favoring factor. Catarrhal conditions of the upper air passages are also strong predisposing causes. Nearly all lepers give a history of a "cold" at the onset of the disease.

Dr. S. Sherwell, of Brooklyn, contributed

REMARKS ON THE TREATMENT OF SCABIES.

The writer condemns the treatment of scabies by irritant ointments of various kinds. He urges the adoption of a method which he declares is "better, cleaner and easier." The patient is instructed to take a thorough bath, after which sand soap is to be used upon the tougher portions of the integument. A half-teaspoonful of powdered washed sulphur is then rubbed over the entire skin surface. The same quantity should be placed between the bed sheets and shaken so as to evenly distribute the powder. This should be repeated for several nights, a cure being usually effected in a week. The writer has never seen a dermatitis follow this treatment. He also advises its use as a prophylactic measure whenever an individual is exposed to scabies.

Dr. J. N. Hyde, of Chicago, presented a paper entitled

A CONTRIBUTION TO THE STUDY OF BLASTOMYCETIC DERMATITIS.

The patient was a man of fifty-seven, with a tuberculous family history. Five years before he came under observation, he had upon his leg a pimple, which spread anteriorly. This healed up under treatment with the formation of a cicatriform tissue. Several years later a condition similar to that on the leg developed on the dorsum of the hand. This soon involved the entire dorsal surface of the hand extending on to the fingers. This area was the seat of a verrucous growth, sharply defined and with a reddish halo. There was slight secretion; no subjective phenomena. The condition resembled closely verrucous tuberculosis. A section was excised and blastomyces were found in the tissues. In many places the section looked like a squamous-celled carcinoma. There were also numerous miliary abscesses in the epidermis, in which alone the blastomyces were found. A bacillus of the diphtheria group was also present. The blastomyces when injected into lower animals produced abscesses. The patient improved considerably under the use of iodide of potash.

In all, seven cases of blastomyces in men have been reported. In six the skin alone was involved. Five patients were men and two women. The disease begins as a maculo-papule, later breaking down and suppurating. The dorsum of the hand and the anterior surface of the leg are the regions most frequently affected. The disease must be differentiated from verrucous tuberculosis and lupus vulgaris, to which it may bear a close resemblance, and also from the late syphiloderm.

Recent Literature.

A Text-Book of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease. For the Use of Students and Practitioners of Medicine. By Arthur R. Cushny, M.A., M.D. (Aberd.), Professor of Materia Medica and Therapeutics in the University of Michigan Medical Department, Ann Arbor. In one handsome octavo volume of 728 pages, with 47 engravings. Philadelphia and New York: Lea Brothers & Co. 1899.

This is a modern treatise and so full of fresh thought that it is a pleasure to call the attention of the readers of the Journal to it. It is not often that one gets enthusiastic over a book on pharmacology and therapeutics, but no graduate in medicine can read this work without feeling an admiration for the subject. Perhaps the book seems to be such an advance over what we have used in the past for the reason that the knowledge of the subject has progressed rapidly and it has chronicled this advance. But this cannot account for all the differences. Pharmacology and therapeutics have here been simplified, and statements which have been copied from text-book to text-book for a generation have at last found their clearing house.

The writer appreciates existing relations between the pharmacist and physician. The former has done his work so well, the latter can employ his valuable time to better advantage than in the study of compatibilities, solubilities and similar portions of the pharmacopeia. Accordingly, attention is chiefly devoted to the actions and therapeutics of the different drugs, and this has been done in so clear, so concise, and so comprehensive a manner that the reader is charmed. The volume is a veritable treat in medicine. Its text corresponds so closely with what the author in his preface states to be his object in writing that we quote his words:

"My object has been to bridge over the hiatus which exists between the phenomena occurring in the normal organism and those which are elicited in the therapeutic use of drugs, to show how far the clinical effects of remedies may be explained by their action on the normal body, and how these may in turn be correlated with physiological phenomena. It necessarily follows that the subject is treated from the experimental standpoint, and that the results of the laboratory investigator are made the basis of almost every statement. Where these fail to elucidate the therapeutic effects, or even to suggest a possible explanation, I have preferred to leave the question undiscussed rather than to call on such occult *dei ex machina* as alterative or tonic actions."

In referring to the scope of the work he says, "It is true that the more advanced teachers of medicine have very properly abbreviated their lists of remedies until those generally employed may be enumerated in units where they were once counted in scores, but the student on going into practice meets numbers of drugs previously unknown to him, and not appreciating that these have already been tried and discarded by his teachers, is tempted to fall into the slough of unreasoning empiricism. . . . The period of constructive pharmacology has scarcely dawned; at present its chief function is destructive and critical." Though therefore the less important drugs are discussed, it is done in a succinct way, and by placing the text in another type, which, by the way, is most admirably suited to the purpose, the book escapes any censure of cumbersomeness.

"In dealing with each drug, I have attempted to unify the whole action by using the most distinctive feature as a centre around which to group the less important symptoms."

The classification follows that of Buchheim and Schmiedeberg and is most satisfactory, because it is so easily grasped by the student. The drugs are arranged in many groups, each named from its most prominent member or from some marked property possessed by all, and then these groups are united according to their mutual resemblances. A bibliography of the more important articles is appended to the discussion of each drug. There is no hack work in the volume. The articles are all monographs and surprisingly up to date.

Materia Medica and Therapeutics. An Introduction to the Rational Treatment of Disease, for the Use of Students and Practitioners of Medicine. By J. Mitchell Bruce, M.D., F.R.C.P., etc., Physician and Lecturer on Medicine at Charing Cross Hospital, London. New (sixth) edition, revised and enlarged. In one 12mo volume of 618 pages. Philadelphia and New York: Lea Brothers and Co. 1899.

The manner of publication and the plan of this work are so excellent that one is predisposed in its favor at the start. It has the advantage of having been through five editions and in this its sixth, "revised and enlarged," the reader has a right to expect a finished text-book of materia medica and therapeutics. It should be free from errors and thoroughly up to date. We look through the sections on inorganic and organic materia medica, however, and are amazed to find no mention of drugs, some of which have been employed nearly a decennium and have proven themselves most useful. That a sixth edition of materia medica and therapeutics published in 1899 contains no description of trional, diuretin, dermatol (bismuth subgallate) creolin and tannigen seems past belief! Heroin, taka-diastase, orexine, urotropin and orthoform are similarly omitted. Recent introduction into medical practice cannot be pleaded in palliation, because the first edition of another book on pharmacology and therapeutics, coming from the same press this same year, gives details of each.

If it is with sins of omission we have to deal in the first two sections, it is with those of commission in the third, which is devoted to general therapeutics. The text is so plausible that it will all the more easily lead the student astray. In the section on the stomach we read: "We may provide, as the first part of the meal, substances, such as soup, which will be absorbed rapidly and stimulate the follicles to abundant secretion." The follicles may be so stimulated, it is true, but not by the absorption of liquids from the stomach which the work of von Mering and others has shown takes place to such a slight degree. On page 457 we read, "excess of the gastric juice is rare." Specialists on stomach diseases speak in quite another way. Einhorn goes so far as to say that in nearly one-half of all stomach patients hypersecretion is present. On page 495 a list of 19 direct cholagogues is given. This would be good news if it were true, but of these 19 there is but one — sodium salicylate — which recent work has shown to have any action of account on the secretion of bile, and even with this drug the matter is not definitely settled. On the other hand, bile itself, which has been proved to be far and away the best cholagogue, is referred to as "of doubtful value."

Some of these errors — which are merely examples of others — might be condoned in a first edition, but there is no excuse for the sixth edition of so good a book being so bad.

Die Verletzungen des Auges. By Dr. E. Praun, of Darnstadt. Pp. 530. Wiesbaden: Bergmann. 1899.

An oasis in the desert of the year's ophthalmological literature. The author divides his volume upon injuries of the eye into a general and special part, the former being largely an exposition of theory, history and statistics, while the latter is a consideration of injuries of the different parts of the eye anatomically speaking. Dr. Praun is to be congratulated for presenting a subject ordinarily so difficult to handle categorically in at once so interesting and instructive a manner. The subject of expert testimony and the estimation of damage from the standpoint of Austrian and German statistics is carefully gone into, and in event of a translation into English, an analogous chapter based upon existing conditions in our own country might well be interpolated. The removal of foreign bodies, especially steel, from the interior of the globe, is explained with great care, and valuable rules applicable to the use of the hand and the "giant" (Haab's) magnet are timely, being, as they are, a comprehensive digest of a large literature. In the historical consideration of the extraction of interocular metal, the name of Bradford could with accuracy precede that of Hirschberg. The author does not intrude his literary references. The book is well printed, is furnished with a good index and is the first really good monograph upon this subject since the introduction of antiseptic surgery.

Ocular Therapeutics for Physicians and Students. By F. W. Max Ohlemann, M.D., Late Assistant Physician in the Ophthalmological Clinical Institute of the Royal Russian University of Berlin, etc. Translated and edited by Charles A. Oliver, A.M., M.D. (University of Pennsylvania), one of the attending surgeons of the Wills Eye Hospital, etc. Pp. 274. Philadelphia: P. Blakiston, Son & Co. 1899.

This book is an attempt to collate the most important and useful formulæ in ophthalmology in a single volume and affords an interesting opportunity to become acquainted, as the author says in his preface, "with the methods of treatment in vogue both at home and abroad." This statement is hardly borne out by the contents, which is a summary of German methods of treatment, with an occasional allusion to the therapeusis of practitioners of other nations, more especially when such methods are unusual or striking.

To the American a book on ocular therapeutics which has no allusion to antitoxin treatment of diphtheritic conjunctivitis, to the use of protargol in gonorrheal ophthalmia, and classes the application of jequirity as equally dangerous and unpracticable as the old-fashioned inoculation with blenorrhagic pus, and suggests the use of preparations of lead in trachomatous pannus, seems to be somewhat old-fashioned.

Electro-Hemostasis in Operative Surgery. By Alexander J. C. Skene, M.D., LL.D., Professor of Gynecology in the Long Island College Hospital, Brooklyn, N. Y.; formerly Professor of Gynecology in the New York Post-Graduate Medical School; Gynecologist to the Long Island College Hospital; President of the American Gynecological Society, 1887; Corresponding Member of the British, Boston, and Detroit Gynecological Societies, of the Royal Society of Medical and Natural Sciences of Brussels, of the Obstetrical and Gynecological Society of Paris, and of the Leipzig Obstetrical Society; Honorary Member of the Edinburgh Obstetrical Society; Fellow of the New York Academy of Medicine; ex-President of the Medical Society of the County of Kings; ex-President of the New York Obstetrical Society. New York: D. Appleton & Co. 1899.

Dr. Skene believes in electro-hemostasis in operative surgery and in his book he almost convinces one that it is *the* method to be used for controlling hemorrhage. The book is the best treatise on this subject with which we are familiar, and is an excellent example of book-making. It will, however, be a long time, if ever, before electro-hemostasis supercedes the general use of ligatures. The results obtained by means of aseptic ligatures are so satisfactory that there can be no reason for change.

Saunders' Medical Hand-Atlases. Atlas of the External Diseases of the Eye, including a brief Treatise on the Pathology and Treatment. By Prof. Dr. O. Haab, of Zurich. Edited by G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College, Philadelphia, etc. With 76 colored plates and six engravings. Philadelphia: W. B. Saunders. 1899.

This atlas of the external diseases of the eye is an admirable companion to Haab's "Atlas of Ophthalmoscopy and Ophthalmoscopic Diagnosis," favorably reviewed in these columns last year. It is always difficult to represent pathological appearances in colored plates, but this work appears to have overcome these difficulties in an admirable manner, and the plates, with possibly one or two exceptions, are absolutely satisfactory. The first 78 pages are given up to an exposition of methods of examination of the eye in disease. The text is simple and well adapted for the instruction of students in what to see and how to see it. Accompanying each plate are a few pages devoted to the description of the disease illustrated, its clinical history and an outline of treatment, which latter portion is distinctly up to date. The book is well printed, bound, and of a convenient size.

The Cerebro-Spinal Fluid. Its Spontaneous Escape from the Nose. With Observations on its Composition and Function in the Human Subject. By St. Clair Thompson, M.D., M.R.C.P., F.R.C.S. London, Paris, New York and Melbourne: Cassell & Co. 1899.

This is a book of 140 pages giving the results of a thorough study of the subject of the title. The work was inspired by a case in which a nearly continuous watery discharge from one side of the nose proved to be an escape of cerebro-spinal fluid. The author has collected and tabulated twenty reports of cases showing a more or less similar condition. The possibility and frequency of the escape of cerebro-spinal fluid from the nose has been in the past overlooked, a watery discharge being commonly described as nasal hydrorrhea due to a hypersecretion of the nasal mucous membrane. A knowledge that a watery discharge may come from the cerebral cavity should lead to an examination of the fluid. This book will be invaluable as a guide to any one who has occasion to study such a case. It is well written and interesting.

An Essay on the Nature and the Consequences of Anomalies of Refraction. By F. C. Donders, M.D., late Professor of Physiology and Ophthalmology in the University of Utrecht. Revised and edited by Charles A. Oliver, A.M., M.D. (University of Pennsylvania) one of the attending surgeons to the Wills Eye Hospital, etc. With portrait and other illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

The editor's work has consisted in writing the preface and in directing the make-up of the book, which is a beautiful specimen of the book-maker's art, in which the type, paper, size of page and style of binding have been most judiciously chosen.

With regard to the text the author says in his preface, in substance, that his effort has been to rescue this unique brochure, published more than thirty years ago in a comparatively infrequently used language, and to give a great man greater honor and his works an increased amount of usefulness.

A Practical Hand-Book on the Muscular Anomalies of the Eye. By Howard F. Hansell, A.M., M.D., Clinical Professor of Ophthalmology, Jefferson Medical College, etc., and Wendell Reber, M.D., Instructor in Ophthalmology, Philadelphia Polyclinic and College for Graduates in Medicine, etc. With 28 illustrations and one plate. Philadelphia: P. Blakiston, Son & Co.

The subject matter is an elaboration of a series of lectures delivered in successive winter courses at the Philadelphia Polyclinic. The authors have sought to clothe their thoughts in language easily understood, to avoid discussions and speculations and to emphasize methods which have stood the test of their own experience. The result is a book largely devoted to methods of examination and the proper interpretation of the results obtained. The pages devoted to treatment are well considered, conservative and clear.

American Medical Pocket Dictionary. Edited by W. A. Newman Dorland, A.M., M.D., Assistant Obstetrician to the Hospital of the University of Pennsylvania; Fellow of the American Academy of Medicine, etc. Containing the pronunciation and definition of over 26,000 of the terms used in medicine and the kindred sciences, along with over 60 extensive tables. Second edition, revised, pp. 518. Philadelphia: W. B. Saunders. 1899.

The essential features of the contents of this small, but comprehensive, volume are contained in its title. It fulfils its aim of crowding much matter into small space. It is conveniently arranged for reference, and most attractively bound in flexible leather. Numerous tables, many of them anatomical, add to its usefulness. It meets, no doubt, a growing want which we all feel more and more as medicine and hence medical terms multiply with the growth of specialism.

Retinoscopy in the Determination of Refraction at One Metre Distance, with the Plane Mirror. By James Thorington, M.D., Adjunct Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Second edition, revised and enlarged, with 28 illustrations, 12 of which are colored. Philadelphia: P. Blakiston, Son & Co.

The first edition of this work was very favorably reviewed in these columns when it first appeared in 1897, and this edition is more plentifully illustrated and in every way sustains the previous reputation of the book as the best work on retinoscopy ever published.

A Compend of the Diseases of the Eye and Refraction, Including Treatment and Surgery. By George M. Gould, A. M., M.D., formerly Ophthalmologist to the Philadelphia Hospital, etc., and Walter L. Pyle, A.M., M.D., Assistant Surgeon to the Wills Eye Hospital, Philadelphia, etc. Second edition revised and enlarged, with 109 illustrations, several of which are in colors. Pp. 293. Philadelphia: P. Blakiston, Son & Co. 1899.

This book is No. 8 of the series of "Quiz Compends" published by Blakiston, Son & Co., and has been reviewed before in this journal; it need not, therefore, be reviewed at length again.

THE BOSTON

Medical and Surgical Journal.

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UNIFORMITY REQUIREMENT FOR LICENSE TO PRACTISE MEDICINE.

A further attempt is being made in Michigan by the Wayne County Medical Society to secure uniformity of requirements for license to practise medicine. We are in receipt of a circular from Dr. E. Amberg, the secretary of the committee appointed to investigate the matter, the gist of which is an effort to gain the co-operation of the various States of the country in providing uniformity of requirements leading to the privilege of practising medicine. To this end certain preliminary questions have been asked to sound medical opinion and up to September 14th answers had been received from thirty-six States and three Territories, for the most part favorable to some scheme of co-operation.

In general, we are quite in favor of any plan through the agency of which a higher general standard of medical education may be secured. There is every evidence that, as a profession, we need such a standard, and we hope this new effort may accomplish definite results. It is also well to bear in mind the difficulties in the way of a satisfactory solution of the question. In the first place, medical practice is so largely an art and so little a science that uniform standards are exceedingly difficult to establish. In the second place, the growing and inevitable tendency toward specialism is likely to render more and more vague the requirements within which practice should be allowed. Again, legislation in such matters is notoriously unsatisfactory, and very likely in the present state of public opinion to establish false standards, detrimental, on the whole, to medical progress. In this, as in many other matters relating to education, it seems to us that if any standard of value is to be established it must be fundamental, and begin with preliminary education. Schools of medicine, as through President Eliot's endeavors colleges of other sorts are coming to do, should demand a certain standard of preliminary training before a student is allowed to enter upon a medical course at all. Could such a preliminary uniformity of attainment be established we should have small fear for the standard when these same students enter the active practice of their profession. How far removed we are from this ideal may be gained by a glance at the requirements for admission to our medical schools the country over. We need first to reform our medical education, and when that is satisfactorily done uniformity of standard will be attained without recourse to legislation. We are therefore strongly of the opinion that the real question at issue is to regulate the character and attainments of the men who are about to study medicine, rather than attempt to legislate into positions of respect men who from the beginning were unfitted for the duties and responsibilities of their profession.

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IMPROVED BUILDING LAWS FOR NEW YORK.

In our issue of September 14th a note was published relative to the question of improved building laws for New York. The statement was made that the new building code, which has recently been prepared by the Building Code Commission, will tend to improve the construction of tenement houses. Our attention has been called to the fact that the concensus of the best opinion in New York is opposed to the new building law, which has received almost the universal condemnation of the press of that city. We do not wish to go into details regarding the various aspects of the question, but the importance of the general matter of tenement house reform justifies a brief restatement of the case. In general, the new code, it is stated, makes no adequate provision for more light and air in tenement buildings, and fails utterly to provide for the improvements in buildings which the study of the last few years has shown entirely feasible. The following editorial comments apparently place the matter in its true light. The *New York Tribune* writes:

"The essential demand of the Tenement House Committee of the Charity Organization Society was for more light and air in tenements. The present narrow, damp wells which pass for courts in tenement houses are an unmitigated evil, which no tenderness for the avarice of landlords should permit the city longer to tolerate. The committee asked that all houses erected hereafter should be required to have the courts not less than six feet wide at every point, and to contain an area of not less than 150 square feet. This was a reasonable rule. It reached the greatest evil of the tenement house in the only possible way. We must endure the old buildings already in existence, but there is no reason why we should pretend to reform tenement house construction unless we make the one requirement of new buildings without which not one of them is really fit for human habitation. Yet the Building Code Commission has ignored it, and has absolutely failed to say a word on the subject, but is ready to let every grasping landlord go on filling this city with structures which are condemned by everybody but the rent gatherer."

The *Commercial Advertiser* makes the statement that "One of the worst features of the proposed code is that it threatens to put a stop to further progress in this city in the direction of tenement house reform. Not one of the important amendments that were suggested by the Tenement House Committee of the Charity Organization Society has been adopted. Among these were provisions that light and air shafts should have a minimum width of six feet; that tenement houses should have at least one bath-room for every twenty families; that tenement houses that were not fireproof should be limited to six stories in height; that wooden dumbwaiter shafts, a prolific cause of fire, should be prohibited, at least in wooden buildings; that ground-glass panels should be inserted in doors leading into dark halls, and that no chance should be allowed landlords to evade the law by erecting tenement houses and calling them apartment houses."

Wise legislation on this matter is evidently important not only for those who live in tenement buildings, but also as regards the general health of the city. Certainly no ulterior motives should stand in the way of the enactment of laws which will lead in the building of tenements to the greatest amount of light, ventilation and cleanliness consistent with the necessary economy which this poorest portion of the community is obliged to practise. That such building is possible is the firm conviction of the New York Charity Organization Society.

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A NEW COURSE OF INSTRUCTION FOR THE ARMY HOSPITAL CORPS.

A recent addition to the curriculum at the schools of instruction for the men of the Hospital Corps, U. S. Army, consists in a course of cooking, having special reference to the preparation of diet for the sick. Instruction is given by trained female dietists and this, in scope and arrangement, is at present planned to include a series of fifteen lessons, of which twelve are progressive and three are reviews. The character of the work, which is entirely practical, is based on the idea that the cooking for the sick — such as the average hospital-corps man may be expected to perform — will be largely of an emergency character and with isolated and small commands and under conditions where supplies will be limited in variety. It is expected that at the larger hospitals, where great variety of supplies is possible, the members of the hospital corps in general will neither be required nor permitted to prepare food for the sick, such work preferably being delegated to the female dietists or the trained general cooks attached to such institutions. The object of instruction, therefore, is, first, to educate the recruit in the preparation of the various articles of the several rations, so as to render them more delicate, appetizing and suitable for the use of the sick; second, in the employment of the five articles which it is anticipated will form the hospital stores under the new supply table; third, in the preparation, in simple combination, of eight additional articles selected for their nutritive value, suitability for the sick, ease of preparation, palatability and probable availability in the field or at isolated stations. These additional articles are fresh milk, eggs, oatmeal, farina, chicken, canned soups, gelatine and fresh fruits; while the hospital stores include malted milk, condensed milk, beef extract, rice and chocolate. From these articles, together with the components of the several rations, eighty-six palatable, delicate and nutritive preparations or combinations have been selected for study, this number, it is believed, being sufficiently ample under all circumstances. The careful drilling of the men to make the most of the few articles which they are practically certain to have on hand is thought to be more advisable than to undertake the lengthy study of a large number of food stuffs, which, while eminently desirable, would probably not be available under the conditions in which the nurses of the hospital corps would be required to act also as dietists. The course begins with the preparation of liquid diet, and this is followed by instruction in preparing semi-liquid diet. During the last week of the course the articles of the ration are studied. The men appreciate the practical value of this work and take great interest in it, appreciating that while they are learning to provide for the sick they are also being placed in a position to take better care of themselves and their own food when in the field. In instituting this course Surgeon-General Sternberg has done much toward increasing the comfort of the sick and the efficiency of the army hospital service.

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PRIZES OFFERED BY THE MASSACHUSETTS ASSOCIATION OF BOARDS OF HEALTH.

The Massachusetts Association of Boards of Health, desirous of encouraging uniformity in the official procedures relating to contagious disease throughout this country, offers elsewhere, in the advertising columns, the first of a series of prizes designed to bring out the best and most practical solutions for certain knotty problems in everyday practice, the treatment of which, at the present time, varies considerably in different places. Non-members, as well as members, of the Association are eligible. The importance of the subject calls for the best efforts of those whose knowledge and experience may qualify them to give information and to make suggestions.

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MEDICAL NOTES.

A New Danger. — An affection is said to have appeared in Paris due to the presence in bakers' bread of salts of lead deposited on the walls of ovens by the use of old wood as fuel. The Council of Hygiene explains that such wood is usually impregnated with sulphate of copper or creosote and is likely to give off poisonous volatile salts.

Appointment of Dr. A. B. Richardson. — It is reported that Dr. A. B. Richardson, of Massillon, Ohio, has been appointed Superintendent of the Government Hospital for the Insane at Washington, to fill the vacancy caused by the death of Dr. W. W. Godding. Dr. Richardson is a graduate of Bellevue Hospital Medical College, of New York.

Solitary Tubercles of the Heart. — At the recent annual meeting of the Medical Society of California, Dr. A. W. Hoisholt reported an extensive involvement of the heart in a case of tuberculosis. The writer's statement of the unusual condition found is, in part, as follows: "The tuberculosis was evidently primarily located in the left pleura, and from here extended by contiguity to the pericardium, bronchial glands, ribs and sternum. The tuberculous pericarditis led to the development of subpericardial tubercles, which by conglomeration formed two large, solitary tubercles, one situated about the centre of the wall of the left ventricle, the other in the right auricle, below the arch of the aorta, the tuberculous process burrowing into the myocardium."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, October 11, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 84, scarlatina 28, measles 10, typhoid fever 53.

Enthusiasm for Athletics. — It is reported that nearly 800 Harvard students are in training for various athletic events, a larger number than ever before.

Precautions Against Typhoid Fever. — Measures have been taken to prevent the possible spread of typhoid fever from contaminated milk coming from Westboro, Mass. The Board of Health has had the cans and utensils thoroughly sterilized and no further danger from this source is anticipated.

A Boston City Hospital Emergency Station. — The Mayor of Boston has referred to the Board of Aldermen a communication from the President of the Board of Trustees of the City Hospital, recommending that a portion of the city's Haymarket Square land be appropriated as a site for an ambulance and a relief station under control of the hospital trustees.

Vaccination in Revere and Lowell. — It is stated that owing to the prevalence of small-pox in Massachusetts and in Chelsea especially, the Board of Health of Revere has requested that those who have not been vaccinated within five years should avail themselves of the opportunity now offered. The local Board of Health of Lowell has also taken measures to have all the employees of the Hamilton Manufacturing Company vaccinated, one of whom was recently found to have small-pox in mild form.

NEW YORK.

Free Dispensaries. — On September 28th the Committee on Dispensaries of the State Board of Charities, consisting of Dr. Stephen Smith, of New York, Dr. E. V. Stoddard, of Rochester, and Gen. S. W. Rosendale, of Albany, gave a hearing in New York on a tentative set of rules for the government of city dispensaries which they had formulated for adoption by the Board. Among those who took part in the discussion of the proposed rules were Edward T. Devine; secretary of the Charity Organization Society, Charles C. Savage, president of the Board of Managers of the Demilt Dispensaries, and a number of physicians representing various medical societies and dispensaries. One of the rules requires that all applicants for treatment shall sign a sworn statement of their inability to pay for medical services and also provides for the investigation of all suspicious cases. It was the consensus of opinion of those present that it would be necessary to establish a registration bureau which should act as a sort of clearing house for the different dispensaries of the city. Another of the rules provides that there shall be a minority representation of women on the managing boards of dispensaries incorporated independently of any other institution, and this gave rise to a considerable amount of discussion.

Improved Quarantine Inspection. — Dr. Doty, Health Officer of the Port, sailed for Bremen on October 10th. His object in going abroad is to confer with health officers at foreign ports with a view to improving the present methods of preventing the embarkation of passengers infected with small-pox, typhus fever or other contagious diseases. Dr. Doty stated before leaving that the poorer class of immigrants from Russia was a constant source of anxiety in his department, and that the Bremen officials should observe more care in their examination of steerage passengers from that port. He is strongly in favor of an international agreement for the inspection of emigrants.

Infant Mortality in the Borough of Brooklyn. — The excessive mortality among infants and young children in proportion to the general mortality which has been noted for some time past in the Borough of Brooklyn still continues.

Two Centenarians. — Martha Harlow died in Brooklyn on October 1st at the reputed age of one hundred and four years. She was born in Plainfield, Conn. Mrs. Ellen Graham Massvel, a cousin of John Lorimer Graham, who was postmaster of New York City during President Tyler's administration, died at Lakewood, N. J., on October 3d, aged one hundred and one years.

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ARMY NOTES.

The Hospital Ship "Relief." — The army hospital ship *Relief*, which recently left San Francisco for Manila, sailed without passengers and with the minimum working strength of crew. This vessel was recently inspected by a board composed of officers of the army, navy and army transport service and was thought to have too high superstructure and too small coal capacity to render her use on long voyages desirable. Prior to her departure the force of hospital attendants attached to the ship was removed, as were also the one hundred and twenty-five hospital-corps men and female nurses which she was expected to transport for service in Manila. A considerable portion of her cargo was removed before sailing and this was replaced by a large additional supply of coal to meet possible contingencies. The *Relief*, on arriving at Manila, will hereafter serve as a floating hospital and will also be used for the transportation of the sick between the various islands of the Philippine group.

Report on the Use of the X-Ray. — Capt. W. C. Borden, assistant surgeon, United States Army, and professor of military surgery and surgical pathology at Georgetown University, is engaged upon a report to the Surgeon-General of the Army covering the use of the x-ray in the Spanish-American War. This report, which is to be very elaborate and profusely illustrated, will be of great value to surgeons, civil as well as military.

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Miscellany.

GOLF AS A THERAPEUTIC AGENT.

Possibly our enthusiasm for golf has over-reached itself. This, at least, would appear to be the opinion of the *Medical Press*, from which we quote the following:

"It has been said that every other man in America is now so addicted to Scotch ways and habits that he wears heather-tweeds, plays golf, drinks 'Scotch,' and says 'Hoots, mon.' Of such must be Dr. Irving C. Rosse, Washington, who contributed to the American Neurological Association a paper on golf from a neurological view-point. Medical men have their hobbies in sports and pastimes, and these are sometimes regarded with a professional eye and with a bias in their favor which is largely due to the man's own aptitude and predilections. We are told that here we have a royal road to physical exhilaration in a game that can be played all the year round, independently of atmospheric vicissitudes, during all the seven ages of man, by delicate young girls as well as by strong athletes, and even by decrepit old men, whose declining powers do not admit of severe exertion. We must, however, dissent from the statement that there is absolutely no danger attached to the game, and that consequently no accidents ensue. Dr. Rosse is evidently new to the game and knows little of its history, even its latest history, or he would know that fatal accidents have occurred, at least in Scotland, from golf-ball strokes.

"There is a great deal to be said in favor of golf for those suffering from heart lesions, arterial calcification or certain hysterical conditions, and undoubtedly as a medical adjunct it is not to be despised. Dr. Rosse, while enjoining moderation, alleges that benefit has been derived in some cases of cough, nervous asthma, and in affections of the bladder and prostate; but it is pre-eminently in functional nervous disease that our great Anglo-Saxon game is to be recommended both as a prophylactic and curative. As to its being a certain remedy for insomnia, there may be some doubt, as we have met, within the last few days on the golf course, a golfee who despite his golf exercise suffered from insomnia. A great deal might be said in favor of golf as a mental and nervous tonic, but not to the exclusion of other sports which have many of the same advantages. Undoubtedly it is a good thing for the physician to know from his own actual experience the physical requirements of different games, and their physiological uses. The use of golf as a remedy in the treatment of nervous ailments of a functional character, whether they affect the mental or visceral spheres, is worthy of all consideration."

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ANNUAL REPORT OF BOSTON DISPENSARY.

The statistics of this institution for the year ending September 30, 1899 are as follows:

The number of new patients treated at the Central Office is 29,089, classified as follows: Medical Department: Men, 3,272; women, 4,763; children, 4,429; total, 12,464. Surgical Department: Men, 1,726; women, 1,027; children, 679; total, 3,432. Skin Department: Men, 566; women, 628; children, 444; total, 1,638. Department for Diseases of the Nervous System: Men, 448; women, 1,405; children, 247; total, 2,100. Department for Diseases of the Throat and Nose: Men, 821; women, 1,010; children, 664; total, 2,495. Department for Diseases of Women: Women, 1,216. Diseases of the Eye: Men, 309; women, 619; children, 355; total, 1,283. Diseases of the Ear: Men, 213; women, 312; children, 242; total, 767. Department for Diseases of the Genito-Urinary System: Men, 2,566; women, 9; children, 4; total, 2,579. Department for Diseases of the Rectum and Anus: Men, 130; women, 57; children, 1; total, 188. Orthopedic Department: Men, 134; women, 115; children, 42; total, 291. Mental Diseases: Men, 25; women, 43; children, 13; total, 81. Dental Department: Men, 164; women, 149; children, 242; total, 555.

The number of visits made by patients, old and new, at the Central Office, is 78,306, classified as follows: Medical, 34,332; surgical, 42,974; total, 77,306.

The number of patients treated in the Districts is 14,823, including 348 cases of midwifery, classified as follows: Men, 2,873; women, 5,480; children, 6,470; total, 14,823.

The results of treatment in the districts are as follows:

Discharged, cured or relieved	13,386
Removed to hospitals	1,210
Died	243
Remaining under treatment	98
	14,937
Under treatment at last annual report	114
	14,823
The number of visits made by District physicians	23,231
The number of patients treated at the Central Office and in the Districts	43,912
The number of cases of midwifery attended during the year	348
The number of cases of midwifery attended since July, 1856	10,114
Whole number of patients since October, 1796	1,462,774
Whole number of patients since July, 1856	1,343,611
Average daily attendance at the Central Office	252
Largest number present in one day, March 6th	437
Smallest number present in one day, September 20th	94
Number of recipes put up at the Central Office during the year	82,771
Number of house recipes	70,432
Number of District recipes	12,339
Largest number of recipes put up in one day, May 15th	437
Smallest number of recipes put up in one day, September 20th	112

Correspondence.

REPORT OF THE CONDITIONS IN THE PROVINCE OF SANTIAGO, CUBA.

WASHINGTON, September, 1899.

MR. EDITOR: — The report of Chief Surgeon Havard, of the Province of Santiago, Cuba, for the year since the establishment of the military department of that name, is of unusual interest and importance. The report is largely a chronological summary of events, important from a medical standpoint, as they occurred during the past twelve months. After describing the precautions taken to ensure comfort and prevent the occurrence of yellow fever on transports returning with the troops of the Fifth Army Corps and enumerating the hospitals established for the shelter of the sick which were left behind, he says, in part:

While the Fifth Army Corps was embarking for the United States, several regiments of United States Volunteer Infantry, or so-called immunes, were arriving in the department; the Second early in August, then the Third, the Fifth and the Ninth all landing at Santiago, while the Fourth arrived somewhat later at Manzanillo. These regiments had been raised in the hope that a large majority of their members would be yellow-fever immunes and could safely spend the summer in the tropics; as a matter of fact, very little attention appears to have been paid to this question of immunity by recruiting officers, and from inquiries made of captains I doubt whether there were more than an average of three or four true immunes in each company; subsequent experience showed that these regiments suffered as much as other troops from tropical diseases.

The Eighth Illinois and Twenty-third Kansas also arrived in August, and finally the Fifth United States Infantry, in two battalions. The second battalion of the Fifth came from Tampa in the transport *Knickerbocker*. It had four cases of yellow fever, which were taken to the Yellow-Fever Hospital; the transport was sent back on August 31st to the United States, with Acting Assistant Surgeon Bat Smith on board, for disinfection, while the battalion itself was camped on a hill two miles from the city and kept under strict observation. No further cases developed. The *Knickerbocker* had carried troops before during the campaign, and been reported as suspicious.

As it was intended to quarter the Fifth United States Infantry in the Mercedes Barracks, a large, comfortable brick and stone structure, which Spanish troops had previously occupied, and during the war transformed into a vast and crowded hospital, measures were at once taken to clean, disinfect and repair them thoroughly. A large number of Cubans were employed on this work until November, when the regiment, or as much of it as could be accommodated, moved in. There was no room for the regimental hospital, which was kept outside under canvas; later this hospital was done away with, and patients needing hospital treatment were conveyed directly to the General Hospital, an objectionable course which later caused the infection of the General Hospital.

The Second Immune was at first camped on the Alameda, near the water front, and in the city, where it suffered very much from malarial and thermic fevers, and to some extent from yellow fever, at least 20 per cent. being constantly sick. In October it was removed to Songo, and then to the Holguin District, where its health improved very much. The Fifth Immune was camped on dry, stony hills fully 200 feet above the bay, and apparently in an ideal site, being supplied with excellent water; but the rate of sickness, especially malarial fever, remained very high, reaching 30 and 40 per cent. One reason assigned for this, and the only apparent one (besides the well-known injurious effects of living under canvas in the tropics), was the presence of marshy lakes on the Aguadores River, nearly three miles distant. The Eighth Illinois and Twenty-third Kansas was sent to San Luis, where they remained. San Luis is about twenty-five miles from Santiago and 700 feet above the sea level; experience has shown that it is one of our healthiest stations, and that although the troops there labored also under the disadvantage of living under canvas their rate of sickness was generally under 10 per cent.

The commissioned medical officers of the immune and other volunteer regiments were men, in most cases, of ordinary professional ability, and, in all cases, ignorant of their special duties as medical officers, so that there was much suffering and disease in these regiments which could have been prevented by abler and more experienced surgeons.

Much has been written about the epidemic of yellow fever which prevailed in 1898 among the United States troops, from the first case at Siboney on July 6th to the last one at the Yellow-Fever Hospital on the bay in November. All evidence tends to show that the number of cases was very large, and that after a time isolation became impracticable, so that whole regiments were exposed to the infection; thus, toward the middle of August, I inspected the Seventh United States Infantry, camped near Cuevitas, and reported to be in an unusually sad plight; out of 740, 300 were sick, 250 with malarial fever and diarrhea and 50 with yellow fever; many other soldiers were reported to have had yellow fever and recovered, although within ten days six patients had died, presumably of this disease. An attempt had been made to separate infected cases, but a very imperfect one, although under the circumstances perhaps the best possible. In many regiments cases were recognized and isolated, but in many others cases were doubtless overlooked and treated as malarial fever. The fact that at least 75 per cent. of all officers and men were incapacitated, that able-bodied surgeons were few and many of them inexperienced, explains what otherwise would appear like incompetency on the part of the medical department. The great majority of cases were of a mild type, with a mortality of less than five per cent., that is, hardly as great as that of malarial fever we were struggling against at the same time, and much smaller than that of our typhoid-fever cases. The probable reason for this is that all troops were under canvas, scattered over many hills and freely exposed to air, sun and abundant rains, conditions which are much more favorable to the development of the parasitic plasmodium than to the bacillus of yellow fever.

Early in November information was received of the existence of an epidemic of small-pox in the District of Holguin. A sanitary commission, of which Assistant Surgeon R. S. Woodson was president, was appointed November 5th and immediately sent to the spot for the purpose of isolating and treating all cases of small-pox and vaccinating all non-immunes at Holguin and in surrounding country. The members of this commission worked with great zeal and success until February 1st, when the epidemic was declared stamped out. About 1,300 cases of small-pox had been treated and 12,000 people vaccinated.

In order to carry out the instructions of the surgeon-general, a board of commissioned medical officers, of which Surgeon J. J. Archinard, United States Volunteers, was president, was appointed November 7th, in Santiago, to examine into the qualifications of acting assistant surgeons. It had been quite evident during the summer and fall that many of them, contracted with hurriedly to answer an urgent demand, lacked the education, training and experience needed to perform successfully the duties of medical officers, and that the interests of the service required their elimination. Several resigned on receiving notification to appear before the board; four others were found deficient and their contracts annulled as soon as their services could be spared.

Pursuant to instructions from Washington, a board was appointed, March 1st, to direct the work of disinterring the bodies of all dead American soldiers buried at the several battlefields and near the various hospitals in the vicinity of Santiago. It was found that, in all cases where soldiers had been buried without being placed in a box or coffin — and they were the vast majority — nothing but bones remained; these were gathered in a sheet and dipped into a strong solution of corrosive sublimate, then placed in sawdust impregnated with the same solution; casket and box were then disinfected on the outside. All laborers engaged in this work were Cuban immunes; while at Siboney, disinterring the bodies of the men who had died of yellow fever, they were kept in camp and not allowed to return to their homes for the several days that the work lasted, and then only after disinfection of their clothing. This work continued for nearly two months, or until 1,091 bodies, that is, all those buried at the Bay Yellow-Fever Hospital, had been exhumed. As the season was then too far advanced, a large number of filled caskets could not be transported to the United States and are now kept in a shed, under proper guard, on the western shore of the bay. It is a most remarkable and melancholy fact that, of the bodies buried during the active period of the campaign and up to the time of re-embarkation of the Fifth Corps, 134, or over one-fourth, when exhumed, bore no name and gave no clue to their identity. This was specially the case on battlefields; thus at El Caney, there was a solid row of 40 unknown soldiers; but it also occurred at some of our hospitals, notably the large field hospitals first established near General Shafter's headquarters, where the necessary time and trouble to mark the graves should have been taken. This deplorable condition shows the necessity of adopting the German system of identification, the only effective one, whereby each soldier, on being mobilized for a campaign, is made to wear a medallion on which are engraved name, home, rank and regiment, suspended from a chain tied around the neck. So long as the skeleton endures, this medallion will remain fastened to the spinal column and yield its information.

A few words should also be said of the department medical supply depot. With such a large number of troops coming and going, garrisoning many posts, and so frequently transferred from one place to another, it may be easily realized that the work of supplying them was no small task. During the year there has never been any shortage in medical supplies; all the requisitions upon the surgeon-general were honored, so that medical officers in the department have been able to obtain, if not always what they wanted, at least what they needed. Some medical officers, fresh from civil life and accustomed to the almost exclusive use of a few drugs, would sometimes want these in excessive quantities and feel much aggrieved because such individual preferences could not be wholly indulged. It is also true that others were extravagant and wasteful in the use of all supplies, apparently under the delusion that there could be no limit to what was provided by the Government. There may have been, therefore, some dissatisfaction in certain quarters, but it was of the kind that, under the circumstances, was inevitable.

The general work of sanitation throughout the Province is well known and needs no description here. It is especially in the City of Santiago itself that it was carried on with system and thoroughness, under the supervision of four medical officers whose principal duty was to make house-to-house inspections.

The careful, everyday cleaning of Santiago had raised the hope that yellow fever would probably not break out this summer, except, perhaps, in a few sporadic instances; this hope was doomed to disappointment. On June 15th an American civilian was found with yellow fever in a dirty lodging-house where he had slept for several weeks, in Enramadas; he was conveyed to the Yellow-Fever Hospital, where he died the next day, the post-mortem examination confirming the diagnosis. On the 16th five enlisted men from the Fifth Infantry, under observation at the General Hospital, were also taken to the Yellow-Fever Hospital, two from the band quarters, one from the guardhouse, one from the commissary storehouse and one from the city. On the 17th another case occurred in the guardhouse; on the 18th one more in the guard-house and another in some other part of the building. It had become almost certain that the Fifth Infantry Barracks were infected in several places, especially the guard-house and band quarters. These had been vacated on the 17th, and orders issued prohibiting all enlisted men to leave the limits of the post. On the 19th when all doubts had been removed, the necessity to vacate the entire barracks was urged upon the commanding officer, recommending that, of the four companies, three and the band be sent at once into the country, and only one company kept on the outside parade grounds, as far as possible from the barracks. The commanding officer, in the absence of the department commander, stated that there were special reasons for keeping as many troops as possible in or near the city and that he could only spare two companies. Accordingly an order was issued on the 20th for the immediate evacuation of the barracks; Companies M and C were sent, after disinfection of clothing and baggage, to a camp on the Morro road, two miles away, while Companies A, G and band remained on the parade ground, well outside the barracks. It may be here stated at once that, with one or two exceptions which can be accounted for, no new cases developed in Companies M and C. But it was different with the other two companies, which, either from imperfect disinfection or reinfection due to the proximity of the barracks, continued to furnish several cases every day. It became evident that they must be moved again and farther away; the order was issued on the 30th, directing them to proceed by rail to Boniato, five miles north of the city, after fresh disinfection. This practically put an end to the fever among the troops, as no new cases developed five days after the establishment of the camp. Worth mentioning is the fact that the company of infantry and prisoners at Morro Castle, the oldest structure on the island, guarding the entrance to the bay, have always enjoyed excellent health and never had a suspicious case. The disinfection of clothing and baggage referred to was especially effected on the disinfecting ship of the Marine-Hospital Service, under charge of Surgeon Parker, who always gave us his most cordial and efficient co-operation. To a more limited extent, it was also carried on in the disinfecting steam chest of the General Hospital and an improvised formaline chamber.

Officers and soldiers were not the only sufferers in this epidemic; American civilians, mostly Government employees, and a few Spaniards, were likewise attacked, cases occurring in hotels, lodging-houses and even private houses, so that, by the end of July, at least a dozen distinct foci of infection could be traced.

The several reasons advanced to explain this epidemic, such as the disinterment of yellow-fever bodies, the digging of streets to lay pipes, etc., I am not inclined to attach much importance to. That the germs have always been present in many places is incontestible, but it seems probable that their degree of activity depends much upon climatic conditions. This year, in this district, was remarkable for the dryness (or rather absence of rain) and intense heat of winter and spring, and this unusual heat, I am disposed to think, was the principal factor in developing and energizing the bacillus so early in the season.

General conclusions. — In my opinion, there is no such thing as acclimatization in Cuba for North American soldiers; a few months, or even a year or two, will give them no immunity whatever against tropical diseases, and may benefit them only by teaching the absolute necessity of temperate habits. Only one thing immunizes against yellow fever, and it is an attack of the disease. Malarial fever prevails all over the province and no white or colored American soldier is safe against it; it decreases somewhat in the winter months, but much less than had been expected, while altitude, if more than 300 or 400 feet, has a distinct effect upon it. All American troops coming to Cuba, at any season, will suffer more or less from malarial fever and other tropical diseases, especially if camped under canvas, being then exposed to many great and sudden changes of temperature; thus, during the winter, the Fifth Immunes, in tents, had a rate of sickness at least twice as great as that of the Fifth Regulars, in barracks. It seems possible, by building comfortable barracks on high and salubrious sites, to reduce malarial fever to a minimum of three or four per cent. As to yellow fever, it may break out in any town in spite of all ordinary precautions, and soldiers can only avoid it by remaining in the country, either in barracks or in tents.

METEOROLOGICAL RECORD

For the week ending September 30th. in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...24	30.32	58	66	49	69	77	73	S.W.	S.	4	9	O.	C.	
M..25	30.06	64	75	54	92	99	96	S.W.	E.	4	9	O.	O.	
T...26	29.76	64	70	59	97	90	94	E.	S.	10	9	G.	F.	.16
W..27	29.97	58	65	50	81	70	76	S.W.	S.W.	12	11	F.	C.	
T...28	30.23	58	70	46	69	70	70	S.W.	S.	4	11	C.	C.	
F...29	30.10	63	72	54	75	89	82	S.	E.	12	6	O.	O.	
S...30	30.04	53	61	45	81	57	69	W.	W.	15	8	O.	C.	1.26
☞														

* O., cloudy; C., clear; F., fair; G., fog; H. hazy; S. smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, September 30, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1080	417	11.16	10.62	4.95	1.41	2.34
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	364	129	11.61	14.85	3.24	1.89	4.86
St. Louis . . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	203	81	16.17	8.82	6.37	2.94	4.41
Baltimore . .	506,389	181	56	20.35	12.65	5.50	—	2.75
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	102	43	24.75	3.96	9.90	12.87	.99
Washington .	277,000	115	39	18.92	8.60	6.88	4.30	6.02
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	50	22	26.00	10.00	12.00	6.00	2.00
Nashville . .	87,754	35	11	17.16	8.53	11.44	5.72	—
Charleston . .	65,165	35	14	14.30	11.44	8.58	5.72	—
Worcester . .	108,240	24	12	16.66	4.16	12.48	—	4.16
Fall River . .	95,919	41	24	29.28	21.96	24.40	2.44	—
Cambridge . .	89,724	28	18	25.00	7.14	10.71	3.57	10.71
Lowell . . .	88,641	37	15	21.60	13.50	13.50	2.70	—
Lynn	66,703	17	2	11.76	5.88	11.76	–	—
New Bedford .	66,340	20	8	20.00	—	15.00	5.00	—
Somerville . .	66,101	20	7	20.00	5.00	15.00	5.00	—
Lawrence . .	57,263	24	10	33.33	16.66	16.66	—	16.66
Springfield . .	56,501	14	3	14.28	14.28	—	14.28	—
Holyoke . . .	43,424	12	8	33.33	16.66	25.00	–	8.33
Brockton . .	37,278	10	4	20.00	10.00	—	—	10.00
Salem	36,883	8	1	25.00	–	12.50	—	12.50
Malden . . .	34,613	11	2	—	9.09	—	—	—
Chelsea . . .	33,468	9	2	—	11.11	—	—	—
Haverhill . .	32,022	9	3	—	—	—	—	—
Gloucester . .	30,589	7	3	—	—	—	—	—
Newton . . .	29,716	4	1	—	25.00	—	—	—
Fitchburg . .	29,438	8	2	12.50	—	—	—	12.50
Taunton . . .	28,167	14	—	21.42	28.56	14.28	—	7.14
Everett . . .	25,338	13	2	23.07	7.69	—	7.69	—
Quincy . . .	23,549	4	1	25.00	—	25.00	—	—
Pittsfield . .	22,643	3	—	–	—	—	—	—
Waltham . .	22,296	3	—	—	—	—	—	—
North Adams .	20,971	1	—	—	—	—	—	—
Chicopee . .	17,842	7	3	14.28	11.28	—	14.28	—
Medford . . .	16,511	7	1	—	—	—	—	—
Newburyport .	14,915	4	1	—	—	—	—	—
Melrose . . .	14,032	3	1	—	—	—	—	—

Deaths reported 2,545; under five years of age 952; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 308, consumption 276, acute lung diseases 206, diarrheal diseases 175, diphtheria and croup 80, typhoid fever 73, whooping-cough 24, cerebro-spinal meningitis 11, measles 9, scarlet fever 4.

From whooping-cough New York 11, Philadelphia 5, Providence 3, Boston 2, Pittsburg, Fall River and Cambridge 1 each. From cerebro-spinal meningitis New York 5, Boston 2, Philadelphia, Baltimore, Providence and Worcester 1 each. From measles New York 9. From scarlet fever New York 2, Boston and Brockton 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending September 23d, the death-rate was 20.6. Deaths reported 4,506; acute diseases of the respiratory organs (London) 138, diarrhea 673, diphtheria 87, fever 81, whooping-cough 48, measles 41, scarlet fever 31, small-pox (Hull) 3.

The death-rates ranged from 8.5 in Swansea to 28.6 in Sunderland; Birmingham, Bradford 17.2, Cardiff 16.8, Gateshead 26.4, Huddersfield 10.6, Hull 21.8, Leeds 21.5, Liverpool 27.9, Manchester 26.4, Newcastle-on-Tyne 27.6, Nottingham 22.7, Portsmouth 19.7, Sheffield 26.0, West Ham 21.0.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 30, 1899.

F. B. Hancock, assistant surgeon, detached from the "Eagle," and when relieved, ordered home to wait orders.

C. A. Crawford, assistant surgeon, detached from the "Massachusetts" and ordered to the "Eagle."

R. S. Blakeman, passed assistant surgeon, promoted to passed assistant surgeon from May 27, 1899.

L. G. Louis, pharmacist, retired from September 30th.

E. Eagling, pharmacist, ordered to the Naval Hospital, Yokohama, Japan, immediately.

M. C. Drennan, medical director, detached from the Naval Recruiting Rendezvous, Philadelphia, Pa., and ordered to Washington, D. C., October 11th, for examination for retirement, and then home and to wait orders.

E. J. Grow, assistant surgeon, detached from the "New Orleans" and ordered to the "Massachusetts" immediately.

SOCIETY NOTICE.

Suffolk District Medical Society. — The Section for Clinical Medicine, Pathology and Hygiene will hold its meeting at 19 Boylston Place, Wednesday, October 18, 1899, at 8 p. m.

At 8 o'clock: Dr. J. L. Morse will report "Some Unusual Cases of Angioneurotic Edema in Infancy."

At 8.15 o'clock: Dr. M. P. Smithwick, "Nitrate of Silver in Hyperchlorhydria."

At 8.30 o'clock: Dr. R. W. Greenleaf will present a paper entitled "The Psychic Factor in Disease." Dr. E. W. Taylor will open the discussion.

H. F. Vickery, M.D., *Chairman*.
J. Bergen Ogden, M.D., *Secretary*,
Harvard Medical School, Boston.

CORRECTION.

Dr. C. W. Townsend writes that he does not recommend "warm butter" for hastening the process of desquamation in scarlet fever, as erroneously stated in our issue of October 5th, p. 348, second column, but does recommend warm baths.

RECENT DEATHS.

Henry C. Cunneely, M.D., health warden of the city of Hoboken, N. J., died on October 1st, at the age of thirty-eight. He was a native of Hoboken, and a graduate of Bellevue Hospital Medical College in the year 1886.

Joseph H. Smith, M.D., who was at one time physician at Sing Sing Prison, and later at Dannemora Prison, died at Plattsburgh, N. Y., on October 4th, aged seventy-eight years.

BOOKS AND PAMPHLETS RECEIVED.

Archives of the Röntgen Ray, February and May, 1899.

The Annual Report of the Health of the Imperial Navy for the year 1896. Tokyo.

A Case of Large Solitary Tubercle of the Heart. By A. W. Hoisholt, M.D., Stockton, Cal. Reprint.

Transactions of the American Climatological Association for the year 1899. Vol. XV. Philadelphia. 1899.

Study of Some Conditions that Lead to Fibroid Changes. By Willis S. Anderson, M.D., Detroit, Mich. Reprint.

Umbilical Hemorrhage, with Report of Two Cases. By H. Brooker Mills, M.D., Philadelphia. Reprint. 1899.

The Facial Nerve in its Relations to the Aurist. Reflex Cough. By George L. Richards, M.D., Fall River, Mass. Reprints. 1899.

The Ninth Annual Report of the Eye, Ear, Nose and Throat Hospital of New Orleans, La., January 1, 1898 to December 31, 1898.

American Pocket Medical Dictionary. Edited by W. A. Newman Dorland, A.M., M.D. Second edition, revised. Philadelphia: W. B. Saunders. 1899.

Original Articles.

ACUTE ABDOMINAL SYMPTOMS DEMANDING IMMEDIATE SURGICAL INTERVENTION.[1]

BY MAURICE H. RICHARDSON, M.D., BOSTON.

I HAVE chosen the subject of abdominal emergencies, not only because it is one of wide interest and because so many questions connected with treatment are still unsettled, but because the initial symptoms which attend abdominal emergencies are first observed by the general practitioner, and must be interpreted first by him. Upon his common sense, his experience, skill and judgment, will in many cases depend the result, influenced as it must be by the decision of a moment.

This subject is always opportune for at least one reason — that even to-day, after years of discussion and of experience, acute abdominal lesions still possess a deplorable mortality. That there must always be a considerable mortality cannot but be expected. That such a mortality is theoretically unavoidable, however, must be emphatically denied. The lesions to be considered are with one or two exceptions curable; but the outlook varies with the promptness of intervention. They are practically all fatal if left to themselves. Intervention, to be successful, must be early; so early that no man, skilful and experienced though he may be, can more than hazard a guess as to the exact nature of the lesion. The discussion is therefore narrowed down to a consideration of symptoms rather than diagnosis — initial and obscure symptoms rather than late and positive diagnoses.

Unfortunately, at the critical period of invasion, the patient is not always seen even by the family physician, and too often the favorable moment for operation is lost. Moreover, even when seen in season, the case often presents features by which its gravity is masked. Too often, it must be admitted, symptoms of the gravest nature are misinterpreted by even the most experienced observers, or, if understood, are watched in the vain hope that they are not so bad as they seem. Finally, it must be added, the dangers of the operation itself, even when skilfully performed, are by no means small.

It is obvious that the first and most important factor in a specific case is loss of time; for the remedy cannot be suggested or applied with any degree of success unless an early opportunity to do so is given. The loss of time dependent upon the patient or his friends can hardly be prevented. Yet it is questionable whether it would be wise to disseminate widely the initial symptoms of so common and serious an abdominal disease as appendicitis; for if we should do so, to the nervous and apprehensive every transitory colic would be the signal for great alarm. On the other hand, ought not a word to be said condemnatory of those lay journals which lead to the popular belief that appendicitis is a fad — a belief that encourages families to withhold surgical aid which in hundreds and hundreds of patients offers the only chance of recovery? I am impressed every day by the reckless disregard of professional warnings, when I see patients dying of appendicitis, not as the result of operation, but as the result of delay on the part of friends, who, thinking the disease a fad and the operation unnecessary, had refused to have a surgeon until it was plain to the layman, even, that the patient was dying. Fortunately, however, the onset of acute abdominal lesions that must be treated surgically, if at all, is so ominous of disaster that even the layman is usually alarmed.

Before discussing those symptoms of peritoneal invasion by which acute abdominal lesions first manifest themselves, it seems worth while to pass in review the lesions themselves. They comprise all diseases of the abdominal organs which may suddenly, with or without warning, place life in jeopardy.

Acute abdominal emergencies, as I have observed them, comprise three general groups:

I. Those in which hemorrhage is the chief factor.
II. Those in which peritonitis is the chief factor.
III. Those in which intestinal obstruction is the chief factor.

These three classes include almost all possible emergencies. Certain lesions may belong to more than one group — for example, lesions which, like volvulus, cause, first, intestinal obstruction, and later, necrosis of the intestinal wall.

I. Abdominal hemorrhages are either
  (1) Post-operative.
  (2) Traumatic.
  (3) From ruptured extra-uterine pregnancies.
  (4) From ruptured hemorrhagic cysts.
  (5) From gastric ulcers.

II. Peritonitis may be owing to
  (*a*) Extravasations from intestinal tract occurring in
    (1) Appendicitis.
    (2) Perforating gastric ulcers, benign and malignant.
    (3) Perforating intestinal ulcers.
      Tubercular and simple.
      Cancerous.
      Typhoidal.
    (4) Trauma.
      Rupture of intestine.
      Stabs.
      Gunshot wounds.
  (*b*) Extravasations from other viscera occurring in
    (1) Acute cholecystitis.
    (2) Pancreatic necrosis.
    (3) Rupture of bladder.
  (*c*) Rupture of abscesses.
    (1) Of the liver.
    (2) Of the kidneys.
    (3) Of the Fallopian tubes.
    (4) Of other regions.
  (*d*) Ovarian and other tumors with twisted pedicle.
  (*e*) Acute pancreatitis and fat necrosis.

III. Intestinal obstruction with necrosis may be owing to
  (1) Internal strangulation.
  (2) Volvulus.
  (3) Intussusception.
  (4) Mesenteric embolism and thrombosis.
  Simple obstructions without necrosis may be owing to
  (1) Bands.
  (2) Foreign bodies, including enteroliths.
  (3) Pressure from tumor external to the intestine.
  (4) Strictures of the intestine.

In addition to the foregoing there are certain general infections without local causes; such are the forms of rheumatic and chemical peritonitis; peritoneal manifestations of general septicemias.

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[1] An oration before the Maine Medical Association, June 8, 1899.

Other acute abdominal lesions may cause violent disturbances, attended by severe pain, chief among which are hepatic and renal colic. Among the more unusual lesions are acute pancreatic diseases, — hemorrhage, suppuration, and fat necrosis, — mesenteric embolism and thrombosis. These conditions are rare, but their possibility must be borne in mind. In practically all the diseases enumerated above there is a possibility of cure if the remedy is applied early enough. In some the prognosis is extremely favorable; in others recovery is rather a hope than an expectation; in all the favorable moment for intervention is at the very beginning of the symptoms.

My experience in acute abdominal surgery has been large enough to impress me deeply with the difficulties and the importance of this subject. By far the largest number of deaths in the general surgical practice are due to some intra-abdominal cause. One might almost say, with reference to surgery of the comparatively young and strong, that barring deaths from peritonitis already existing at the time of operation there is practically no mortality in general surgery to-day. Yet in many of the lesions under consideration the mortality is still excessive.

I have not searched exhaustively the records, but the following is an approximately correct summary of my experience. The number of deaths is, I think, accurate, for naturally they made a deep impression upon me.

Of post-operative concealed hemorrhages, I have had one case, from slipping of a ligature after ovariotomy for a small cyst. The patient was pulseless. After intravenous infusion of salt solution the abdomen was reopened and the bleeding artery tied. Recovery followed. I have had several cases of post-operative hemorrhage in which the abdominal wound was open. In these the nature of the accident admitted of no doubt and clearly indicated the proper remedy.

Extra-uterine pregnancies have furnished the greatest number of intra-abdominal hemorrhages. The number of deaths has been seven, of recoveries between 20 and 30. As in the other lesions, the deaths chiefly interest us. Of the seven patients, two died before I arrived at the house. Two were beyond help when first seen. These two I should now operate on, after filling the veins with salt solution. Three died after operation. Two of these three cases were desperate, and recovery was hardly expected; the third was a favorable case that was infected at the time of operation, the preparations having been, from the necessity of great haste, imperfect.

There have been two cases of hematosalpinx in which no evidence of pregnancy could be found. Both patients recovered.

I have seen two cases of excessive hemorrhage from gastric ulcer — one ten years ago and one recently. The first patient died suddenly in the course of a suspected gastric ulcer from combined perforation and hemorrhage; the second recovered under palliative treatment.

In appendicitis, the most important lesion because the most common, I have had 904 cases of all varieties, with 103 deaths. In 331 of the acute cases treated by operation, 72 died; of 189 acute cases not operated upon, 31 were moribund. In 238 cases of chronic appendicitis in which operation was performed in the interval, there was no death. Removal of the appendix may therefore be said to be, by itself, an operation of slight mortality. It is, moreover, safe to assert that nearly all of the 103 fatal cases, some of which were operated upon and some of which were not, would have recovered if the surgical intervention had been early enough. This condition is based upon various considerations that cannot be discussed at this time. Had all the patients been operated upon at the time of the initial pain, the vast majority would have recovered.

Extravasations from gastric ulcers have been extremely few, considering the frequency of this lesion All have been recent cases; two in Brockton in patients apparently well, though not without certain gastric symptoms. One patient recovered after suture of the perforation; the other, after she had entered well upon convalescence, died from a second perforation. Two other cases came to my attention recently at the Massachusetts General Hospital. Both were clearly perforations from gastric ulcers. Both patients died after exploration. In neither case was the outlook encouraging, but intervention seemed on the whole best. I did not see either operation, but the lesions were such as to have permitted recovery had the remedy been applied sooner. As it was, they were operated upon at the earliest practicable moment. Perforation from a cancerous ulcer I have seen but once. In this case an infection of the lesser omental bursa was drained successfully through an intercostal space in the left side, low down, but the patient in a few days succumbed.

From intestinal ulcerations I have seen two perforations, both fatal. One was from a benign ulcer of the transverse colon. The necessity for intervention was immediately recognized, and the abdomen opened. The abdominal cavity was, however, filled with fecal matter, chiefly beans. The wound was drained, suture being impracticable. The patient did well for a week, and then succumbed to a renewed extravasation. The other case was extravasation above a cancerous stricture. In this case the patient died after cleansing of the peritoneal cavity and drainage.

I have never met with a perforation of typhoidal ulcer, though there have been one or two at the Massachusetts General Hospital — one successfully operated upon.

From traumatism I have seen several interesting cases of perforation of the intestines, all but one fatal. In one case the lesion was caused by a piece of flying steel, not half the size of the finger-nail. The intestine was wounded, and there was considerable fecal extravasation. The wound was found and sutured, but the patient did not escape a fatal general peritonitis. In another instance an insane patient thrust his silver-plated dinner-knife up his rectum, which it perforated. I removed the knife from the abdominal cavity, which was extensively infected. The patient succumbed to shock in a few hours. In several instances of stabs recovery has followed exploration, the intestine being intact. In one instance death followed the exploration of an infected abdomen after rupture of the intestine by a kick. In several the patient was moribund from a similar lesion, caused by the passage of a heavy team over the body. In one instance a boy recovered from this accident, but he died later from an operation by another surgeon to close the resulting fecal fistula.

But one case of gunshot wound has come to operation by myself, though I have seen several operated upon by others. In my case the stomach was grazed and the colon perforated. Recovery followed operation. In two cases of gunshot wounds the liver and kidney were perforated. In one the right kidney was removed; in the other the right kidney was drained. In the former case the patient died and in the latter the patient recovered.

Acute cholecystitis has furnished some 17 examples of local infection, one or two of which later became general. In none of them was there a perforation, but in several the gall-bladder wall was on the point of rupture. This has been a most brilliant field, both for diagnosis and for treatment, all but three of the cases recovering after drainage.

Acute disease of the pancreas has been suspected in several cases, but demonstrated in none.[2] In one instance there was a retroperitoneal hemorrhage about the pancreas, but its source could not be determined. The patient died some days after exploration. In one instance an epigastric abscess suggested a pancreatic origin. Recovery followed drainage, and the etiology was never determined.

Rupture of the urinary bladder has come to my notice twice. In both cases the rupture was extraperitoneal and received only drainage.

I do not recall any instances of the rupture of abdominal abscesses other than appendicular or tubal. Such accidents may of course occur, however, and must be considered. Pelvic abscesses, owing to infections of the Fallopian tubes, have presented numerous deplorable examples of rupture and general peritonitis. The mortality has been great when rupture has taken place spontaneously. Even after laparotomy and drainage, the mortality has been considerable. Next to appendicitis, this cause has contributed the largest number of deaths.

In one or two instances sloughing fibroids have given rise to alarming symptoms, which prompt intervention has relieved. Fibroids, complicated by pelvic abscess, have presented a large mortality. Other abscesses may occur when little suspected. They present a source of infection which must be borne in mind. In two instances I have found a large tubercular abscess of the mesentery, in one an acute tuberculosis of the mesenteric glands, which I diagnosticated as acute appendicitis. All three patients recovered.

Localized peritonitis, dependent upon extravasations of unusual origin, occasionally occurs. In one case a patient developed epigastric pain after swallowing a gold pencil, an open safety-pin of large size, a steel crochet-needle and a paper of pins. Removal of the safety-pin, which was found sticking through the pylorus, was followed by recovery. In another case I found a large epigastric tumor of septic origin, in a girl who had been in the habit of swallowing rubber gum, after chewing it. Drainage was followed by recovery, though no gum was found.

Intestinal obstructions, dependent upon causes which must produce intestinal necrosis, are among the most important of abdominal emergencies. The mortality in my experience is deplorable, and especially so because of the essentially favorable issue to be expected by early intervention. Of internal strangulation with necrosis, I have seen at least two, both fatal. In one five feet of small intestine was resected; in the other the patient was moribund; in both a general peritonitis was in full progress. In another instance the symptoms of acute obstruction were found after laparotomy to be dependent upon a strangulated inguinal hernia which could not be detected before operation. Contrasted with these are at least six external strangulations with gangrene of the intestine. In all but one recovery followed resection of the gangrenous intestine. General peritonitis was absent in all these cases, and hence the good results.

I have had but one case of volvulus. This was in a man suffering from an idiopathic dilatation of the sigmoid flexure. The twisted coil filled the abdomen. It was untwisted and fixed in proper position by means of sutures, with six months' relief. Recurrence of the twist required resection of the enormously dilated coil. The patient has been perfectly well since.

Of intussusceptions I have seen half a dozen cases. All that I have operated upon, or in which I have assisted at the operation, have resulted fatally. Of operations by my colleagues at the Massachusetts General Hospital two cases (Warren's) have recovered; also one by Brooks and one by Harrington. In the fatal cases the operation was too late.

Cases of mesenteric embolism and thrombosis have always been suspected rather than demonstrated. All my own cases have been fatal. One brilliant case (Elliot's) I had the opportunity of seeing. In this case the patient recovered after the removal of four feet or more of gangrenous intestine.

Simple obstructions without intestinal necrosis should present the most favorable outlook. Yet, unfortunately, this class of cases has had a high mortality. As the alarming symptoms of gangrene and general peritonitis have not been persistent these cases have been allowed to go on, until the patient has been so reduced by simple obstruction that he could not survive even a rapid operation. In one case of operation for obstruction by a band, in an old man, death followed from shock. In another the band divided at operation probably had no etiological influence, but the operation was fatal. In another nothing was found, but recovery followed. In still another, operated upon by another surgeon, nothing was found, but the exploration was fatal.

One case of operation for intestinal obstruction by gall-stone was quickly fatal from shock, the patient, a man of sixty-five, being extremely reduced by long obstruction. Another, operated upon by my first assistant, Dr. Brewster, was caused by a mass of hair in the small intestine. The obstruction had gone on for two weeks. The child was so feeble that she died a few hours after a rapid and successful operation.

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[2] The difficulties of diagnosis are well illustrated by the following case, seen July 18th, some weeks after reading this paper: A girl of fifteen was suddenly seized with pain in the epigastrium extending over the abdomen. There was profound shock, great tenderness in the epigastrium, and prominence, with vomiting. There had been no history to suggest gastric ulcer or appendicitis, though she at times had epigastric pain before breakfast. Though the patient seemed hopelessly infected, I decided to open the abdomen in the epigastrium, in hopes of at least giving exit to the extravasation, if the patient's strength would not permit repair of the lesion. Having seen several atypical cases of acute perforative gastric ulcer, I expected to find perforation of the stomach. The incision led me straight to the source of the extravasation — an acute hemorrhagic pancreatitis with fat necrosis. Much to my surprise, the patient recovered from the operation. She did well for four weeks, during which time there was an excessive discharge of pancreatic fluid, masses of fat and necrotic tissue. On July 21st she died suddenly. There was no autopsy. This was evidently a lesion in the epigastric region immediately threatening life — demanding, as the only chance for cure, prompt intervention. No diagnosis was possible. The real lesion was not even suspected, for acute hemorrhagic pancreatitis seemed a disease which was not in the least likely to occur in so young a girl.

Obstruction caused by the presence of tumors has been very rare. In one case a tumor of the inner wall of the cecum (a lipoma) caused an intussusception. The intussusception was reduced and the tumor removed by incision into the cecum. The patient died in a day or two. I have seen partial obstruction due to the presence of tumors. In such cases the mortality has been simply that of the removal of the tumor.

Resections for obstructions from stricture of the intestine suddenly plugged have been encouraging. Even after the removal of large portions of the intestine, recovery has been the rule. Death has in my practice occurred in but four instances, in one case after removal of a large solid ovarian tumor through which the descending colon ran; in another after resection of a tubercular stricture of the small intestine in a young girl; in a third after removal of a carcinoma of the descending colon in a patient with general peritonitis; in a fourth, an old lady, after resection of the splenic flexure of the colon, though the joint was perfect and there was no peritonitis. Treatment of acute symptoms, caused by the sudden stoppage of a stricture, has been almost invariably successful when an artificial anus has been made.

Among the resections of the intestine for various causes which I have performed may be mentioned three cases of resection of the ileocecal valve, a complete resection of the sigmoid flexure for idiopathic dilatation of the colon, besides the case already mentioned in which resection was performed for chronic volvulus. One resection of the pylorus for cancerous stricture, four pyloroplasties for benign stricture, and one total extirpation of the stomach, all have been successful, though in the two malignant cases the patients died eventually of recurrence.

Not included in the foregoing are those emergencies dependent upon certain unusual peritoneal infections. Among them there have been several of peritonitis, in which no cause could be found at post-mortem section — cases belonging to the so-called rheumatic or chemical type. In one instance I found a general peritonitis dependent upon a facial erysipelas, transmitted possibly through the Fallopian tubes. An early exploration saved this patient.

There remains finally the class of movable tumors with long pedicles, in which the circulation is shut off by the revolution of the tumor about this pedicle. This accident is a not infrequent source of abdominal emergencies. It belongs to the category of the slowly fatal, the slowly infectious lesion, though occasionally fulminating. Hence the brilliancy of operative treatment. I have operated upon eight or ten of these cases with but one death. In many the diagnosis was wrong, the exploration being determined upon because of the urgency of the symptoms, rather than a clear recognition of their causes.

(*To be continued.*)

The Johns Hopkins Medical School. — It is stated in the *Medical Record* that the Johns Hopkins Medical School has opened with thirty five women in the school, six of whom are freshmen, with fourteen in the graduating class. In the first class that graduated there was one woman. Seven women in all have taken their degree from this school, and nearly every one now holds the position of resident physician in some well-known hospital in some part of the country.

THE TREATMENT OF CEREBRAL TUMORS.[1]

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(Concluded from No. 15, p. 363.)

Bergmann has definitely committed himself to the opinion that it is not right to operate on a gumma; Horsley, on the other hand, says that the only way to treat a gumma is to remove it. Pathology and clinical experience teach us that even purely syphilitic processes in the brain are not always removed by antisyphilitic treatment, while the lesions secondary to such processes are of course unaffected. Antisyphilitic remedies may diminish the cell infiltration and thus relieve the symptoms; they do not affect the fibrous tissue of cicatricial character which helps to make up the gumma, although they may cause it to shrink, by lessening cell infiltration, so that it becomes a somewhat inert mass. This is well illustrated by a case at the Boston City Hospital for which I am indebted to Dr. C. F. Folsom. A woman entered with symptoms of a tumor in the Rolandic region and with a definite history of syphilis. After antisyphilitic treatment she left the hospital apparently well. In two or three weeks, after much indulgence in alcohol, she returned with her old symptoms, became comatose and died. A large gumma was found in the Rolandic region, which was clearly not a development of the last three weeks of her life. Treatment on her first admission had relieved the symptoms, but the gumma remained, to be roused to fresh activity later.

The statistics of the operative treatment of gummata, furthermore, are better than for any other form of growth. Out of 10 cases operated on, only one died, 2 improved but the growth recurred, 2 were improved and 5 recovered.

In former times Bergmann claimed that tubercular growths also were not to be operated on. I have elsewhere emphasized the well-known fact that so-called solitary tubercle is often associated with tubercular deposits in the meninges and that the growths are also more apt to be multiple than solitary. Theoretical considerations, however, must yield before the fact that one of Horsley's patients was well six years after the removal of a tubercular growth. The results of operation in other cases, too, will compare favorably with those of other growths, as the table will show; 3 recoveries and 4 improvements to 5 deaths in 14 cases.

In point of fact the growths which present the greatest dangers from the operative point of view are not gummata or tubercular growths, but the forms which have been more frequently operated on than any others, sarcoma and glioma. The infiltrating character so often seen in these growths makes their complete removal much more difficult and hazardous, (45 out of 52 partial removals were sarcoma or glioma), and the tendency to recurrence after supposed complete removal is also marked. If, therefore, we could be certain of the nature of a growth we should hesitate longer about operating on sarcoma and glioma than on tubercular growths or gumma. Horsley wisely advises early operation, if any be done, so as to attack the tumor before it has become large and

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[1] Read before the Section of Neurology of the American Medical Association at Denver, June, 1898, and before the Surgical Section of the Suffolk District Medical Society, November 3, 1898.

TABLE XI.

ONE HUNDRED AND ELEVEN CASES WHERE A GROWTH WAS NOT FOUND (INCLUDED IN TABLE V).

Region operated on.	Recovered.	Improved.	Improved. Died later.	Not improved.	Not stated.	Died.	Tumor found.
Frontal.							
Previously collected, 2. Knapp. Op. cit.						2	
Armitage. Lancet, November 26, 1895		1					Second and third frontal.
Hahn and Ruhemann. Deutsch. med. Wochenschr., April 16, May 28, 1896,			1				Pons.
Jaboulay. Arch. prov. de chirurg., i, 61, 1893				1			Left ventricle.
Springthorpe. Australasian Medical Journal, p. 518, 1893						1	Temporal.
Starr and Weir. Medical News, August 7, 1897						1	Temporal.
Central.							
Previously collected, 8. Knapp. Op. cit.			2			6	
Audeoud. Rev. méd. de la Suisse Rom., xlii, 753, 1893			1				Median aspect.
Brower and Bishop. Transactions of Chicago Pathological Society, i, 61						1	Median aspect.
Bruns. Op cit., p. 226			1				Deep-seated.
Cassaët. Arch. Chir. de Bordeaux, September, 1895						1	Second frontal.
Clark. Glasgow Medical Journal, September, 1897						1	Superior parietal.
Cottet and Marly. Bull. de la Soc. Anat. de Paris, November, December, 1897						1	Paracentral lobule.
Courtney. Unpublished						1	Frontal base.
D'Allocco Riforma medica, xiii, 4, 711, 1897			1				Thalamus.
Deaver and Lloyd. International Clinics, second series, iii, 119, 1892		1					
Dobson Lancet, i, 1,079, 1892						1	Multiple.
Faguet and Lowitz. Jour. de méd. de Bordeaux, April 21, 1895						1	Frontal.
Gessler and Bayha. Med. Corr. Blatt d. Würtem. ärzt. Landesvereins, lxvii, No. 34, 1897			1				Temporal.
Gibson. Edinburgh Medical Journal, February, 1896						1	Corpus striatum.
Gordinier. Albany Medical Annals, September, 1898						1	Centrum ovale.
Gould. Transactions of the Clinical Society. London, xxxi, 286, 1898		1					
Gray. Brain, xv, 443			1				Subcortical.
Gray and Wyeth. Medical Record, February 7, 1891			1				Subcortical.
Hammond, W. A. Medical News, October 31, 1891	1						
Henschen. Pathologie des Gehirns, i, 156						1	Parietal.
Henschen. " " iii, 229						1	Base.
Hermanides. Op. cit.				1			
Hirschl. Neur. Centralbl., xv, 609, 1896		1					
Hitzig. Therapeut. Wochenschr., Nos. 19, 20, 1896				1			
Hitzig. " " "			1				Frontal.
Jaboulay. Arch. prov. de chirurg., i, 61, 1893						1	Chiasma.
Jaboulay. " " "						1	Centrum ovale.
Keen. American Journal of Medical Sciences, February, 1894				1			
Köster. Upsala Läkarefören. Förhandl. p. 321, 1896					1		
Köster and Schiller. Ref. in Neur. Centralbl., xvi, 1,056, 1897			1				Multiple. Deep.
Liepmann. Monats. f. Psych., May, 1898		1					
Lloyd and Suckling. Birmingham Medical Review, February, 1889			1				Chiasma.
Poirier. Traité d'anatomie med.-chir., i, 65						1	Base.
Rémond and Baudy. Arch. prov. de chirurg., ii, 634, 1894						1	Base.
Rychlinski. Medycyna, Nos. 1, 2, 1897						1	Parietal.
Schlesinger. Wiener klin. Wochenschr., January 21, 1898			1				Entire hemisphere.
Schlesinger. Neurolog. Centralblatt, xiv, 702, 1895.		1					
Sinkler. Transactions of the American Neurological Association, 1896						1	Frontal.
Stachow. Ueber einen operativ-behandelten Fall an Hirntumor						1	Frontal.
Starr. British Medical Journal, October 16, 1897						1	Basal ganglia.
Thomas and Hamilton. Journal of Experimental Medicine, ii, 635, 1897						1	Corpus callosum.
Twynam. Australasian Medical Gazette, p. 187, 1892						1	Parietal.
Vassal and LeFort. Bull. de la Soc. Anat., p. 30, 1891			1				Optic thalamus.
Walker. Medical and Surgical Reporter, ii, 213, 1890						1	Temporal.
Zeller. Neurol. Centralblatt, xv, 288, 1896			1				Corpus striatum.
Parietal.							
Previously collected, 1. Knapp. Op. cit.						1	
Borelius. Hygiea, lix, 539, 1897						1	Cerebellum.
Clarke. British Medical Journal, June 13, 1891						1	Optic thalamus.
Richardson and Walker. American Journal of Medical Sciences, December, 1893			1				Posterior parietal.
Saenger. Neurol. Centralbl., xiv, 472, 1895		1					
Wille. Allg. Wiener med. Zeitung, December 18, 1888			1				Paracentral.
Temporal.							
Previously collected, 1. Knapp. Op. cit.						1	
Fisher. Transactions of the American Neurological Association, 1895			1				Cerebellum.
Lucas. Medical Press and Circular, January 4, 1893. (Trephined also in Rolandic region.)			1				Cerebellum.
New London or University College Hospital Report, p. 28, 1889			1				
Occipital.							
Previously collected						1	
Bruns. Neurol. Centralbl., xii, 386, 1893			1				Opposite occipital. Temporal.
Jaffé. Deutsch. med Wochenschr., No. 5, 1897						1	Cerebellum.
Lambotte. Annales de la Soc. Belge de Chirurg., iv, 197, 1896						1	Angular gyrus.
Postempski. Atti del XI Congresso Med. Internaz., iv, 20		1					
Spencer. Therapeutic Gazette, March, 18 '8	1						
Terrier. In Auvray. Op. cit.						1	Cerebellum.

TABLE XI. — (Continued).

Region operated on.	Recovered.	Improved.	Improved. Died later.	Not improved.	Not stated.	Died.	Tumor found.
Cerebellum.							
Previously collected, 2. Knapp. Op. cit.						2	
D'Allocco. Riforma medica, xiii, 4, 722, 1897						1	Optic thalamus.
Guthrie and Turner. Lancet, i, 527, 1895						1	Corpora quadrigemina.
Hermanides. Op. cit.						1	Frontal.
Hitzig. Therapeut. Wochenschr., Nos. 19, 20, 1896			1				Frontal.
Janz. Riforma medica, xiii, 4, 295, 1897						1	Cerebellum and optic thalamus.
Janz. " " "						1	Fourth ventricle.
Keen. American Journal of Medical Sciences, February, 1894						1	Third ventricle.
Knapp. Unpublished. (Parietal also trephined)			1				Meningitis.
McBurney and Starr. American Journal of Medical Sciences, April, 1893.						1	Base.
Mills and Deaver. Transactions of the American Neurological Association, 1892				1			Cerebellum, pons, medulla.
Oppenheim. Die Geschwülste des Gehirns, p. 245			1				
Ruhemann and Hahn. Deutsch. med. Wochenschr., Nos. 16, 22, 1896					1		
Starr. British Medical Journal, October 16, 1897						1	Cerebellum.
Stewart. Pittsburgh Medical Review, November, 1892						1	Opposite cerebellar hemisphere.
Taylor. Transactions of the Ophthalmic Society, London, xiv, 105, 1894		1					
Region not stated.							
Bury. British Medical Journal, November 28, 1897			1				Optic thalamus.
Chipault. Gazette des Hôpitaux, lxxi, 557, 1898				1			Second frontal.
Chipault. " " "				1			Paracentral.
Chisholm. Australasian Medical Gazette						1	
Dinkler. Archiv f. Psych., xxix, 1,005				1			Centrum ovale.
Dudley. Brain, xi, 503, 1889			1				Frontal.
Foxwell and Marsh. British Medical Journal, i, 1,135, 1890				1			Centrum ovale.
Handford. British Medical Journal, March 16, 1895			1				Corpus striatum.
Inglis. Physician and Surgeon, Ann Arbor, xii, 114, 1890			1				Frontal.
Lucas. Championnière. Bull. et Mem. Soc. Chir., p. 426, 1891						1	Base.
Lucas. " " " "						1	Frontal.
Macewen. British Medical Journal, ii, 1,367, 1893		1					Cerebellum.
Macewen. " " "			1				Cerebellum.
Park. Medical News, December 3, 1882						1	
Phillips. British Medical Journal, January 22, 1898	1						
Spencer and Keen. Therapeutic Gazette, March, 1898	1						
Taylor. Journal of Experimental Medicine, ii, 6						1	Optic thalamus.
Thomson and Stewart. Edinburgh Medical Journal, xxxix, 936, 1894						1	Optic thalamus.

has infiltrated into a considerable portion of the brain. In cysts, too, which may often be due to these growths, there is a strong probability that the cyst may refill unless its walls be excised — a proceeding always more difficult and dangerous and sometimes impossible.

The operations which have proved unsuccessful in finding the tumor have on the whole been attended with far less favorable results. Out of 111 cases where the tumor was not found, 4 are said to have recovered (!) and 10 to have been benefited; 29 improved for a time, and 58 died as a result of the operation. Ferrier's cases, in which the tumor was not removed, as I said, cannot be classed under the various headings which I have adopted of mistakes in diagnosis and palliative operations. In 15 cases of cerebral tumor in which the growth was not removed, 4 died as a result of the operation, 7 lived from one to ten months, one lived over a year, and in 3 cases the result is unknown. In 3 cases of cerebellar tumor in which the tumor was not removed, one lived from one to ten months and 2 lived over a year. The operation in his 18 cases proved directly fatal in 4, or 22 per cent. (Table XI).

The palliative operation is somewhat more promising, although thus far the roseate hopes of Chipault have not been realized (Table XII).

In 68 cases but 10 died from the operation and 35 were benefited, 15 others were benefited temporarily and 4 were not helped at all. Such cases, with the further evidence afforded by some cases where the operation was done ostensibly to remove a tumor but where the growth was not found or could not be removed, show that relief of the intracranial pressure by the removal of bone will often relieve headache. In part of the cases the headache is so distressing as to warrant the operation; in many cases, however, the headache is only moderate and it can be controlled by drugs. The operation, therefore, is of far less general application than Chipault claims. One other benefit from the mere removal of bone has been pointed out by Horsley and confirmed by a series of cases reported by Taylor,[26] namely, that by relief of pressure a progressive optic neuritis may improve and blindness may be prevented. I am not aware that any one has yet tried the simple incision of the sheath of the optic nerve to relieve neuritis, which Horsley suggests.

A word may be said as to the methods to be adopted to relieve pressure. Lumbar puncture has been tried in a number of cases and is a simple procedure which occasionally gives relief for some months. Usually, however, the effects are too transitory to be of much avail. If trephining be done should the dura be opened? Beevor claims that the dura will not stretch enough to give the necessary relief, but in one of the most successful cases of palliative trephining that I have seen the dura was not opened. If the dura be opened the dangers of cerebral hernia become greater and death may be hastened by the operation; yet it may be necessary to take these risks and to open the dura to get the necessary relief. Finally, if trephining alone be inadequate we may also puncture the ventricles. In other words, the operation should be progressive. It is now recognized that any trephining should be done in two stages, as Horsley advises; the first removing the button of bone, the second opening the dura and exploring the brain. By adopting this method in simple palliative trephining we have but to prolong the interval between these two stages a few weeks in order to see whether the second stage of opening the dura is necessary.

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[26] Trans. Ophthalm. Soc. Lond., xiv, 105, 1894.

If we summarize the results of surgical interference in cases of cerebral tumor in the last fourteen years the outlook must be acknowledged to be discouraging. In about five-sixths of the cases of intolerable headache trephining will afford temporary relief, and, while sometimes hastening the end, will make the remaining period of life more endurable when drugs have failed to do so. In some cases of progressive amblyopia palliative trephining may also prevent blindness by checking the progress of the neuritis.

TABLE XII.

Sixty-eight Palliative Operations (Included in Table V).

		Improved.	Improved. Died later.	Not improved.	Not stated.	Died.
	Previously collected, 7. Knapp. Op. cit.	6	1			
	Albert. Wiener med. Wochenschr., Nos. 1, 3, 5, 1895	2				
2	Albert. " " "		1			
	Bartlett and Van Lennep. Hahnemann Monthly, April, 1894	1				
2	Von Beck. Mittheil. aus d. Grenzgebiet. d. Med. u. Chir., i, 247, 1896.	1				
	Beevor and Ballance. British Medical Journal, i, 5, 1895	1				
	Broca and Maubrac. Archives gén. de Méd., February, 1896	1				1
	Brugelius and Berg. Hygiea, lvi, 529, 1894	4				
	Bruns. Neurolog. Centralbl., xii, 386, 1893		1			
	Bruns. Wiener med. Presse, 321, 1893	2		1		
	Carson. Annals of Surgery, xxviii, 328					1
	Caton and Paul. British Medical Journal, ii, 142, 1893	1				
	Chipault. Cong. français de chir., x, 283, 1896	3		1		
	Chipault. Gazette des Hôpitaux, lxxi, 557, 1898		2	1		1
	Chipault. L'Independance Méd., i-ii, 337, 1895-96	1	1			1
	Clarke and Morton. British Medical Journal, April 13, 1895	1				
	Cobb. British Medical Journal, October 6, 1888	1				
3	Courtney. Unpublished		1			
	Dercum. Transactions of American Neurological Association, 1895		1			
	Diller. American Journal of Medical Sciences, November, 1892					1
	Hektoen. Journal of American Medical Association, February 11, 1893					1
	Henschen. Pathologie des Gehirns, iii, 233, 1896		1			
2	Hern. British Medical Journal, ii, 1,045, 1893	1				
	Hœftmann. Verhandl. d. deutsch. Gesellsch. f. Chir., xviii, 87, 1889	1				
	Jaboulay. Arch. prov. de chir., i, 61, 1893					1
3	Kammerer. Annals of Surgery i, 685, 1894			1		
	Keen. American Journal of Medical Sciences, February, 1894		1			
2	Keen. Medical News, September 20, 1890					1
2	Kocher. Corr. Blatt. f. schweiz. Ærzte, No. 17, 1889	1				
	Kocher. British Medical Journal, ii, 1,367, 1893				3	
3	Kramer. Cincinnati Lancet Clinic, xxxix, 523	1				
	Park. Medical News, December 3, 1892	1				
	Patrick. International Clinics, 6th Series, iv, 157, 1897	1				
	Putnam. Boston Medical and Surgical Journal, i, 66, 1896	1				1
	Rohmer. Revue méd de l'Est., xkx, 251, 1898	1				
	Sahli. British Medical Journal, ii, 1,367, 1893				1	
	Shattuck, Folsom and Bradford. Unpublished		1			
3	Stewart. Medical and Surgical Reporter, October 5, 1895	1				
	Stewart. Edinburgh Medical Journal, 935, 1894		2			
	Thorén. Hygiea, lvii, i, 544, 1895	1				
	Warnots. Cong. français de chir., vii, 1893					1
	Wyeth. Annals of Surgery, 685, 1895		2			

With regard to the more radical operation of removal of the tumor the chances of success are few and the outlook for the future is more hopeless. We do not seem to have gained much in diagnostic skill, although the gain in operative technique has diminished the mortality. Less than ten per cent. of all cases are amenable to surgical interference, and a mortality of nearly one-third renders the operation one to be undertaken only after grave deliberation. The chances of complete recovery after such an operation are very small, probably less than ten per cent. of the cases where the growth is wholly removed. The rest of the cases linger on, paralytic, epileptic or blind, and many finally succumb to a recurrence of the growth. It is a question whether the results of these operations are any more favorable than would be those obtained by medical treatment in the same number of cases, but statistics on this point are inadequate. Nevertheless, there is a small chance that an operation may effect a complete cure, or, at least, give relief for a number of months. With that chance, small though it be, an operation becomes justifiable, and the sooner it is done, if it is to be done, the greater the chances of permanent benefit. The constant increase in operative skill will probably continue to lessen the death-rate, and, although little has as yet been gained in diagnostic skill, there is still room for hope.

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Clinical Department.

A CASE OF HEMORRHAGIC PLEURISY; PERMANENT DRAINAGE; RECOVERY.

BY GEORGE G. SEARS, M.D., BOSTON.

During the past year a singularly large proportion of the cases of acute pleurisy with effusion which have come under the observation of the writer have been of the hemorrhagic type, but with two exceptions their clinical history differed in no respect from what is expected when the effusion is simply serous, the patients either recovering after one or two aspirations or failing gradually as the result of other processes with which the disease was associated. These two were exceptional, both in the large proportion of blood contained in the exudate and in their course. One is referred to in the title of this paper, the other is briefly reported from the marked contrast which it furnished in its termination.

Wm. C., thirty-seven years old, a cattleman on a transatlantic steamer, entered my service at the City Hospital on June 30, 1898. His family history was negative. He had always used alcohol to excess but his general health had been good. He had had several attacks of gonorrhea and a year ago had had a "chancre," but no secondary symptoms had been noticed. About the same time he sustained a fracture of the seventh and eighth ribs on the right side anteriorly. A week before entrance he had been kicked by a steer in the left side, but this had caused him very little inconvenience. On June 26th, while considerably under the influence of liquor, he went in swimming, and during his bath was suddenly attacked by severe pain in the right lower chest, which was followed by a short and distressing cough. He became much prostrated and sweat profusely.

Physical examination showed a well-nourished, powerfully-developed man, but anemic and suffering from marked dyspnea. The entire right chest was dull on percussion. Above the third rib the fremitus and voice sounds were increased and the respiration was bronchial; below that point they rapidly diminished and were soon lost. The left chest was negative. The heart's apex was in the sixth space, a good inch outside the nipple line. There were no murmurs. The lower edge of the liver extended about two fingers' breadth below the costal margin. Over the lower portion of the left chest the skin was somewhat discolored from a recent bruise, but no evidence of injury, either past or present, was discovered on the right side. On entrance, the temperature was 99.2°, pulse 130, respirations 40. During the six weeks in which he remained in the medical ward, the temperature ran a very irregular course within comparatively narrow limits, rarely exceeding 101°, and usually not going above 100°. The pulse varied between 100 and 120, and the respirations averaged about 35, never falling below 27, and on one occasion rising as high as 58. A blood count showed 2,944,000 red and 11,500 white corpuscles.

On July 6th the patient was aspirated and eight ounces of bright red fluid, macroscopically indistinguishable from pure blood, were removed. As he expressed himself as considerably relieved, it was repeated on the 9th, 11th, 13th, 14th and 17th, from twelve to twenty-five ounces being obtained each time without apparent decrease in the pleural contents. Symptoms of collapse almost invariably came on, which necessitated the withdrawal of the needle. During the week following the last aspiration he remained fairly comfortable, with but little variation in the physical signs, what change there was indicating a slight diminution in the pleural contents. On the 25th another attempt at aspiration was made which was only partially successful, but on the 28th the needle introduced below the inferior angle of the scapula drew off sixteen ounces. It apparently passed through a thick encapsulating wall. Thirty ounces more were withdrawn on August 7th. The fluid obtained during the later aspirations had grown progressively darker and showed less evidence of fresh blood. After consultation with Drs. Post and E. W. Dwight, he was transferred to the surgical side of the hospital and on August 11th the ninth rib was resected by the latter in the anterior axillary line and the pleura opened. Two pints or more of dark-red fluid escaped through the opening. Both the visceral and parietal layers of the pleura above the incision were lined by a light, white feathery coating about three-quarters of an inch thick, apparently a white clot. Below, the membrane was denser and of a spongy consistency. The cavity was washed out and a rubber drainage-tube inserted.

On August 15th it was noted that the discharge was considerable, hemorrhagic in character, containing a small amount of pus and of a somewhat offensive odor, but from the time of the operation he steadily improved, except for a slight set-back occasioned by an operation for the recovery of a drainage-tube which had slipped its moorings and became lost in the pleural cavity. A bit of the membrane was sent to Dr. Pearce for examination, who reported as follows: "A small, irregular, yellow, blood-stained mass consisting of dense fibrous tissue, with lymphoid and plasma cells. No blood-vessels. Many polynuclear leucocytes near surface. No evidence of tuberculosis or malignancy."

During the remaining weeks of his stay in the hospital he gained in color, weight and strength, but when he left, at his own request, on September 22d, a small sinus still remained, from which a very slight discharge still issued. The temperature had been normal for over two weeks. Soon after he left for the West and has been lost sight of.

A somewhat hasty search through the literature of the subject failed to discover more than two cases where a permanent opening was made for pleural effusions other than purulent. Both are reported by West, and in both the exudate was serous. Both were cases of long standing in whom repeated aspirations had failed to cure. Both recovered, although in one a long sinus still persisted at the time of the report, yet the patient was able to resume his regular work. The reason given by West — failure to improve after many months' treatment by aspiration — as having induced him to advise so radical a measure was only partially applicable to this case. Repeated aspirations had produced but little change in the physical signs during the seven weeks in which he was under observation, and the withdrawal of thirty ounces of fluid on August 7th, and the escape of a quart or more four days later when permanent drainage was established, showed that in spite of them a very considerable quantity still remained, but of more importance was the fact that under conservative treatment the patient was not doing well, apart from the behavior of the fluid; he remained greatly prostated, the anemia was very marked, and the temperature still ran a decidedly irregular course.

Other considerations which induced us to resort to radical measures were:

(1) The protracted course of the disease, in which an active inflammatory process was shown by the large amount of blood, which made it probable that if recovery took place the lung would remain tied up and unable to expand. This probability was strengthened

by the discovery, by the aspirating needle, of the thick layer of fibrin covering the pleura, whose presence was positively demonstrated at the operation and which would have acted as a further barrier to complete pulmonary expansion.

(2) The probable etiology. The suspicion, which is justified in a large majority of cases of pleurisy, that the tubercle bacillus was the active agent was increased by the markedly bloody character of the exudate, as well as by the fact that it remained persistently sterile until four days after the operation, when a few diplococci, probably the pneumococci, were found on culture. Positive proof, however, was not obtained. Repeated examinations of the sputum were always negative and no evidence of tubercular changes in the lungs on careful examination either before or after operation was ever found. If tuberculosis were present, which in spite of all the negative evidence seems probable, it still remained practically a local one, and the curative effects of drainage of other serous cavities, similarly affected, encouraged one to hope that good might result here, while, if it were not present, the risk was no greater than in an operation for empyema and was worth taking for the additional lung capacity which it would give, leaving other considerations out of the question.

The second case was seen on March 11, 1899, in consultation with Dr. G. A. Bancroft, of Natick. The patient was a man about forty years old, who for several months had had a short hacking cough, and had lost somewhat in strength and flesh. About ten days previously he began to complain of pain in the left chest, of increased cough and dyspnea. Nausea and vomiting were also very prominent symptoms. In the course of a few days he became very much blanched. The temperature had run an irregular course but was never very high, rarely going much above 101°.

Physical examination showed that the left chest was filled with fluid, the heart being dislocated so that its right border was in the right mamillary line. The right chest was otherwise negative. A needle was introduced and over a pint of fluid resembling pure blood withdrawn.

He was more comfortable during the following few days, and when seen by Dr. Bancroft on the afternoon of March 1st appeared in fairly good condition, with a temperature of 100°, pulse 90, respirations 24. Early the next morning, however, he sat up in bed, complained of feeling very badly and fell back dead. No autopsy was obtained. From his history and general appearance the case was undoubtedly tubercular.

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GASTRIC ULCER AT THE MASSACHUSETTS GENERAL HOSPITAL, 1888-1898.[1]

BY ROBERT B. GREENOUGH, M.D., AND ELLIOTT P. JOSLIN, M.D., BOSTON.

The writers undertook the study of all the cases of gastric ulcer which entered the Massachusetts General Hospital in the ten years 1888–1898, with the hope of affording statistical evidence to the effect that a lasting cure was not obtained by medical treatment in a large proportion of cases. This study was materially aided by suggestions from Dr. J. C. Warren and Dr. R. H. Fitz, through whose assistance access to the hospital records and permission to report the cases was obtained.

Frequency. — Out of 13,097 cases, the total number of medical cases entering the hospital in the ten years 1888–1898, there were 187 cases of gastric ulcer, a percentage of 1.4 per cent. This percentage is somewhat higher than obtains in Baltimore (Cushing), Chicago (Capps), or Denver (Warren).

Sex. — One hundred and fifty-seven cases were in females and 30 in males, a proportion of five to one. Other statistics vary in this regard, but the proportion quoted by Fiedler,[2] based upon autopsy reports, of 14 to one, alone surpasses the large preponderance of females in the Massachusetts cases. No satisfactory association between the gastric ulcer symptoms and menstrual disorders could be determined.

Age. — The two extremes of age were eight and sixty-seven years. Between these limits, by far the larger proportion of the patients (75 per cent.) were between twenty and forty years of age, this being quite in accordance with other observations. The male cases averaged thirty-six and three-fourths years, and the females nearly ten years younger, twenty-seven and one-tenth years, and 113 of the females were under thirty years of age. Thus women are more susceptible to the disease at a period nearly ten years younger than are men.

Occupation. — Servant girls and cooks made up a large proportion of the female cases, 73 per cent. This is in accord with other statistics, and an etiological significance has been attributed to these occupations. But in fact these classes of society are represented in no larger proportion than in all the female medical cases admitted to the hospital, since they formed 75 per cent. of 216 consecutive admissions taken at random from the record. No weight can therefore be laid upon the occupation in this series of cases.

Symptoms. — The frequency of the chief symptoms in 187 cases was as follows:

	Cases.	Per cent.
Vomiting	179	95.7
Pain	173	92.5
Vomiting of blood	147	78.6
Pallor	131	70.1
Tenderness	130	69.5
Constipation	123	65.8

Vomiting. — The most frequent and practically universal symptom was vomiting, being recorded as absent in only four cases and doubtful in four more. The amount and the time of vomiting were subject to great variation, not only in different individuals but also in the same individual at different times. The statements of Ewald, Boas, Leube and others are at variance also in these particulars, and the hospital records are of no help in deciding the question. In general, however, the vomiting was recorded by the patient as following the ingestion of food, and at the height of the pain.

Pain. — Pain was felt in the epigastrium in 142 out of the 173 cases in which this symptom was noted, but in only 91 of this number was the pain confined to this region alone. Pain in the back was recorded in 41 cases, but only once was it referred alone to this locality. In only six cases was the pain felt to the right of the median line, but in 13 cases it was situated in the shoulders. One hundred and two patients gave the time of occurrence of the pain as following the ingestion of food, and were generally relieved by vomiting, though in 18 the pain was continuous. In 19 cases there was no relation to the time of taking food, and in 14 cases there was no pain at all. Of these last 14 cases without pain, seven were cases of sudden onset, with severe hemorrhage, which in three instances was fatal, and they suggest a grave type of the disease.

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[1] Read in part before the Boston Society for Medical Improvement, April 10, 1899.

[2] Cited by Ewald: Krank. des Magens, p. 383.

Hemorrhage. — Hemorrhage from the stomach is considered by Osler, Hemmeter, Leube and others, to be present in about 50 per cent. of cases of gastric ulcer. Of 182 Massachusetts General Hospital cases, however, blood was noted in the vomited material in 147 cases, a percentage of 81 per cent. In only 86 cases, or 45 per cent. was the loss of blood productive of constitutional symptoms, and it is possible that out-patient cases of a less severe type were made to figure in the statistics of other writers. Hemorrhage was the first symptom in 19 cases, 15 women and four men, but as a rule symptoms were present before erosion of any large-sized vessel occurred. Seven cases, or 3.7 per cent. of the total number, died of hemorrhage, in three of these cases the hemorrhage being the first symptom. As regards sex the fatality is striking, as only two out of 157 females (1.2 per cent.), died from this cause, against five out of 30 males (17 per cent.). The average age of the five males was forty-eight years, and of the two females forty-two and five-tenths years, a marked freedom from fatal cases from this cause being noticed in the younger cases. Hood[8] says that death from hemorrhage in gastric ulcer seldom or never occurs in young females. In five of the seven fatal hemorrhage cases the bleeding was slight and frequently repeated, and in only two cases did death occur shortly after the hemorrhage, and then only in six and in nine days respectively. Blood was thought to be present in the stools in 55 cases, but observations are liable to error in this regard.

Pallor. — Pallor was observed in 131 of the 164 cases in which a record of the color was made. Of 73 cases where the hemoglobin was estimated, 34 were below 50 per cent. and 64 below 80 per cent. Thus a notable degree of anemia was present in about 80 per cent. of all the cases. In 43 cases the red corpuscles were counted and in only 24 of these were they below 4,000,000, thus suggesting a greater diminution of hemoglobin than of corpuscles, a condition expressed by the color index, which averaged 0.67 per cent. This bears out the observations of others that an anemia of the chlorotic type is the rule in gastric ulcer.

Tenderness. — No evidence of tenderness to palpation could be discovered in 51 of the 187 cases, but in 130 this sign was present to a greater or less extent. Only slight weight can be laid upon this condition on account of the personal variation in its determination.

Constipation. — This condition was present in 123 cases.

Perforation. — Perforation occurred in six cases (3.2 per cent.). Five were females (3.2 per cent. of all female cases), and one male (3.3 per cent. of all male cases). The ages ranged from eighteen to fifty-seven years. No perforation occurred without previous symptoms, and the symptoms were generally striking. All six cases died, one only surviving the perforation, and dying seventy days later of nephritis. In two cases general peritonitis was the cause of death, and in two a local abscess; the situation of the ulcer apparently having less to do in determining the result than the mobility of the stomach and its freedom from adhesions. Only one case suffered perforation while on starvation diet and this one alone survived, to die later of nephritis. One case was operated upon six hours after the perforation, but did not survive.

Results. — Statistics vary widely in the per cent. of cures in cases of gastric ulcer, and authorities may be found for figures from 50 to 85 per cent. The mortality is estimated by Leube at two per cent. Reports were obtained from 114 out of the 187 cases of ulcer occurring in the decade, and these figures may be taken to represent, therefore, the end results of treatment at an average of five years after entering the hospital.

At the time of discharge from hospital of these 187 cases,

121 were considered cured	64 per cent.
34 relieved	18 "
15 died	8 "
17 were otherwise classified	9 "

Of the 114 cases in which end results were known:

	Discharged.		Average five years later.			
	Cases.	Per cent.	Recur.	Dead.	Cured.	
Cured	63	55	28	8	27	= 63
Relieved	29	25	10	4	15	= 29
Dead	15	13				
Otherwise	7	6	3	3	1	= 7
			41	15	43	99

Fifteen cases died after leaving the hospital and the cause of death was known to be gastric in eight, non-gastric in three and doubtful in four. Thus of 114 gastric ulcer patients, at an average period of five years after leaving the hospital, there were

46 cured	40 per cent.
41 with recurrence	36 "
23 deaths (cause gastric)	20 "
4 deaths (cause doubtful)	4 "
114	

That is, 60 per cent. failed to derive a lasting cure from medical treatment.

The large percentage of mortality in the hospital (eight per cent.) is striking in comparison with Leube's mortality, and can be explained only by the more severe type of the disease met with in these cases, as evidenced by the greater percentage of hemorrhages. More striking still, however, is the fact that, while 80 per cent. were considered cured or relieved at the time of discharge from hospital, only 40 per cent. of those whose later condition could be ascertained derived a complete and permanent relief.

Treatment. — Starvation diet and rectal feeding were the therapeutic measures adopted in the more severe cases, and a milk diet was given, as a rule, in the milder ones, so that a comparison of the two forms of treatment can hardly be made with justice. It may be said, however, that while on one service the rectal feeding was more popular, and on the other the milk diet was the rule, the percentages of recovery on the two services were the same.

CONCLUSIONS.

(1) Gastric ulcer is more frequent in Boston than in Chicago, Baltimore or Denver.

(2) It is five times as common in women as in men.

(3) The average age in men is thirty-seven years; in women twenty-seven.

(4) Hemorrhage was present in 81 per cent. of the cases. It caused the death of 17 per cent. of the

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[8] Hood: Medical Society's Transactions, London, vol. xv, p. 283.

male patients, but only 1.27 per cent. of the females. No woman under thirty died of hemorrhage from gastric ulcer during this period.

(5) The blood was that of a chlorotic type of anemia.

(6) Perforation occurred in 3.2 per cent. of the cases, and none of these patients left the hospital alive.

(7) Of 114 patients 80 per cent. were discharged cured or relieved, but at the end of an average period of five years only 40 per cent. remained well. The mortality at the same time (due to gastric disease) was 20 per cent. Among the males it was 30 per cent.; with the females nine per cent.

(8) The excessive mortality of ulcer among men, its occurrence in life a decade later than in women, and the absence of fatal cases of hemorrhage in females, point to a difference of the ulcer in the two sexes.

(9) The mortality of eight per cent. and the failure of medical treatment to effect a lasting cure in 60 per cent. of the patients, indicates the need of surgical intervention in other than emergency cases of this disease.

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Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., AND WM. DUDLEY HALL, M.D., BOSTON.

RETROBULBAR OPTIC NEURITIS.

E. Nettleship's[1] conclusions are based upon observations of 148 cases, and he is inclined to consider a pathological division into idiopathic and symptomatic to be correct, although on clinical grounds, with our present knowledge, it may be impossible to definitely place a given case under either subdivision. In the idiopathic variety the lesion is located in the nerve, between the eye and the brain, and while usually but one nerve is affected the other may be after a sufficient interval of time has elapsed. The vision fails rapidly, the climax being reached in from one to five days, and varies from a slight central haze to total loss of perception, but bears no relation to the fundus changes. Recovery of vision is possible if not too long delayed. The centre of the field of vision is always invaded; the direct pupil reflex is lowered and pain is a very common symptom, which latter, when subjective, is behind the eye and to the temporal side. Pressure on the globe or movement of the same also gives rise to painful sensations. There is no vomiting, nor are there any external signs of inflammation. The fundus changes are slight, being merely a slight haziness of the disk. Engorgement of the vessels or hemorrhages are wanting. When the onset is very rapid and of high degree it is sometimes difficult to distinguish this condition from embolus or a hemorrhage into the sheath. The condition of the field, the behavior of the pupil, the mode of onset and the fact that there is no improvement by suggestion, will serve to distinguish it from hysterical amblyopia. In 88 cases the author finds that the proportion is two to one, the female being the more apt to be affected: three-fourths of the patients were between twenty and forty. Exposure to cold, mental depression, worry, gout, influenza, typhoid and malaria are given as causes. In a considerable number of these cases there was noticed a marked predisposition to functional disturbance or organic disease of the nervous system; in fact, it seems highly probable that while double optic atrophy, with a well-known train of symptoms, causes one to suspect tabes, an attack of acute retrobulbar optic neuritis, usually single, but if double, with delayed symmetry and generally ending in partial or complete recovery, should cause some anxiety as to the possible onset of disseminated sclerosis. The rapid onset points either to inflammation or to a slight infiltrating hemorrhage from the minute vessels of the nerve; the character of the pain locates the disturbance in the orbital part of the nerve and the almost constant involvement of the central or paracentral part of the field indicates disease of those nerve fibres coming from the yellow spot region, which, near the eye, lie on its temporal side, but in the axis further back.

OCULAR MANIFESTATIONS OF LEPROSY.

Jeanselme and Morax,[2] in an article founded upon 11 cases, draw the following conclusions:

Ocular manifestations are very common. The upper lids rarely escape when skin of other parts is affected and lesions of the globe are bound to be met with sooner or later. Maculæ and tubercles may disappear without leaving a trace, or there may be atrophic lesions of skin and loss of hair, but ulceration is rare. Conjunctival lesions are rare and always secondary to subjacent scleral lesions; thus infection of the deeper parts does not take place from without, as is generally supposed. The space between the insertion of the recti muscles and the cornea is the seat of election for primary lesions, and while here the symptoms are slight. There are two varieties of corneal lesion, one resembling a circumscribed leucosarcoma and the other an interstitial keratitis. As to the iris, there may be a plastic iritis, not at all distinctive, or a marginal growth resembling a gumma or a deposit of very fine grayish dots requiring a lens to bring them out. The ciliary body, anterior part of the choroid and retina are frequently involved although descemetitis is not common. The entire posterior part of the globe commonly escapes. The abundance of the "Hensen" bacillus proves its importance in the pathology of the disease and by analogy, pending the discovery of the syphilitic microbe, it may be argued that interstitial keratitis is an essential part of tuberculosis and syphilis. Although these three diseases may resemble one another under the microscope, their course and associations are widely different, therefore let interstitial keratitis be considered as a symptom common to these and possibly to other diseases. The authors thus describe leprous keratitis. Near the corneal margin, often at a point corresponding to pre-existing lesions in the sclera, a slight haze appears without any interference with the corneal reflex, which a magnifying glass resolves into a number of minute opacities, nodular and more or less confluent and situated principally between the superficial layers of the cornea or just in front of Descemet's membrane. Near the margin, the infiltration is denser, like an arcus senilis, but smaller in extent and reaching right up to the corneal margin. When confined to one sector of the cornea it may clear up completely, but it generally recurs. When the whole cornea is involved no return to complete transparency is possible. Secondary glaucoma is not at all uncommon.

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[1] Royal London Ophth. Hosp. Reports, May, 1899.

[2] Annal. d'Oculistique, December, 1898.

EXTRACT OF THE SUPRARENAL CAPSULE IN DISEASES OF THE EYE.

Bates,[3] while experimenting to determine the therapeutic effect of some of the ductless glands, noticed certain properties of the aqueous extract of the suprarenal capsule, which extensive use in both this country and Europe has abundantly confirmed. In a recent paper he gives the following as the result of his observations.

It is a powerful astringent, the conjunctiva of the globe and lids rapidly becoming white after its use, repeated use or increased strength causing greater effect. The cause of the redness has no effect on the result. This effect is only temporary, lasting perhaps one-half hour; it is non-irritating. It has no direct effect upon the nervous system. The pupil is not affected, neither is the accommodation. It is not an anesthetic, the relief of pain being due to the reduction of congestion. A tolerance is never acquired, neither is there any secondary effect of increased congestion or pain noticed. There is no desquamation of the corneal epithelium noticed. In preparation, five grains of the dried and pulverized gland of the sheep are mixed with one drachm of water, allowed to stand five minutes and then filtered, which filtrate contains about one per cent. of the extract; a 33-per-cent. solution may be obtained. It cannot be mixed with antiseptics, is light brown in color and should whiten the caruncle in one minute. The extract is soluble in water but not so in alcohol, chloroform or ether. It increases the tone of all muscular tissue by direct action. Bates has used the extract in a variety of cases, but his results seem to show that the extract is not curative but rather by its astringent action has promoted absorption of other remedies.

THE INTRODUCTION OF IODOFORM INTO THE ANTERIOR CHAMBER OF THE EYE IN TUBERCULAR IRITIS.

Weill [4] states that tuberculous material taken from the human iris and ciliary body was introduced into the anterior chamber of two rabbits. After the tuberculous nodules appeared upon the iris of the rabbits, iodoform, sterilized and then freed from carbolic acid, was introduced into the anterior chamber. From the clinical appearances and histological examination are the following conclusions drawn: Sterilized iodoform is slowly taken up from the anterior chamber even if the boundaries of the latter are diseased. It undoubtedly exercises a mitigating influence not only in an eye in which tuberculous material is simultaneously introduced, but also in those eyeballs in which the iris had been previously tuberculous. It is probable that the tuberculous process in the bulbi already tuberculous would have been less intense if the inoculation could have been made more thorough and kept free from deleterious complications. Iodoform inoculation may bring about at least a temporary retardation of the tubercular invasion, and afford sufficient time to build up the general system enough to resist the invading bacillus. It is not incompatible with other remedies, but on the contrary needs them as adjuncts. It is applicable in acute as well as chronic cases.

AIROL IN HYPOPION KERATITIS.

Bonivento [5] has treated 40 cases, usually with success. Airol is harmless, non-poisonous, odorless and not irritating. When it is dusted upon the eye it lessens the injection, does not injure the cornea and in general does not produce pain. When purulent conjunctivitis and dacryocystitis are complications these conditions are greatly benefited. Airol appears as a fine powder, grayish black in color and slightly aromatic. It contains bismuth, gallic acid and iodine, which latter is broken up when it comes in contact with the tissues. After long use there is no eczema, as in the use of iodoform. Zirm [6] for a long time used iodoform in treatment of this condition, and later on was induced to try airol, which he thinks prevents invasion of bacteria by the formation of a thin coating upon the cornea, as well as having a curative effect. He finds it to be irritating and consequently turned to xeroform with the happiest results. When there is a coexistent dacryocystitis he injects an emulsion of xeroform into the lachrymal sac.

(To be continued.)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

THE regular meeting was held April 10, 1899.

DRS. ROBERT B. GREENOUGH and ELLIOTT P. JOSLIN gave a *résumé* of a report of 187 cases of

GASTRIC ULCER TREATED AT THE MASSACHUSETTS GENERAL HOSPITAL FROM 1888 TO 1898.[1]

DR. WARREN: I think this paper is a most timely and interesting one. It furnishes a great many valuable facts which we are in need of at the present time.

The point that seems to be brought out by their paper is that the sequelæ of gastric ulcer are much graver than we have been led to suppose. The old statement that a very large percentage of cures obtained by medical treatment will have to be, in the light of these figures, revised. Another point that is interesting is the fact that it is not simply hemorrhage alone or perforation alone that is to be feared in this disease as a serious complication or sequel, but it has been found that a great many cases of cancer have developed after a previous history of ulcer of the stomach. Then we have the very distressing and sometimes very serious complications of stricture within at the pylorus, and, finally, adhesions forming outside following perigastritis, giving rise often to very painful symptoms indeed. So that gastric ulcer, although it often is cured medically and perhaps gets well of itself in a certain number of cases, is a disease which needs our careful study and the careful study not only of the physician, but of the surgeon as well, and I think that within the last few years the surgeons are turning their attention very seriously in this direction. A great deal of new and interesting literature is being produced in consequence.

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[1] See page 389 of the Journal.

[3] Archives of Ophthalmology, May, 1899.

[4] Loc. cit., vol. xxviii, 2.

[5] Klin. therap. Wochenschr., 1898.

[6] Wien. klin. Wochenschr., November, 1898.

In regard to the surgical side of it Dr. Richardson has shown you in his paper what can be done. You will also observe during the period of ten years which was included in the statistics of Dr. Greenough and Dr. Joslin there was no case of perforation that survived in the Massachusetts Hospital, so that that complication was an extremely fatal one, and it is of interest of course to us all to hear the report of any case that has been a successful one and also to hear of all the cases, successful or unsuccessful, so that we may study the conditions which may enable us to achieve success in the future. Successful operations for perforation are now not so rare as they were. A number have been reported. They certainly are a great emergency in abdominal surgery and require very early diagnosis and very prompt interference. I had two cases this winter at the Massachusetts Hospital of perforation from gastric ulcer. In the first I made the diagnosis and the patient died after an operation. In the second I did not make the diagnosis and the patient recovered after an operation. In the first case perforation did not come on suddenly, as is often the case in these complications. It seemed to have been preceded by a considerable amount of perigastric inflammation, that is, there must have been a considerable amount of protective peritonitis developed around the ulcer as it was eating its way through the stomach. The patient came into the hospital having the symptoms of a peritonitis in the neighborhood of the pylorus or gall-bladder — you might say in the right upper quadrant of the abdomen. He came in as I was going away one afternoon and I advised noninterference that day. The next morning the patient was decidedly worse, and after seeing him in consultation with Dr. Fitz, I advised an immediate operation performed. It was on the second day, apparently, of the perforation, and then it seemed clear to me that it was perforation of the stomach. As the patient wished to make many preparations for the operation, it was not until late in the afternoon that I was allowed to operate. When the abdomen was opened there was a large perforation, the peritoneum was full of gas and green vomitus, and he did not survive the operation through the night.

In the second case the patient was operated upon as soon as I saw him, but not until about twelve hours after the perforation had taken place. He was brought to the hospital in the evening late, and Dr. Shattuck saw him at his visit in the morning and advised immediate operation, and thought as I did, that on the chances it was appendicitis. The patient was a young man about twenty-one, and there was not a very clear history of gastric ulcer, if I recollect rightly, in this case. Operation was performed, a small perforation not far from the pylorus found, suturing quickly done, the abdomen very thoroughly washed out with several gallons of salt solution, and the patient made an uninterrupted recovery.

The subject is such a large one it is difficult to go into the question of the treatment of hemorrhage and precisely what the indications for interfering are. Writers generally seem to think that it is not the cases of profuse sudden hemorrhage who ought to be the subjects of interference, but rather the slow, repeated ones which are gradually sapping the vitality of the patient, and then there comes the question what to do in case of hemorrhage. In some of these cases no distinct ulceration is found, the stomach is in a state of congestion, with ecchymotic points. In such a case it seems difficult to know exactly what to do. The advice has been given to tie some of the arteries of the greater or lesser curvature of the stomach — a very simple operation and one which might possibly make a decided difference in the amount of hemorrhage. Physiological rest of the diseased part is always indicated. The operation of gastro-enterostomy has found great favor and with some surgeons it is almost considered a panacea. One French surgeon performs gastro-enterostomy for almost every affection of the stomach. In this manner the food is sidetracked from the pyloric end, and if we assume that the pyloric end of the stomach is not in such intimate connection with the body of the stomach as has been shown in Dr. Bowditch's laboratory, we can readily see how anastomosis would shut it off pretty effectually and in that way an opportunity given for the ulcer to heal. The operation for gastrolysis is an extremely simple operation and it is one which makes one feel like making an exploratory operation where symptoms of pain in the region of the pylorus persist even after treatment. The exploratory incision sometimes reveals trivial adhesions in the neighborhood of the pyloric end of the stomach and gall-bladder, and the division of these gives complete relief.

Dr. Farrar Cobb: A year ago I read a paper before this Society on the operative treatment of general peritonitis. I then took occasion to collect all the reported cases of operation for perforating gastric ulcer and, as I remember those figures, I found 144 cases. The mortality of the operation was 41.5 per cent. A very interesting part of the figures, as I remember them, was that only 44 cases of perforating gastric ulcer had been operated on up to 1895 and 34 died. The 100 additional cases had all been operated on between 1895 and the spring of 1898, and the percentage of recovery was very much greater. Of the cases operated on within twelve hours after perforation 78 per cent. recovered.

Dr. Morse: I have been very much interested in Drs. Joslin and Greenough's paper. My impression is, however, that gastric ulcer is more common in Boston than their paper shows. I should say that my clinic presented a considerably larger proportion of cases of gastric ulcer. It also seems to me that a larger proportion of the cases are in women than their figures seem to show. I have found, as they have, that tenderness is a rather unimportant symptom. I have seen but two cases of perforation from gastric ulcer. One in Dr. Mason's service, which was brought to the hospital later, was operated on by Dr. Munro and died. The other I saw two months ago — a baby seven weeks old, breast fed, when six weeks old began to have pain and distention of the abdomen, with vomiting and diarrhea. The symptoms grew steadily worse and the baby was brought to the Out-patient Department of the Infants' Hospital. Dr. Dane and I saw the baby together and made up our minds that there was a general peritonitis, and that the only possible chance for the baby lay in an operation. The abdomen was greatly distended, and as soon as it was opened almost all of the intestines came out. The peritoneum was all markedly injected, but did not contain any fluid or any gastric contents. The intestines were punctured and gas let out; they were then carefully examined, but no cause for the general peritonitis was found. The abdomen was flushed out with salt solution and gauze drainage left in. The baby died in about three days.

At the autopsy Dr. Whitney found a round ulcer of the stomach on the posterior wall near the pylorus, with a pin-hole perforation which had evidently allowed the germs to get into the cavity without allowing the food to pass. I think this must be nearly the youngest case on record.

Dr. Burnside Foster, of St. Paul: I do not know that I have anything to add. I am very glad to have an opportunity of expressing my appreciation for the privilege of listening to this paper and discussion. I am not in the habit in my own practice of seeing very much of gastric ulcers, although incidentally I have seen five cases operated in the practice of other surgeons, two of which recovered. There came to my mind as I listened to this discussion a rather interesting experience in regard to this subject, showing the difficulties of diagnosis. A few weeks ago I happened to be in Baltimore, and at the Johns Hopkins Hospital I had the opportunity of seeing Professor Welch perform an autopsy. The case was one upon which no positive diagnosis has been made. The man had been a hard drinker, in the hospital many times, with a cirrhotic liver, and died apparently from intestinal hemorrhage; no suspicion of any trouble with the stomach. Finally, Dr. Welch, in the course of his remarks, was endeavoring to explain the tendencies of the hemorrhage which had taken place, when suddenly he found a considerable ulcer of the stomach which had not been suspected, as there had been no clinical symptoms relating to the stomach, although the man had been an habitué of the hospital for some time. That occurred to me as an instance of the fact that gastric ulcer is very often almost devoid of symptoms referable to the seat of the disease.

AMERICAN PEDIATRIC SOCIETY.

(Concluded from No. 15, p. 369.)

The Eleventh Annual Meeting of the American Pediatric Society was held at Deer Park, Md., June 27, 28 and 29, 1899.

SECOND DAY.

Dr. J. P. Crozer Griffith, of Philadelphia, reported a case of

TRANSPOSITION OF THE VISCERA AND OF THE GREAT VESSELS; WITH PHOTOGRAPH.

The patient, a boy, eight months old, began three months previous to admission in the hospital to have attacks of cyanosis and dyspnea lasting about twenty minutes and occurring half a dozen times a day. He became blue in the hands, feet and face, and had rapid breathing. On admission the child seemed ill and was distinctly cyanotic. A systolic murmur was heard with greatest intensity at the pulmonary cartilage and at the third left interspace close to the sternum, as well as at the aortic cartilage and apex. It was not transmitted to the axilla and there was no thrill.

The diagnosis was made of pulmonary stenosis probably associated with perforate septum ventriculorum. The child soon sickened with what appeared to be symptoms of pneumonia, cyanosis increased and he was so weak that he was treated purely symptomatically and the actual condition of the viscera was not investigated.

Dr. Griffith exhibited the post-mortem specimens showing the following peculiarities: The aorta arises from the right ventricle, and passing upwards arches slightly from left to right, then almost directly backward over the right bronchus and descends upon the right half of the vertebral column; the coronary arteries arise from the right ventricle; the pulmonary artery from the left ventricle, to the left of, and slightly posterior to, the origin of the aorta. The liver lies chiefly to the left side and the spleen lies in the mid-axillary line in the right hypochondrium; there are two supernumerary spleens.

Dr. Chapin said that he had presented a case to the New York Academy of Medicine some years ago where the heart was on the right side and the liver on the left, but his patient was in perfect health and the transposition of the viscera was accidentally discovered.

Dr. Koplik had reported a similar case in which the patient was in good health, except for occasional attacks of asthma.

Dr. Northrup said that some years ago he had seen a case of symmetrical transposition of all the viscera in an adult female. Since that time he had made over 2,000 autopsies without discovering a case of transposition in the infant.

Dr. Griffith remarked that this was the fifth case he had seen.

Dr. R. G. Freeman, of New York, made

OBSERVATIONS ON CERTAIN ABNORMAL CONDITIONS IN LIVERS OF INFANTS AND CHILDREN.

Dr. Freeman has carefully studied the autopsy reports at the New York Foundling Hospital with special reference to the condition of the liver. These consisted of some 500 cases, and he finds that cirrhosis of the liver is very rare in infancy, as is also the condition of waxy liver. A careful study of fatty livers is made, and in contradistinction to the ordinary statements given in most text-books, he formulates the following conclusions: (1) Fatty livers occur very frequently in the infants and children that come to autopsy at the Foundling Hospital — in about 41 per cent. of all cases; (2) the condition of nutrition of the child apparently has no connection with the fatty condition of the liver, the condition of nourishment in the cases having fatty livers averaging about the same as in the whole number of cases; (3) fatty livers occur rarely in the chronic wasting diseases, such as marasmus, malnutrition, or rhachitis and syphilis, unless such condition be complicated by an acute disease; (4) with tuberculosis fatty livers occur not more often than with other conditions; (5) fatty livers occur most often with acute meningitis, gastro-intestinal disorders, measles and diphtheria.

Dr. A. H. Wentworth, of Boston, reported a case of

MENINGITIS DUE TO THE TYPHOID BACILLUS.

The patient, four years of age, was seen October 1, 1898. Had always been a delicate child, but had never had any previous illness. For six days prior to entrance in the hospital had been feverish, drowsy, without appetite, and was said to have been delirious at times. On entrance in the hospital there was considerable apathy, from which she could be aroused without difficulty, although she became quite irritable. The urine contained a faint trace of albumin; its specific gravity 1.015. The examination of the blood showed 12,000 leucocytes to the centimetre. A provisional diagnosis of typhoid fever was made. The next day the night nurse reported that twice during the night the child's body became rigid, the hands clenched and the eyes were rolled upwards; this condition lasting about one minute each time. An examination of the eyes was made without result and no growth was obtained from fluid secured by spinal puncture. On the following day the child was somewhat improved and an examination of the ears showed a bulging of the right tympanic membrane, and on paracentesis an escape of air but no fluid. Widal's test was negative, though the clinical symptoms were those of a moderately severe typhoid fever.

On October 15th a second blood count showed 9,600 leucocytes. On the 16th the child became very stupid and by evening was unconscious. Tonic and clonic convulsions and Cheyne-Stokes respiration supervened. On the following day strabismus appeared and there was general rigidity of the muscles of the trunk and extremities, with spasms at intervals. Death occurred on the seventeenth day.

Lumbar puncture was performed a few hours before death, and the spinal fluid obtained was turbid and soon showed a deposit of puriform material in the bottom of the test-tube. A careful study of this deposit by all methods showed a pure culture of the typhoid bacillus.

In considering the diagnosis the author states that in favor of typhoid fever there is the onset, the duration of the disease, the character of the temperature charts, the enlarged spleen, the failure to obtain evidence of the presence of other diseases by means of physical examination, and the negative result of the first lumbar puncture, showing the absence of meningitis at that time.

As against the typhoid diagnosis there was the failure of the Widal test and the occurrence of doubtful convulsions in the early period of the disease. In favor of meningitis, due to the typhoid bacillus, there was the presence in the meninges of a purulent exudate which contained numerous typhoid bacilli, and the failure to detect the presence of other organisms by means of most careful bacteriologic examinations.

Dr. Koplik said that it had been his experience also that in some cases of undoubted typhoid fever, according to the clinical features, the Widal test had been of no assistance. He called attention to some cases reported from the Hopkins Hospital by Dr. Osler in which the diagnosis of typhoid had been verified by autopsies, and yet the reaction to Widal tests were absent throughout the course of the disease.

Dr. Freeman suggested that a negative result with the Widal test means nothing, while a positive result means everything, and hence these cases do not cast any reflection upon the value of the Widal tests.

Dr. Rotch said that he had seen a number of cases with this clinical picture, and had often thought they were cases of meningitis occurring in the course of a typhoid fever, but had had heretofore no proof that such might be the case.

Dr. F. Forchheimer, of Cincinnati, read a paper on

VACCINOID.

The subject of this paper is the peculiar manifestations of vaccinia which have usually been denominated false or spurious vaccinia. The author reviews the work done by French investigators to show the relations of these conditions to vaccinia. According to their classification, by vaccinoid is meant an atypical course of the lesions produced by the act of vaccination and they have, in their external manifestations, the same relation to vaccinia that varioloid has to variola.

Dr. Forchheimer reports a number of cases observed in his own practice, with a careful study of the subject, and offers the following conclusions: (1) Vaccinoid is always modified vaccinia; (2) vaccinoid protects against variola; (3) this protection is less than that of vaccination; (4) vaccinoid in the majority of instances is due to faulty method, rarely to increased resistance or immunity; (5) in primary vaccinations vaccinoid should always be followed by repeated attempts until either true vaccinia is produced or until positive evidences of immunity exist; (6) in the presence of an epidemic of variola vaccinoid should be followed by revaccination, both in primary vaccinations as well as in revaccinations. He believes that the more thoroughly vaccination is done the fewer the cases of vaccinoid, provided the virus is perfect; that vaccinoid is an abortive vaccinia, and abortive vaccinia is not perfect vaccination.

Dr. Freeman believed that these irregularities following vaccination will become much less frequent now that we have an improved lymph supply. He reported 70 vaccinations performed on three successive days, all of which did well. Dr. Putman and Dr. Dorning both took exception to the term vaccinoid, as it seemed to be but another word to burden the literature without really describing a condition. Dr. Forchheimer disclaimed any responsibility for the term, which has already been used quite extensively.

Dr. D. J. Milton Miller, of Philadelphia, read a paper entitled

ACUTE ARTICULAR RHEUMATISM IN INFANTS UNDER ONE YEAR, WITH REPORT OF A CASE.

He made an extensive review of the literature upon this subject, and finds that acute articular rheumatism in infants is very rare. A number of cases has been reported as such which would not bear the test of the essential features of the disease as seen in adults. He then reports an example of genuine acute polyarticular rheumatism in an infant nine months old. He considers that in the diagnosis of such a rare condition as acute articular rheumatism in young infants every other possible cause for the joint affection must be excluded before we can assert that a given case is rheumatic. The points necessary to be established in making such a diagnosis are, mobility, proneness to migrate from joint to joint, absence of all tendency to suppuration, frequency of inflammation of the cardiac serous membranes, the favorable influence of the salicylates, and a family history, together with the absence of such affections as are apt to be attended with inflammation of the joints. According to this test only 19 undoubted instances of acute articular rheumatism occurring in infants under one year were found in the literature.

Dr. Crandall said he thought the condition was more common than this in young children, as he had seen a number of acute attacks.

Dr. Jennings reported a case occurring in a child of seven months and terminating fatally.

Dr. Koplik said he had only seen three cases in the course of his practice, but of course their frequency would vary according to the class of material one meets with.

Dr. Griffith had never seen but one case.

Dr. F. A. Packard, of Philadelphia, read a paper entitled

URTICARIA OF THE MUCOUS MEMBRANES.

This paper was written to suggest the possible frequency of the condition of internal urticaria as an explanation of certain cases otherwise difficult to understand, such as the so-called "stomach cough" and "sore throat of indigestion." Dr. Packard then reports the histories of several cases of urticaria associated with asthma or bronchitis, and, with the cases abstracted from literature, finds a total of 34 in which the connection between the skin lesion and the respiratory symptoms is quite close. The order of the occurrence is not uniform, and while in many cases there seems to be a balancing between the cutaneous and respiratory lesions yet the two systems are frequently involved at the same time.

Dr. Blackader said that in conditions of bronchitis in children he had frequently noticed an eruption on the skin, and that during the time this remained there seems to be a subsidence of the bronchitis.

Dr. Dorning had not seen an urticaria of the mucous membrane of children but related two cases occurring in adults.

Dr. John L. Morse, of Boston, read a paper on

THE RENAL COMPLICATIONS OF THE ACUTE ENTERIC DISEASES OF INFANCY.

During the summer of 1898 Dr. Morse examined the urine of 70 infants ill with uncomplicated diarrheal diseases. They were all out-patients at the Infants' Hospital, Boston, and hence many could not be examined more than once. All were under two years of age, 47 being under one year. The urine was obtained by catheterization, scrupulous care being taken as to cleanliness of the catheters. Tables showing the extent of the investigation and the result of the examinations are appended. He believes it probable that more or less marked degenerative changes occur in the kidneys in many, if not most, cases. These degenerative changes are due to the action of bacteria or toxins, usually the latter. Inflammatory changes are rare. Albuminuria occurs in about 15 per cent. of all cases, and casts are found in 60 per cent. of these. The presence of albumin and casts does not justify the term "nephritis," and is not of bad prognostic import.

Dr. Koplik referred to a paper which he had published in January, giving a report of urine examinations in 65 cases of gastro-enteritis. He found albumin and casts in the majority of cases, but could not trace any connection between the presence of these elements and the clinical symptoms. He did find in the most severe cases a peculiar and distinct form of edema, very like that seen in the severe forms of atrophy with impending death. He agreed with Dr. Morse that the great majority of these cases get well under a conservative treatment and thought that their different findings simply meant that he had struck a run of more severe cases.

Dr. Adams had examined a considerable number of cases with practically the same results given by Dr. Morse.

Dr. Chapin said he had been surprised to note what a large percentage of children with diarrhea have albuminuria. As the same condition may be present in other diseases, he suggested the advisability of making a study of the urine in all the ailments of infancy to find out in what proportion of cases the kidney is affected.

THIRD DAY.

Dr. Floyd N. Crandall read a paper entitled

SCURVY IN AN INFANT OF SIX WEEKS.

The patient was born October 12, 1898. The father was not in good health, having long suffered from chronic rheumatism, while the mother, who had a valvular cardiac disease following rheumatism, was anemic and did not recover from the effects of confinement for many weeks. The child was not strong, and when seen in the sixth week there was a well-marked condition of scurvy. The child had never taken anything but breast milk, which was very abundant but thin and watery. So abundant was the supply that, though the child nursed frequently, it never emptied the breast and consequently only received "fore-milk," which contains a much smaller amount of fat than does the later milk. The child was allowed to continue nursing, but pasteurized cream was given to make up the proper amount of fat, and the results were prompt and satisfactory so far as the scurvy was concerned, but the child subsequently died from an attack of pneumonia.

Dr. Griffith called attention to the statement in a recent text-book that in scurvy occurring before the stage of eruption of the teeth there is no characteristic lesion on the gums, and said that in the collective investigation made by the Society last year 24 such cases had been reported. Of course, the Society did not assume the responsibility for all of these but he felt that certainly all of the reporters could not have been wrong.

Dr. Koplik reported a case of scorbutus marked by hemorrhage of the gums before the eruption of the teeth.

Dr. Adams reported two such cases seen in his practice during the past year.

Dr. E. E. Graham, of Philadelphia, read a paper entitled

CONGENITAL CYSTIC KIDNEYS, WITH A REPORT OF A CASE.

He saw this baby about twenty minutes after birth. It was well developed but distinctly cyanotic, breathing feebly, and the cyanosis appeared to be more marked than the heart's action and feeble breathing should produce. The body was limp and the child could not be aroused. Death occurred forty-five minutes after birth. The autopsy made four hours later showed a normal heart, small areas of lung tissue containing air, liver, spleen and mesenteric glands normal, and both kidneys cystic.

Dr. Miller gives a full consideration of the etiology and pathology of its condition.

Dr. T. M. Rotch, of Boston, reported

A CASE OF MULTIPLE OSTEOMYELITIS IN AN INFANT.

The patient was a female infant one month old, with a history of a previous erysipelas starting from the umbilicus and running down on the left leg. At the time seen the diagnosis of cellulitis and probable osteomyelitis was made. An incision was made along the inner side of the tibia and an abscess was found under the periosteum. A second abscess appeared at the posterior border of the deltoid. Cultures taken from both these abscesses showed the staphylococcus aureus. The infant died nine days later and the autopsy showed a multiple osteomyelitis.

Dr. Koplik, of New York, exhibited a new form of binaural stethoscope for infants and children.

Dr. Chapin exhibited a new tongue depressor for use in examining the throats of babies.

The officers elected for next year are President, Dr. Henry Koplik; Secretary, Dr. S. S. Adams, and Treasurer, Dr. J. Park West.

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Recent Literature.

Clinical Diagnosis. The Bacteriological, Chemical and Microscopical Evidence of Disease. By Dr. Rudolf v. Jaksch, Professor of Special Pathology and Therapeutics, and Director of the Medical Clinic in the German University of Prague. Specially revised by the author from the third English edition of the translation by James Cagney, M.A., M.D. Fourth edition, 1899. Philadelphia: J. B. Lippincott Company.

In this latest edition of this very excellent work the author has fully maintained its standard.

The additions to the subject matter, particularly in the chapters upon the blood and the gastric contents, are extensive and of great importance. The book completely omits the mention of one important method of clinical diagnosis which has been established as a result of recent investigations. We refer to lumbar puncture and the examination of the cerebro-spinal fluid in the diagnosis of meningitis. This is certainly a serious omission. With this exception, however, very little of importance which has come to light as the result of the investigations completed at the date of the publishing of the book has escaped the author.

Leçons sur les maladies nerveuses. By E. Brissaud, M.D. Second series, pp. 560. With 165 illustrations. Paris: Massar & Co. 1899.

This second series of clinical lectures delivered at the Hospital Saint-Antoine proves even more interesting than the first series, published a few years ago at the Salpêtrière to take the place of those interrupted by Charcot's death. One of the opponents of the didactic lecture in medical instruction recently admitted that there might be a place for the didactic lecture of a clinical type which should present a careful and complete summary of the latest researches on some special point in medicine — a form of lecture, he added, which was rarely delivered in any medical school. The French, more than any other nation, have possessed the secret of such lectures, and the volume before us is one more proof of the fact. The present volume opens with a review of the neuron doctrine, based chiefly upon the teachings of Van Gehuchten, and accepting absolutely his belief that nervous conduction in the neuron is always in one direction. The following lectures deal with the topography of Zoster and other trophoneuroses of the skin in relation to spinal metamerism, and the author has succeeded by his further study of this still obscure problem in giving some explanation of the problem why in spinal disease the sensory disturbances follow two separate types of distribution. A study of the sensory disturbances in some cases of unilateral lesion of the cord affords further information upon this subject. Another group of lectures of special interest in the volume are those upon infantilism and myxedema, in which he demonstrates the dependence of infantalism upon partial atrophy of the thyroid, and differentiates between two types of myxedema — one giving all the physical signs of the disease without the mental apathy, which he considers due to atrophy of the thyroid alone, and the other with the marked mental failure due to atrophy of the entire gland, including the parathyroid elements. When we add that these lectures are written with all the French clearness and vivacity it becomes evident that they well repay perusal by all interested in nervous disease.

Rheumatoid Arthritis: Its Pathology, Morbid Anatomy and Treatment. By Gilbert A. Bannatyne, M.D. (Glas.), M.R.C.P. (Edin.), Honorary Physician to the Royal United Hospital and to the Royal Mineral Water Hospital, Bath. Second edition, illustrated, pp. xii, 182. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Limited. 1898.

The appearance of the second edition of this monograph attests its popularity. It is certainly a valuable book not only to those particularly interested in the subject of which it treats, but also to the physician at large who desires a completer presentation of this important condition than the ordinary text-book offers. As a result of the writer's further researches in etiology, he is more convinced than before of the bacterial origin of the disorder, and feels justified in distinguishing two forms, one acute and undoubtedly microbic in origin, the other chronic and probably degenerative. The disease is completely discussed from its etiology to its treatment, and liberal bibliographical references given. A chapter of thirty-two pages is devoted to treatment. The book is well illustrated, though not profusely, mainly by photographic reproductions; the paper and type are excellent, and the text entertainingly written. We would recommend the book as a good presentation of the interesting questions at issue regarding the important affection of which it treats.

Text-Book of Ophthalmology. By Ernest Fuchs, M.D., Professor of Ophthalmology in the University of Vienna. Authorized translation, revised from the seventh enlarged and improved German edition by A. Duane, M.D., of New York. Pp. 860. With 277 illustrations. New York: D. Appleton & Co. 1899.

This text-book, which has run through seven German editions, is the popular student's text-book in Germany at the present time, and deservedly so, for Dr. Fuchs's text is always clear and concisely put. It is just the sort of book that one would expect from a man who has been a teacher all his professional days.

The translation and editing have been well and discreetly done, and the result is a book of reference for the general practitioner and student which has but few equals.

THE BOSTON

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AN INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE.

In the issue of *Science* for October 6th is given the report of the provisional international committee, composed of representative scientific men of various countries, regarding an international catalogue of scientific literature. That the matter is one which will not permit of much further delay, if investigators in any field of research are to keep in touch with the details of their subjects, is evident to any one who follows the growth of special literature.

The multiplication of papers on scientific topics, and the consequent inevitable multiplication of journals and periodicals is doing much to hasten the day of a uniform international index. The discontinuance of the *Index Medicus* has been a decided loss not only to America but to all readers of medical literature. With the rapidly growing development of special lines of research, it is evident that even so ably edited an index as this would soon have been obliged materially to extend its scope, even had the possibility of its adequate support been guaranteed. A point has evidently been reached when a greater degree of co-operation is required, which can only be attained by an international agreement.

To this end a meeting has been held in London, with representation from various Continental countries. Unfortunately, the American delegate was unable to be present. Various propositions were discussed, and certain preliminary action taken, looking to the development and execution of a plan which will be satisfactory to all the countries involved. With reference to the cataloguing of the applications of sciences, it was resolved that technical matters of scientific interest shall be included in the catalogue, but shall be referred to under the appropriate scientific headings; that a general list of journals indexed in the catalogue, with the abbreviations to be used as references, be issued with the first edition of the catalogue, and that a supplement giving the additions to this list be issued annually, and a new addition at the end of five years.

With regard to the frequency of publication of the parts of the catalogue, it was agreed that a volume in each subject be published at least once a year; that it is desirable that in certain sciences there shall be a bimonthly or quarterly issued of the subject catalogue.

Details of management, of expense, and of the attitudes of the various countries, differing in tradition and methods, were discussed, and merely provisional conclusions reached. It is sufficiently evident that difficulties of every sort will meet the promoters of the plan, owing to unavoidable differences of opinion as to the best means of accomplishing an end which all recognize as most desirable. The catalogue is intended to cover all recognized branches of science, among which are included human anatomy, physiology (including psychology, pharmacology and experimental pathology) and bacteriology. Further than this, as regards medicine, the proposed catalogue does not at present go. Evidently, therefore, the new index, comprehensive as its scope is intended to be, will not cover the details of practical medicine, an undertaking which it would probably be useless for it to attempt. For this we must look to other sources; in any case, it is to be hoped that a censorship of some sort may be established, whose function it will be to weed out the mass of communications which add nothing to the sum of knowledge. Such an international index as proposed will doubtless do this for such literature as comes within its province; for the rest we hope a feasible plan may be forthcoming, and be put into active operation. In our issue of September 21st we outlined a plan of abstracts in physiology, proposed by Dr. W. T. Porter, which for that line of research seems entirely practicable. The gradual extension of such a scheme to other branches of medicine would do much to bring about a better state of affairs, and is certainly possible of accomplishment.

The international committee finally agreed to recommend that an international conference, to arrive at a final decision on all matters concerning the catalogue, be held at Eastertide, 1900; that the delegates attending this conference should be charged with full powers to determine both financial and other questions; and that those chosen to act on the international council should be delegates to this conference. We sincerely hope definite results may attend this praiseworthy effort toward a uniform system of classification.

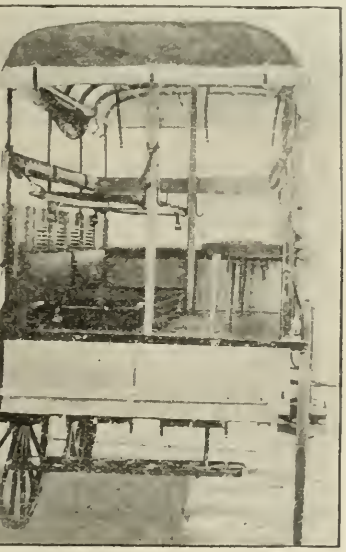
PURE-FOOD LEGISLATION.

Unless the matter be forcibly brought to our attention it is not easy to realize how generally we are imposed upon by those whom we may properly call the manufacturers of food. At a recent meeting in Boston of the Farmers' National Congress, Hon. H. C. Adams, Dairy and Food Commissioner of Madison, Wis., presented facts which are well worth our serious consideration. From his showing it would appear that practically all of our food staples may be and often are adulterated, or actually made outright from substances far removed from the advertised finished product. No doubt the possibility of defrauding the public in this matter increases year by year, as methods of chemical analysis and synthesis are coming to be more generally recognized and understood. It is an easy and a tempting step from such knowledge to its fraudulent use in the manufacture of products which are foisted on the unsuspecting buyers to their detriment and to the great gain of manufacturers. Some of the possibilities in this line we quote from Mr. Adams's remarks:

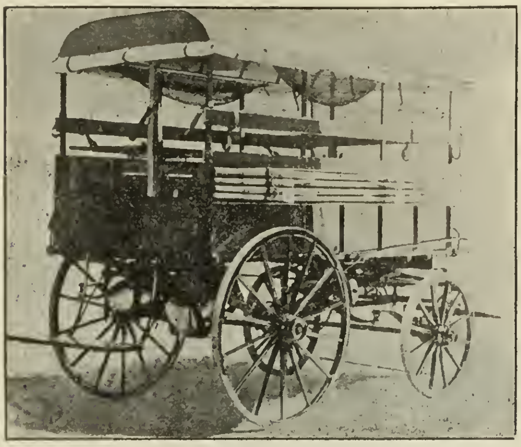
"The clumsy wooden nutmeg of Connecticut, that even a policeman might detect, has given way to artificial eggs which no hen would recognize, and to artificial butter that never knew milk. The universal demand for cheap things brings a supply. Wheat flour is adulterated with corn flour; buckwheat with wheat middlings. Vermont maple syrup is made that never saw Vermont, and is made from the sap of trees that grow in Chicago. Glucose has dethroned cane syrup. Cider vinegar is distilled from grain. A good portion of the strained honey of commerce never produced any strain upon the bees. Milk is robbed of its cream, filled with lard and sent all over the world to ruin the reputation of American cheese. Oysters are partially embalmed with chemicals. Lemon extracts are made without lemon oil, and vanilla extracts without vanilla. The hogs of the North compete with cheap cotton-seed oil of the South and mix in the same tub under the banner of lard. Artificial smoke is made for hams out of poisonous drugs. Jellies colored in imitation of the natural fruits and sold as fruit jellies flood the markets, although they are almost as destitute of fruit juice as a bar of pig iron. The embalmed-beef business has been exaggerated, but we do not need any for either soldiers or civilians. Canned fruits are preserved with antiseptics which delay the digestive processes. Baking powders under various misleading names crowd the markets. Spices enriched with pepper hulls and ground cocoanut shells are manufactured and sold by the ton. The close partnership which has existed for so many years between coffee and chicory does a thriving business in many States under the firm name of coffee. Cheapness is secured by these adulterations and false labellings, but the people are defrauded."

We quote the above statement as an example of what is going on about us, from which the poor, who need legislative protection most, are the chief sufferers. The manufacture of oleomargarine as a substitute for butter is a case in point. The necessity for legislation as applied to this product is said to be recognized now by thirty-two States, which have prohibited its sale under the guise of butter. Massachusetts has been a pioneer in the movement for improved laws, and experience has shown that State laws are usually sustained by the courts. Mr. Adams feels very strongly that we need a comprehensive national pure-food law, which shall so regulate the general question of food that its adulteration for the benefit of the few will no longer be possible. It is evident that such legislation must be somewhat slow in coming; that it will be bitterly opposed and vigorously contested in the courts by the manufacturers of adulterated foods. In the meantime, however, it is desirable that our attention should be called to the matter, and that both as individuals and as a profession, we should do what lies in our power to combat what is clearly a growing evil of very great magnitude.

THE NEW ARMY AMBULANCE.



The new style of army ambulance is the result of extensive investigation on the part of the board of medical officers appointed for this purpose, consisting of Col. Dallas Bache and Capts. G. D. Deshon and E. L. Munson. This vehicle appears to largely avoid the defects noted in the several types of ambulance now in use in the military service. The ambulance is very roomy, the wagon body being much broader than in previous models. Hanging straps, a fixed support in front and a hinged removable pole in the rear, provide means by which two ordinary service litters, in addition to those placed on the floor of the wagon body, may be utilized for recumbent patients, this feature being of great practical value for use in the field, since movement of a patient from the litter on which he was transported to the ambulance is unnecessary. To facilitate the handling of the litters in placing them in position, the back of the driver's seat is hinged. The ambulance is capable of comfortably transporting, in addition to the driver, four recumbent and one sitting patient, or two recumbent and six sitting patients, or eleven sitting patients. The top and movable seats are covered with "pantasote," a new preparation found far superior to canvas or leather for these purposes. Small hammocks, capable of being suspended from several points, are provided for the better carriage of the effects of patients. A large box under the driver's seat affords ample space for the carriage of food, dressings and supplies. The wheels are furnished with unusually broad tires, while the front set "cut under" to facilitate turning. The ambulance is very easy when in motion and is provided with auxiliary springs, which come into action under a load greater than 500 pounds. The tail gate is fastened with an improved snap lock, which is opened by a single motion. The water is carried in two large galvanized-iron tanks behind the rear axle, each weighing 50 pounds when filled. They may be filled *in situ* or may be readily removed when desired. They are so placed as to be protected from injury, especially when the tail gate is lowered, as when loaded. The vehicle is strong and solidly built, yet when complete weighs only 1,600 pounds.



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MEDICAL NOTES.

American Electro-Therapeutic Association. — The ninth annual meeting of the American Electro-Therapeutic Association was held in Washington, D. C., at Willard's Hotel, on September 19, 20 and 21, 1899. The convention was successful in point of attendance and interest, and a number of papers were read and discussed. The programme included thirty-six papers and the reports of seven standing committees on scientific questions relating to the medical application of the electrical current, with the best electrical apparatus extant. The proceedings of the convention will be found in their annual *Transactions*, to be published at an early date. The officers elected for the tenth year are: President, Walter H. White, M. D., Boston; First Vice-President, D. Percy Hickling, M.D., Washington, D. C.; Second Vice-President, Charles O. Files, M.D., Portland, Me.; Treasurer, Richard J. Nunn, M.D., Savannah, Ga.; Secretary, George E. Bill, M.D., Harrisburg, Pa. The next annual meeting will be held in New York on September 25, 26 and 27, 1900.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, October 18, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 77, scarlatina 23, measles 2, typhoid fever 40.

Death of Dr. Theron H. Carter. — Dr. Theron H. Carter, assistant superintendent at the Boston City Hospital, died suddenly October 13th. He was born in Boston, and was thirty-eight years old. He was a graduate of Brown University of the class of 1890. He graduated from the Harvard Medical School in 1893. Shortly after, he was appointed house physician at the City Hospital, where he served a year and a half. He was appointed one of the superintendent's assistants in 1896, later became assistant superintendent, and was a faithful and useful official.

More Small-Pox in Chelsea. — Several new cases of small-pox have been reported from Chelsea since our last issue. The patients have been removed to the new Hospital for Contagious Diseases, and proper precautions taken.

A Possible Disposition of the Franklin Fund. — At a recent meeting held for the purpose of determining the disposition of the Franklin Fund, Alderman Berwin suggested a vote, the essential portion of which follows: "*Voted*, that the whole of the Franklin Fund, or so much thereof as may be necessary for the purpose, be and is hereby appropriated to be devoted to the purchase of sites in the north part of Boston proper, and in those portions of Boston respectively known as East Boston, Charlestown, South Boston, Dorchester, Brighton and West Roxbury, for relief and ambulance stations, to be known as Franklin Relief Stations, and to belong to the City Hospital of Boston, and to the erection of suitable buildings thereon for such stations, and to the proper equipment of such stations for practical use. That the title thereof shall be taken in the name of the trustees of the City Hospital, such selection of sites to be approved by the Board of Trustees of the Franklin Fund before purchase. That the buildings shall be erected under the supervision of an architect by the trustees of the Franklin Fund, who shall, however, as far as may be, carry out the ideas of the Board of Trustees of the City Hospital in respect to the architecture and construction of such buildings. That the Board of City Hospital Trustees shall have full charge of the equipment of such stations for medical and surgical work." The vote did not meet with complete approval.

Growth of Perkins Institution for the Blind. — This institution, which has already done so good a work in the training of the blind, reports continued growth. The total number of pupils at present is about two hundred and fifty. The accommodations have been increased by the building of a new cottage, thereby facilitating admission to the institution. Manual training has been carried on in a systematic manner, and has proved a valuable adjunct in the general teaching.

NEW YORK.

Loomis Sanitarium Burned. — The Loomis Sanitarium at Liberty, Sullivan County, New York, for the treatment of tuberculosis, was destroyed by fire October 14th. No lives were lost. The sanitarium was built in 1895 by J. P. Morgan, in remembrance of the late Dr. Loomis, of New York City. The main building was constructed entirely of stone and closely surrounded by a number of cottages. The fire will cripple but not destroy the usefulness of the institution, for accommodations remain for many patients in the cottages and annexes scattered about the grounds. The total loss, including contents, is about $100,000, on which there is about $50,000 insurance.

State Dispensaries. — The State Board of Charities, under whose jurisdiction the dispensaries of the States were placed by law the first of the month, held a meeting in Albany on October 11th and decided finally on the rules and regulations to be promulgated for the management of these institutions. Among these are the following: Both visiting and assistant physicians and surgeons shall serve for terms of three years, this provision being adopted with the idea of affording an opportunity for a larger number of young practitioners to enter dispensary service than has hitherto been possible. Prompt and regular attendance by those holding such appointments is required. At least two women shall be appointed on all boards of managers of institutions treating women and children. In each dispensary there shall be a registrar, whose duty it shall be to receive all applicants for treatment and generally supervise the work of the institution; also a matron, who is to give attention to women patients in addition to keeping the building in order. All emergency cases and all patients known to be needy are to receive immediate treatment. When there is doubt as to the inability to pay the registrar must cause an investigation to be made, and place the result on file. Treatment shall be refused to all applicants refusing to sign a declaration of their inability to pay, and pass-cards must have printed on them the penal provision of the law. In large cities it is suggested that investigations may often be made best through charity organization societies. No cases shall be utilized for clinical purposes without the consent of patients or their parents. Dispensary druggists must be licensed apothecaries. It shall be the duty of the managers to have sanitary inspection of the dispensary building made every three months by the local health boards.

Fatal Case of Tetanus. — A fatal case of tetanus is reported in a child of four years in Williamsburg, Brooklyn, in which the disease was the result of wounds of the face inflicted by the bill of a rooster.

ARMY NOTES.

Heroism of a Surgeon. — In the recent attack on Novaleta, P. I., Assistant Surgeon C. D. Langhorne, U. S. Navy, serving with the battalion of marines, was wounded. Of his conduct on that occasion Admiral Watson cables, "Langhorne was wounded early while dressing Hill's wound; he continued caring for the wounded and sick the entire day and deserves high praise." Dr. Langhorne was born in Virginia, was educated at the Virginia Military Institute and graduated in medicine from the University of Virginia. He entered the navy in July, 1898, and was sent to Manila on the naval hospital ship *Solace*.

Hospital on Corregidor Island. — A new hospital, intended for use by convalescents, is now nearing completion on Corregidor Island, in Manila Bay. When completed it will cost about $65,000. The buildings are of wood, the main building containing three large wards, with an isolation ward for the treatment of contagious diseases. Other buildings are designed for use as quarters, administrative purposes, kitchen and dining-room, refrigerating plant, etc.

United States Hospital Ship "Missouri." — The United States Army hospital ship *Missouri* is reported as having arrived at Gibraltar *en route* to Manila.

Meeting of Association of Military Surgeons. — The eighth annual meeting of the Association of Military Surgeons was held at Kansas City on September 27th, 28th and 29th. Much interest was evinced in the sessions, although the attendance was small as compared with that of previous years, due probably to the distance of Kansas City from the Eastern States, where the bulk of the National Guard is located, and also to the celebrations incident to the return of Admiral Dewey. In addition, many of the members of the regular army are now in foreign service and found it impossible to attend. A strong effort was made to have the next meeting of the Association held in San Francisco, but it was finally decided to hold the session for 1900 in New York City during June. Col. C. H. Alden, Assistant Surgeon-General U. S. Army, who has done much to establish the Association on a successful and permanent basis, was elected president for the ensuing year.

Enlistments in the Hospital Corps. — As an instance of the magnitude of the work being carried on by the Medical Department of the Army, it is of interest to know that the enlistments in the hospital corps since the outbreak of the war with Spain exceeded the number of enlistments in the entire army of the United States during the year previous to the outbreak of hostilities. The enlistment and disposition of this force has been carried on without any great increase in the clerical strength of the Surgeon-General's Office. At the school of instruction for the hospital corps located at Washington Barracks, D. C., there were received, instructed and distributed during the period from June 30, 1898, a total of 968 men. From April 30, 1898, a date practically marking the outbreak of hostilities, to September 30, 1899, a period of seventeen months, no less than 1,510 men passed through this school, an average of about 89 men per month.

Miscellany.

MOSQUITOES AS CARRIERS OF MALARIA.

The expedition sent to Sierra Leone to investigate the habits of the mosquitoes of the genus *Anopheles* has arrived at certain definite results, some of which are given by a correspondent in the *British Medical Journal* for September 30th. The distinguishing marks of this variety as contrasted with *Culex* are very marked, not only in the adult forms but also as larvæ, which appears to be of more practical importance; the larvæ of both varieties breed in water, but with the following difference:

" *Culex* larvæ, when disturbed, immediately wriggle down to the bottom of the water. On the other hand, *Anopheles* larvæ can move not only in this manner but with a few rapid jerks along the surface; indeed, this seems to be their more common kind of progression unless much disturbed, when they sink to the bottom. These details, trifling as they may appear to be, are probably of first importance as regards tropical sanitation, because it follows that pools which contain flat-floating surface-moving mosquito larvæ may be considered to be foci of malaria.

" *Culex* larvæ live everywhere in warm countries — in almost every pot, tub, well, cistern, broken bottle, empty sardine tin, or anywhere where a little water lodges. It must be observed, therefore, that the sources of *Culex* cannot well be removed by drainage of the soil, being dependent more on slovenly domestic arrangements than on anything else. In fact, the common species of *Culex* are essentially domestic animals. Neither are they very dependent on rain, slop water, drains, garden tubs, etc., being found at all seasons. Now, as Ross has pointed out, malaria is amenable to drainage and is largely influenced by the rainfall, while its distribution is very local and not nearly so general as that of at least the commoner species of *Culex*. Hence his inference that malaria depends on a kind of mosquito which breeds not in pots of water but in puddles on the ground.

" The recent work of the expedition has given ample confirmation of this view. *Culex* is essentially a pot-breeding mosquito; *Anopheles*, a puddle-breeding mosquito — or even a stream-breeding mosquito. Hence the familiar laws of the prevalence of malaria. But *Anopheles* not only requires puddles to breed in but puddles of a certain kind. Hence the practical importance of the subject.

" Further than this *Anopheles* larvæ are found in puddles containing algæ. But there is more than a mere association between the larvæ and the algæ; the former eat the latter. It has been found that larvæ hatched from the egg will not grow unless given large quantities of algæ, which they are seen to devour rapidly, while the crops of the larvæ caught in the puddles are found crammed with the same weed. Hence it would appear as if *Anopheles* is, in the larval stage, essentially an algæ-eating insect, and an insect which generally, if not always, breeds in association with that vegetable.

" From a theoretical point of view these observations are of interest, because they satisfy and explain some long-known laws of the diffusion of malaria — such as the connection of the disease with rainfall and stagnant water, its disappearance on drainage of the soil, and so on. The supposed influence of turning fresh soil may be explained as being due to the formation of *Anopheles* puddles. From a practical point of view, however, the observations just given are still more important, because they enable us to avoid draining a whole malarious area, a thing which few towns in the tropics can afford; and by teaching us how to indicate with scientific certainty the precise foci of malaria enable us to reduce the cost to a minimum by dealing only with the actually dangerous spots. A little consideration will show that level ground is almost a necessity for pools containing algæ, at least in the season of heavy rains. At present when a heavy tropical shower falls almost every six hours all the watercourses with any slope are scoured out so deeply that the bare rock is exposed, while after the shower, because of the same slope, all the water, except in a few pools in the rock, drains away almost at once. Mosquito larvæ can never live in such places."

Evidently the recognition of the larvæ and their habits of life is the first step toward their extermination. If the researches alluded to above stand the test of further experience, we may certainly look for positive and efficacious prophylactic measures directed against the spread of malaria.

Correspondence.

PHILADELPHIA LETTER.

Medical Schools: Medico-Chirurgical, Woman's, Jefferson, University of Pennsylvania.

Philadelphia, Pa., October 8, 1899.

Mr. Editor: — The Philadelphia medical colleges have begun work this year under favorable auspices. The Medico-Chirurgical opened its nineteenth session with an address by Prof. Charles W. Burr. Nearly one hundred first-year students have matriculated, and a handsome and capacious new building on the corner of Seventeenth and Race Streets is well advanced in construction. This building is of stone, brick and steel, and will be the most important building yet erected for the college.

The Woman's Medical College begins its fiftieth session, and the Jefferson College begins its seventy-fifth session. The new six-story building of Jefferson, at Tenth and Walnut Streets, was thrown open to inspection on October 2d. This structure was designed by James H. Windrim, an architect of wide experience in the construction of public buildings, and this last creation embodies all that could possibly be desired in the space at his command. The frontage is 118 feet on Walnut Street and 108 feet on Tenth Street, in the heart of the business portion of Philadelphia, adjacent to the old buildings and near the Jefferson College Hospital, which will still be used for clinical teaching. The structure is, in the main, fireproof. An iron stairway and a steam elevator, centrally placed, afford access to all parts of the building and facilitate ventilation. There is a smoke-proof tower, or fire escape, with access from the adjoining rooms by means of a system of balconies on the outer wall, enclosed within the building, thus avoiding the unsightly appearance incident to fire escapes on external walls. The chemical laboratory, 21 by 76 feet, does not appear capacious enough for the large classes at Jefferson, especially as it is the intention to use this laboratory for both first and second-year work.

The physiological laboratory, immediately above, is well equipped with modern apparatus for class work. Under the direction of Profs. Henry C. Chapman and A. P. Brubaker this department of medical instruction has attained a high degree of excellence. Other laboratories for pharmacology, histology and pathology, a valuable pathological museum with handsome new cases, lecture halls and an amphitheatre, etc., give facilities which have long been needed by the college. Much has also been done for the personal comfort of students, and this will react favorably on the course of instruction. No changes of importance have occurred in the faculty.

The Medical Department of the University of Pennsylvania opened on October 2d with about one hundred and thirty first-year students. The entrance examinations, applicable to those who do not hold college degrees, include a good knowledge of English literature, Greek and Roman history, algebra and physics; and examinations in either Latin and Greek, or Latin, French and German. The Greek includes Xenophon and Homer, and the Latin, Cicero, Cæsar and Virgil. The following are some of the entrance papers used last month:

Greek History (answer the first question and five of the others): (1) Draw a map of Greece and locate Thermopylæ, Mt. Olympus, Corinth, Delphi, Thebes, Bœotia, Corcyra, Melos, Sparta and Actium. (2) What effect had the indented coast line of Greece upon the development of her people? (3) What Greek state sent out most colonies, and for what reason? (4) Describe the education of a Spartan youth. (5) What were the respective elements of strength and weakness in the Athenian Empire in the time of Pericles? (6) What were the general causes of the Peloponnesian War? (7) Define ostracism and give two examples. (8) What is meant by the "Socratic dialogue"?

Roman History (answer the first and five of the others): (1) Draw a map of the Roman Empire in the Age of Augustus, locating ten Provinces. (2) What was the commercial importance of the situation of Carthage? (3) What were the Licinian Laws? (4) What were the duties of the consul, censor, quæstor? (5) Who were Fabius Maximus, Spartacus and Sallust? (6) How was Gaius Gracchus overthrown? (7) Why did Catiline secure support? (8) Describe a Roman school.

English History (answer the first and five of the others): (1) Draw a map of England and locate Sussex, London, Bristol, Cambridge and Chester. (2) Why was the English resistance to the Danes so unsuccessful? (3) What were the effects of the Norman Conquest on language, art and trade? (4) What made Henry II so famous? (5) What were the principal lines of English trade in the fourteenth century? (6) Define Lollards, chivalry, the poll-tax, the mendicant friars. (7) What religious parties were there in England at the time of the accession of Elizabeth? (8) How did a republic come into existence in England in the seventeenth century?

Physics: (1) State the laws with formulas for uniformly accelerated motion. A stone thrown vertically upward rises 78.4 m. With what speed did it start? (2) Calculate in dynes the weight of 1 litre of mercury (sp. gr.=13.6). State the laws of the pendulum. (3) Upon what does the speed of sound depend? Explain the "law of inverse squares" as applied to sound. (4) Define the unit of heat. How much heat will change 1 g. of ice at temp. of $-60°$ C. to steam at $200°$ C? (5) Draw a diagram of a convex lens showing the relation of object and image. Explain briefly a microscope. (6) What is electric induction? State Ohm's law and define the units involved.

The faculty of the Medical Department of the University of Pennsylvania has lost the services of Dr. Charles B. Penrose, professor of gynecology, who resigned because of ill health. The trustees have appointed Dr. John G. Clark, associate in gynecology at Johns Hopkins University, to fill the chair, and he will be formally elected at the next meeting. Dr. Clark is to enter at once on the duties of his position. Dr. Simon Flexner, of Johns Hopkins, has been elected professor of pathology, and these two appointments give general approval. Dr. Clark has declined appointment to two other leading medical schools in this country in order to accept the place at Pennsylvania. He is thirty-two years old and graduated from the University of Pennsylvania in 1891. Dr. Clark served as resident physician in the Children's and in St. Agnes's Hospitals in Philadelphia, and Bellevue Hospital in New York, and of late has been closely associated with Prof. Howard A. Kelly at the Johns Hopkins. He has also had the benefit of the best European training. Dr. Simon Flexner's appointment is of several months' standing, and he has just returned from a trip to the Philippines.

Provost Harrison recently announced the gift of $50,000, which had been made within the past few days by a donor who does not wish his name to be made public at this time, to be used for the additions to the dormitory system now being extended. Contracts calling for the expenditure of several hundred thousand dollars have been made, and when completed students at the University will be in possession of the most perfect system of dormitories in this country, representing a total outlay of about $1,000,000.

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GLYCERINIZED VACCINE LYMPH AND VACCINE POINTS.

Dover, N. H., October 16, 1899.

Mr. Editor: — Under "Medical Notes" in your issue of October 5, 1899, is a reference to statistics collected by Dr. Albert C. Barnes, of Philadelphia, in regard to the various methods of vaccination and their efficacy. He finds that when glycerinized lymph is used vaccination is successful in from 90 to 100 per cent. of primary cases, and that a high estimate of successful "takes" from vaccine points is shown to be not over 60 per cent. in primary cases. I am astonished at the conclusion arrived at in regard to the frequent alleged failure of vaccine points. I vaccinated 106 primary cases between August 29 and October 5, 1899, using vaccine points exclusively, and had only six failures. Yours truly,

John R. Ham, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, October 7, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1174	436	10.16	11.44	4.88	1.60	2.08
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis . . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	206	57	24.00	8.64	1.92	3.36	6.72
Baltimore . .	506,389	167	49	15.60	12.00	6.60	3.60	3.60
Cincinnati . .	405,000	92	—	15.26	10.90	6.54	2.18	4.36
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	—	—	—	—	—	—	—
Washington .	277,000	121	30	16.20	12.15	4.86	4.86	6.48
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	47	18	19.17	4.26	6.39	8.52	2.13
Nashville . .	87,754	34	6	14.70	5.88	2.94	5.88	5.88
Charleston . .	65,165	26	7	3.85	15.40	—	3.85	—
Worcester . .	111,732	28	6	14.28	10.71	10.71	3.57	—
Fall River . .	103,142	33	18	3.03	12.12	3.03	—	—
Cambridge . .	92,520	22	7	20.65	16.60	8.30	—	12.45
Lowell . . .	90,114	31	18	19.38	6.46	16.15	—	—
New Bedford .	70,511	11	6	27.27	9.09	9.09	—	—
Lynn	68,218	23	5	4.35	4.35	—	—	—
Somerville . .	64,394	9	3	11.11	22.22	—	11.11	—
Lawrence . .	59,072	14	6	28.56	21.42	21.42	—	7.14
Springfield . .	58,266	17	6	29.40	17.64	5.88	5.88	17.64
Holyoke . . .	44,510	13	8	46.14	23.07	38.45	—	—
Brockton . .	38,759	—	—	—	—	—	—	—
Salem	37,723	13	5	—	15.38	—	—	—
Malden . . .	36,421	2	1	—	—	—	—	—
Chelsea . . .	34,235	14	2	—	—	—	—	—
Haverhill . .	32,651	7	3	—	7.14	—	—	—
Gloucester . .	31,426	3	1	33.33	33.33	—	33.33	—
Fitchburg . .	30,523	8	4	12.50	—	—	—	—
Newton . . .	30,461	6	5	—	—	—	—	—
Taunton . . .	28,527	11	4	27.27	9.09	—	—	18.18
Everett . . .	28,102	6	1	16.66	16.66	16.66	—	—
Quincy . . .	24,578	—	—	—	—	—	—	—
Pittsfield . .	23,421	4	1	—	—	—	—	—
Waltham . .	22,791	8	2	—	—	—	—	—
North Adams .	21,583	7	1	—	28.56	—	—	—
Chicopee . .	18,316	8	6	37.50	12.50	37.50	—	—
Medford . . .	17,190	4	1	—	—	—	—	—
Newburyport .	15,036	2	—	—	—	—	—	—
Melrose . . .	14,721	1	—	—	—	—	—	—

Deaths reported 2,188; under five years of age 728; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 280, consumption 250, acute lung diseases 156, diarrheal diseases 119, diphtheria and croup 72, typhoid fever 52, whooping-cough 12, cerebro-spinal meningitis 12, scarlet fever 5, measles 5, erysipelas 2.

From whooping-cough New York 8, Lowell, Lynn, Fitchburg and Taunton 1 each. From cerebro-spinal meningitis New York 5, Baltimore 3, New Bedford 2. From scarlet fever New York 2, Providence, Charleston and Holyoke 1 each. From measles New York 5.

METEOROLOGICAL RECORD

For the week ending October 7th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....1	30.37	46	53	39	64	59	62	N.W.	N.	17	13	C.	C.	
M...2	30.46	40	45	34	66	61	64	N.W.	N.	8	11	O.	O.	
T....3	30.40	44	52	35	63	50	56	N.	N.W.	15	7	C.	C.	
W...4	30.28	50	65	36	60	49	54	W.	S.W.	8	12	C.	C.	
T....5	30.12	62	71	53	66	66	66	W.	W.	9	5	O.	C.	
F....6	29.86	54	57	50	88	94	91	N.W.	N.	3	20	R.	R.	.67
S....7	30.09	52	60	45	73	69	71	N.	N.	12	4	C.	C.	.02
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* O., cloudy; C., clear; F., fair; G., fog; H. hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 13, 1899.

J. A. Hawke, medical inspector, promoted to medical director.

P. A. Lovering, surgeon, ordered to the Mare Island Navy Yard.

D. O. Lewis, surgeon, detached from the Mare Island Navy Yard and ordered to the "Iowa."

M. H. Simons, surgeon, detached from the "Iowa" and ordered to Washington, D. C., October 23d, for examination for promotion and then home to wait orders.

L. W. Atlee, surgeon, detached from the "Solace" and resignation accepted.

C. P. Bagg, passed assistant surgeon, detached from the "Pensacola" and ordered to the "Solace."

J. E. Page, passed assistant surgeon, ordered to the "Pensacola."

W. H. Wheeler, assistant surgeon, detached from the "Solace" and ordered home to wait orders.

C. A. Siegfried, medical inspector, detached from the Torpedo Station, Newport, R. I., October 17th, and ordered to continue in charge of the Naval Hospital, Coasters Harbor Island, R. I.

J. M. Steele, surgeon, ordered to duty at the Torpedo Station, Newport, R. I., October 17th.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING OCTOBER 12, 1899.

Murray, R. D., surgeon. To proceed to Miami, Fla., for special temporary duty. October 3, 1899.

Gardner, C. H., passed assistant surgeon. Granted leave of absence for two days. October 4, 1899.

Corput, G. M., assistant surgeon. To report to medical officer in command, Baltimore, Md., for duty and assignment to quarters. September 29, 1899.

Fox, Carroll, assistant surgeon. Relieved from duty at Baltimore, Md., and directed to report to medical officer in command of the Reedy Island Quarantine Station for duty and assignment to quarters. September 29, 1899.

Primrose, R. S, acting assistant surgeon. Granted leave of absence for six days. October 4, 1899.

Miller, Charles, hospital steward. Granted leave of absence for twenty-one days from October 8th. October 5, 1899.

Murray, R. D., surgeon. To proceed to Key West, Fla., for special temporary duty. October 7, 1899. To assume command of the Service at Key West, Fla., in accordance with orders of May 15, 1899. October 12, 1899.

Carrington, P. M., surgeon. To proceed to New York, N. Y., as inspector of unserviceable property. October 11, 1899.

Perry, T. B., passed assistant surgeon. To report to Chairman, Board of Examiners, New York, N. Y., for examination to determine fitness for promotion. October 7, 1899.

Woodward, R. M., passed assistant surgeon. To report to Chairman, Board of Examiners, New York, N. Y., for examination to determine fitness for promotion. October 7, 1899

Vaughan, G. T., passed assistant surgeon. To report to Chairman, Board of Examiners, New York, N. Y., for examination to determine fitness for promotion. October 7, 1899.

Wertenbaker, C. P., passed assistant surgeon. To proceed to Bristol, Tenn., for special temporary duty. October 11, 1899.

Decker, C. E., assistant surgeon. To proceed to San Diego, Cal., and assume command of the Service, relieving Assistant Surgeon L. E. Cofer. October 7, 1899.

Greene, J. B., assistant surgeon. To report to Chairman, Board of Examiners, New York, N. Y., for examination to determine fitness for promotion. October 7, 1899.

DEATH.

W. R. McAdam, assistant surgeon, died of yellow fever at Key West, Fla., October 12, 1899.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — The first meeting of the Society for the year 1899-1900 will be held at the Medical Library, 19 Boylston Place, on Monday evening, October 23, at 8 o'clock.

Dr. Chas. Harrington will a paper entitled "Disinfection and Prevention in the Sick-room."

A. K. Stone, M.D., *Secretary*, 657 Boylston St.

Suffolk District Medical Society. — There will be a stated meeting at 19 Boylston Place on Saturday evening, October 28, at 8 p. m.

Papers: "The Hospital for Chronic Disease," Dr. E. W. Taylor. Discussion by Drs. Abner Post and J. J. Minot.

"Some Points in the Diagnosis and Treatment of Diseases of the Chest," Dr. Richard C. Cabot. Discussion by Drs. H. F. Vickery, Geo. F. Sears and Henry Jackson.

Business: Election of a committee of five to prepare a list of candidates for officers of the Society.

Supper after the meeting.

Herbert L. Burrell, M.D., *President*.
Howard A. Lothrop, M.D., *Secretary*,
10 Marlborough Street.

Suffolk District Medical Society. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, October 25, 1899, at 8 p. m.

Papers: Dr. E. S. Boland, "Unlooked-for Dystocia in Certain Multiparæ."

Dr. Edgar Garceau: "A Case of Extirpation of Kidney and Ureter for Tubercular Disease."

R. A. Kingman, M.D., *Chairman*.
C. H. Hare, M.D., *Secretary*.
285 Marlborough Street.

Suffolk District Medical Society, Censors' Meeting.— The Censors of the Society will meet for the examination of candidates at the Medical Library, 19 Boylston Place, on Thursday, November 9th, at 2 o'clock.

Candidates should make personal application to the Secretary between 2 and 3 and present their medical diploma, or its equivalent, at least three days before the examination.

Howard A. Lothrop, M.D., *Secretary*.
10 Marlborough Street.

American Public Health Association. — The twenty-seventh annual meeting of the Association will be held at Minneapolis, Minn., Tuesday, Wednesday, Thursday and Friday, October 31, November 1, 2, 3, 1899.

New York State Medical Association. — The sixteenth annual meeting of the Association will be held Tuesday, Wednesday and Thursday, October 24, 25 and 26, 1899, at the New York Academy of Medicine.

RECENT DEATH.

Pedro Y. Jiminez, M.D., a graduate of Bellevue Hospital Medical College, and until recently house surgeon at the Columbus Hospital, died in New York at the age of twenty-eight years. He was a native of Porto Rico and had intended returning there to practise.

BOOKS AND PAMPHLETS RECEIVED.

Burdett's Hospitals and Charities, 1899; The Year-book of Philanthropy and Hospital Annual. Tenth year. London: The Scientific Press, Limited. 1899.

An Introduction to Dermatology. By Norman Walker, M.D. With a frontispiece, 29 plates and 34 illustrations in the text. New York: William Wood & Co. 1899.

Informes Rendidos por los Inspectores Sanitarios de Cuartel y los de los Distritos al Consejo Superior de Salubridad Correspondientes al Año, de 1898. México. 1899.

The Disease of Convulsive Tic (Gilles de la Tourette's Disease), with Special Reference to a Hypothesis as to Etiology. By Bernard Oettinger, M.D., Denver, Colo. Reprint. 1899.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and subjects. Second series. Vol. IV. Washington: Government Printing Office. 1899.

Original Articles.

ACUTE ABDOMINAL SYMPTOMS DEMANDING IMMEDIATE SURGICAL INTERVENTION.[1]

BY MAURICE H. RICHARDSON, M.D., BOSTON.

(Continued from No. 16, p. 384.)

BESIDES the foregoing cases I have had the opportunity of seeing a large number of similar cases in the hands of my colleagues. The same general results have occurred; the same brilliant successes in extra-uterine pregnancies, in tumors with twisted pedicles, in inflammations of the gall-bladder — in fact, in all the lesions in which from their nature intervention is usually in good season; the same deplorable failures in general peritonitis, in acute obstructions, in intestinal extravasations — cases in which from their very nature intervention must be as a rule too late.

The list of deaths in the classes of cases here presented is appalling, especially in view of the fact that every class admits of cure if the remedy is applied early enough. It is true that some are vastly more serious and more quickly beyond aid than others; some will have a considerable mortality, even if operated upon without the least delay; some, if operated upon within a period that admits a possible cure; but the fact that all are theoretically curable makes the excessive mortality especially humiliating.

Is it not a duty, therefore, for those of us who see many of these cases to demonstrate again and again, as far as human error and frailties will permit us, those signs by which possible impending disaster may be recognized, to emphasize on every occasion the one great cause of disaster in these formidable lesions — the unnecessary loss of time; and to shorten as much as possible the interval that must elapse between nature's first call for help and the surgeon's response? An affirmative answer cannot be too emphatic, especially when we remember that in spite of years of discussion and experience the frequency of deaths in these cases still proves the necessity of an earlier appreciation of initial symptoms and a quicker resort to the knife.

The chief reason why valuable time is lost is plain and it must be repeated time and again; the call for help is not heard, or if heard it is not understood; or even if heard or understood, it is not answered.

Let us consider briefly the reasons for such failure to respond. That they are natural and seem sufficient I admit; that they are insufficient, I must nevertheless assert.

The fault, if it can be called a fault, lies with us who see these things and do not impress their importance upon the attending physician. That a practitioner who encounters, perhaps for the first time in his life, intussusception, pancreatic hemorrhage, perforation of the stomach, or even the more common lesions, internal strangulation, ectopic gestation, appendicitis — that a practitioner should not be blamed for not recognizing such a lesion is obvious. The most experienced may fail. That he should not be able, however inexperienced, at least to suspect such emergencies is the fault of his teachers.

The first and most important symptom in the lesions enumerated in the foregoing pages is pain. The only exception is in post-operative hemorrhage, which is often so insidious in its onset as to excite no alarm. I have known death to take place from hemorrhage from a stitch-hole, unsuspected till the last moment.

Nature first calls for relief by a symptom that in itself is urgent and irrepressible — pain — the expression of which cannot but make itself appreciated by every one who sees the patient. I have been impressed by the invariable occurrence of this call — this shout, as it were — for help. By what more effectual symptom could extreme urgency be expressed, what symptom more likely to demand instant relief?

As a matter of fact, pain is the initial symptom of all the lesions under consideration; but it is also characteristic of disturbances of function — of indigestion, intestinal catarrh, neuralgia, and the like. It is therefore imperative that pain, as a symptom, be closely scrutinized.

Though the character of the pain varies, there is but one attribute of importance — the quality of gravity. Are we, however, to interpret abdominal pain as a demand for immediate laparotomy? If not, what kind of pain does demand it? Where situated? Is it sharp or dull, continuous or intermittent, localized or wandering? Does it depend upon serious lesions? Is it accompanied by signs confirming disaster? Could we interpret the exact meaning of pain, there would be little need of this discussion; but pain in the abdomen is a very common symptom. Attacks of transitory colic, acute indigestion, cholera morbus, neuralgia, constipation, are so common, and in most cases so well understood by the patient, that he takes upon himself the responsibility of not calling a physician. The pain of serious lesions, on the other hand, almost always impresses its gravity upon the patient, so that its manifestations can almost be seen. Yet such pain, even if made conspicuous by cries and writhings, is not always indicative of serious trouble — as, for example, the great suffering caused by a sharp attack of cholera morbus, or acute indigestion, or of renal or hepatic colic. The pain of grave abdominal lesions usually has, however, a character of its own by which its gravity is at least suspected. It is followed, if not immediately accompanied, by signs that prove its seriousness. Moreover, they prove it within the limits of time that permit of successful operative cure.

Pain may be severe enough to cause, of itself, other symptoms apparently serious, as, for example, nausea and faintness — a combination very suggestive of hemorrhage. With subsidence of the pain, however, the color and the normal pulse rate return; the patient rallies, and is well long before a physician can respond. When dependent upon hemorrhage, pain is followed by a pallor and faintness that become more and more profound until the true cause is obvious.

Abdominal pain, *per se*, may produce a rigidity of the abdominal muscles that may for a time cause uncertainty, especially if there is vomiting. But this combination, if owing to an acute indigestion or a cholera morbus, rapidly subsides. The vomiting is followed by diarrhea; the pain is evidently paroxysmal intestinal colic. If caused by the passage of a renal or an hepatic stone, the rigidity may be marked, and it may persist for some time after the escape of the stone.

Pain which is of itself ominous produces upon the patient an effect of gravity, as shown by his face, which expresses suffering, anxiety and shock. Indeed, the well-known facies of peritonitis is but an advanced stage of the initial expression.

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[1] An oration before the Maine Medical Association, June 8, 1899.

Pain that means a sudden, serious abdominal lesion may have the quality of the pain produced by functional causes. It may be sudden, sharp, and paroxysmal, or dull and continuous. It may cause violent expressions of suffering; it may seem ominous to the last degree, but it is usually unimportant unless it is accompanied by the symptoms of shock.

The symptoms of shock may not be marked; they may even be masked, but sooner or later they manifest themselves, and add the first important evidence as to the gravity of the situation.

However sudden the onset of the disease may be, aid cannot reasonably be expected until the symptoms of shock are developed enough to be recognized. By shock, I mean those symptoms which result from sudden, violent invasion of the peritoneum by septic material or by blood, as well as from those severe structural lesions suddenly induced by changes in position of an organ, or by failure of its blood supply. To the former class belong extravasation from the alimentary canal, and extra-uterine pregnancies; to the latter, tumors with twisted pedicles, mesenteric embolism and thrombosis, intussusceptions, and the like. In both classes there is violence done the peritoneum; in the one case by a micro-organism or by blood, in the other by blood stasis. In the second class sepsis plays a part as soon as necrosis becomes complete. This violence to the peritoneum supplies, in addition to pain, those unmistakable signs which demand in the strongest terms immediate exploration. These symptoms are local and constitutional. Locally are produced tenderness and muscular rigidity; remotely, nausea, vomiting, and increased pulse. The temperature may be unaffected, or even depressed. It soon begins to rise, however, and in doubtful cases it may be watched for an hour or more until an unmistakable elevation adds the evidence necessary for decision.

The period of invasion of spreading peritonitis, of increasing hemostasis and gangrene, is practically the earliest stage that we can reasonably expect to see. To be at hand the moment after the occurrence cannot be expected except in the rarest instances. Fortunately we are generally in good season, if we are present at the period of invasion; but we must recognize the necessity for intervention. Yet emergencies which are promptly recognized, even when arising in hospitals, are not always successfully treated, for even there minutes must pass before intervention can be practised. Lest some may condemn themselves too seriously for delay, it may be of interest to refer to a few cases. In one case a young woman admitted to my wards at the Massachusetts General Hospital was said to have some uterine trouble. She had not been in the hospital long enough even to be examined when she was suddenly attacked with pain in the abdomen, became collapsed, and died. An extra-uterine pregnancy had suddenly ruptured, and death had resulted from hemorrhage and shock. She was beyond aid before the house surgeon could get to the ward.

Many such cases could be brought up, showing that even when aid is at hand in the earliest hours of the attack, and the necessity for intervention is clear, the result is not always favorable if, added to pain, there are the confirming symptoms of shock and sepsis. On the other hand, the results of early intervention in serious cases are often brilliant. A man with gunshot wound of the abdomen was recently brought to the hospital. The shooting occurred near by, and I happened to be at the hospital at the time. The indications of intestinal perforation were clear — pain, tenderness and rigidity were present. The wounds in the intestine were successfully repaired within an hour from the time they had been received. There can be no doubt that in this case success depended upon the early intervention, and that intervention was early because pain, with local and constitutional signs, pointed directly to its necessity.

As already stated, pain of itself is rarely a sufficient indication for surgical intervention, no matter what its character may be. Not that pain alone, occurring in the course of well-recognized diseases — typhoid fever, abscesses, tumors and the like — may not be a sufficient indication, for pain has an almost unmistakable significance under such circumstances, but he would be a rash surgeon who for pain pure and simple in a person apparently well would immediately open the abdomen.

The weight to be given to signs accompanying pain is extremely important. They are constant, but vary with the nature and severity of the lesion. It must be borne in mind that this consideration applies to symptoms rather than to lesions; that evidence sufficient to demand exploration may be insufficient for an exact diagnosis. While, therefore, symptoms may in a general way suggest a lesion, should we wait until they are clear enough to establish the diagnosis we should lose forever the favorable moment for intervention. Fortunately we have in the earliest stages those confirmatory signs already mentioned — nausea, vomiting, shock, tenderness and rigidity.

The depth of shock in the beginning indicates in a general way whether the lesion is hemorrhage or not. In hemorrhage it is great, and often out of proportion to the amount of blood lost. When due to slight hemorrhage, shock rapidly subsides, — the patient may even be rallying, — an event that justifies delay.

In shock from sepsis (and by shock I mean general constitutional depression, with elevation of pulse, pallor, cold extremities, perspiration, with or without lowered temperature) there is less pallor, less elevation of pulse and less depression of temperature; reaction is rapid. In the early hours the distinction between hemorrhage and the other lesions enumerated is usually possible.

Always excepting cases of hemorrhage, we shall find that the pulse has fallen, that the temperature is rising, and that local symptoms are becoming more and more pronounced. Of these, muscular rigidity and tenderness are the most important, if not the only signs. In hemorrhage blood enough may have escaped to cause dulness in the flanks; in intussusception the sausage-like tumor may be felt; in thrombosis resistant coils; in various lesions a sensitive mass; but even in these cases the muscular spasm generally will be so great as to mask everything beneath. Moreover, tenderness aids spasm in preventing palpation. Both together make deep examination without ether impossible.

The value of symptoms confirmatory of serious lesions, in which the pain and shock already described are noted, should each receive especial consideration, for they are often misleading.

The pulse from the onset to full development of a lesion varies extremely. In shock it usually increases in rapidity, whether the cause be hemorrhage or sepsis. Moreover, the increase in rapidity, like the general profundity of the shock, may be out of proportion to the severity of the lesion.

The interpretation of a rapid and feeble pulse is not always correctly made. For example, I once saw a case of severe abdominal pain, attended by general tenderness and a pulse of 160. The patient was thought to be neurotic and apprehensive, and, as no physical signs could be detected, no operation was performed, the consultant, a skilled gynecologist, making a diagnosis of renal colic. I saw the case with him, and failed to realize the gravity of the situation. A week or two later an experienced clinician made a diagnosis of appendicitis, from tenderness and tumor which had succeeded to the abdominal pain. I then found a symmetrical and tender tumor filling the lower abdomen, and made a diagnosis — which proved to be correct — of large ovarian tumor with twisted pedicle. The tumor was immediately removed and recovery followed.

When I see my own mistakes in such cases, — and what a serious mistake this one might have proved! — I cannot but feel impelled to emphasize them, not only as perhaps a consolation to others, but also as a plea for intervention in doubtful cases. Perhaps, however, it was fortunate that in this case operation was through a mistake deferred. Had we suspected the cause, we should have felt impelled to operate at a most critical time, when perhaps the result would have been less favorable. Delay when the patient is hovering between life and death is often quite as imperative as operation is at the beginning of the attack. Surgical intervention in the former instance will but too often turn the scale against the patient.

A pulse is not necessarily high when there is deep cardiac depression; for not infrequently the pulse is slow when the shock is extreme. The pulse is affected in quality rather than in rate. This was impressed upon me recently in the case of a woman who had been frightfully crushed in an elevator. It was impossible to determine the extent of her injuries, but a pulse of 60, even though hardly perceptible, seemed to disprove internal hemorrhage. It went later to 140. There was no internal hemorrhage, but the shock was so profound that she never rallied.

The pulse may be slightly or not at all affected in the most serious abdominal lesions. I have seen a normal pulse and temperature in a hopeless general infection. The symptoms were those of simple obstruction, and a general peritonitis seemed, in view of the normal pulse and temperature, out of the question. Operation to relieve obstruction showed a hopeless general peritonitis caused by an extravasation from the appendix. On the whole, however, the pulse is a better index of the severity of the lesion than the temperature.

The temperature may vary between extreme limits. It is often subnormal during the initial shock. A rise to normal, with falling pulse, would encourage delay for a more favorable opportunity for intervention. Fifteen-minute observations at the bedside often solve the question of intervention in those critical hours when intervention may add the last straw. A rise of temperature to normal, but not above, is characteristic of hemorrhage, especially if the pulse becomes stationary or falls. Improvement of this kind in hemorrhage indicates postponement of operation, because if hemorrhage is once checked the patient usually recovers from shock and can later undergo safely an operation, which during the shock itself might have proved fatal. The combination, however, of a temperature that does not respond to stimulants and artificial heat, with a pulse that still rises, calls for intervention in the strongest terms, for it means that the patient is bleeding to death.

Some years ago, in a paper upon abdominal hemorrhage, I took the ground that when the patient is on the verge of the grave, it is better not to operate, in the hope that she may rally. I now believe that such teaching is erroneous. When pulse and temperature indicate profound shock from hemorrhage, — when, for example, the pulse is flickering and the temperature subnormal, — when other signs confirm hemorrhage and when there is no sign of improvement, it is our duty to operate at once, after infusing salt solution under the skin, into the veins, and by rectum. Several such cases have recently occurred in my experience, with most brilliant results.

One patient, a young woman upon whom simple ovariotomy had been performed at 11 A. M., was doing well at 5 P. M. At 8 P. M. she was pale, restless, thirsty, with a pulse of 160, barely perceptible, and with temperature subnormal. There was clearly an internal hemorrhage. Salt solution was immediately injected into the veins by Dr. Jones, until I could count the pulse. When the abdomen was opened it was found filled with blood from a small spurting artery. The patient made an excellent recovery.

I will not give a detail of the deaths which I have seen from the hemorrhage of ruptured extra-uterine pregnancy, in which the pulse and temperature were so bad, and the case so hopeless, that the only chance seemed non-intervention. There have been two, and I now regret that I did not operate in every case. The argument in favor of non-intervention was based upon cases that rallied from an apparently hopeless collapse. Additional experience, and especially with the intravenous injections of salt solution, have convinced me that in hemorrhage, at least, the abdomen should be opened, even in the most desperate cases.

The value of temperature as an index of sepsis is great, but it is an index upon which too much reliance must not be placed. A rise in temperature usually means infection of some kind. The height of the temperature is no indication as to the extent and seriousness of the infection. I would rather see a temperature of 105° alone than rigidity or distention, for a small localized focus may give such a temperature without the least evidence, or, in fact, danger of general peritonitis.

Pain, with a temperature of 105° and nothing else, is a combination that often rapidly subsides; so even with tenderness and vomiting added. No intervention is permissible, unless other signs indicate it. The pain is probably a colic; the temperature an indication of intestinal absorption. Even with tenderness the indications are not clear. When tumor and rigidity are added, intervention is indicated, unless the symptoms are subsiding.

And, in fact, it should be said here that so unsuccessful are operations undertaken for many of the lesions here discussed — so serious are interventions of themselves — that, unless a lesion is clearly demonstrated, no operation should be performed when the symptoms are distinctly improving.

With reference to temperatures, little is known as to the connection between them and the causative micro-organisms; but after watching a good many charts one can give a good guess as to the probable germ. For example, the streptococcus gives a high temperature; the colon bacillus a low one; the tubercle bacillus an eccentric and widely varying temperature. So with the milder germs — the white and yellow cocci — the temperature is moderate, though I have seen a temperature of 105° for days in cases from which pure cultures of the staphylococcus albus were obtained. Other and rarer organisms cannot even be suspected from the temperature. I have found, for instance, a temperature of 106° and 107° in cholecystitis, caused by the typhoid bacillus, when no typhoid had been suspected in the patient or had existed in the community; a varying temperature, but not an alarming one, from the diplococcus capsulatus.

(To be continued.)

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FUNCTIONAL DISEASE OF THE HEART.[1]

BY HENRY JACKSON M.D., BOSTON,
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I WISH this evening to bring to the attention of the Society the consideration of some of the points in the diagnosis of functional disturbances of the heart. Such disturbances are often the source of much greater worry to the patient than organic disease. To the physician the problem always presents difficulties, and in many instances no positive diagnosis can be made. The important questions for us to consider are:

(1) What is functional disease of the heart?
(2) What are the signs and symptoms?
(3) How may the diagnosis be made?
(4) How frequent is such a disturbance of the heart?

To take up the first question, or "What is functional disease of the heart," we understand by functional disease of an organ or set of organs some disturbance of the normal physiological action of that organ whereby its action is impaired or rendered impossible. Further, we limit the use of the word functional to such disturbances as are dependent upon some cause as yet unknown, without definite pathological lesion, and, therefore, so far as we know, capable of complete restoration to health.

From a strictly pathological standpoint, we should limit the use of the term functional to disturbance of the action of the heart dependent upon faulty innervation, though clinically such a theory is scarcely tenable, as thereby it would probably be necessary to exclude the very large class of cardiac disturbances arising in anemia. I will speak later of this class of cases.

In making the differential diagnosis between organic and functional disease of the heart, it is of the utmost importance to remember that the term organic disease should not be so limited as to include only organic valvular disease; we should rather include in the class of organic disease the many and really more important cases with disease of the myocardium. The importance of this statement is realized when we consider that, from a clinical and therapeutic standpoint, chronic valvular heart disease becomes of importance to the individual only when and in so far as the muscle of the heart is affected; patients with valvular heart disease suffer when as the result of overwork the cavities become dilated and the muscle is weakened by the strain caused by overwork.

In the medical reports of the Boston City Hospital I published in 1894 a review of 92 cases seen in the Out-patient Department where the symptoms pointed essentially to the heart as the chief organ diseased; in 48 cases no valvular lesion was found as a factor in the production of the heart trouble, and these I classified as "parietal disease of the heart," using a term first employed by Dr. Gannett, considering that nomenclature more satisfactory than the more usual word "cardiac," in that it expressed the clinical picture without attempting to describe a pathological condition that could be accurately determined only by autopsy. In 39 cases there was evidently or apparently some valvular disease, and five I classified as functional.

That is to say, in 87 cases with organic disease of the heart 55 per cent. gave no clinical evidence of valvular disease; the truth of these data is fairly well substantiated by a subsequent examination that I made from the autopsy records of the hospital of 100 cases of diseased heart.

In the first series by clinical examination I made a diagnosis of valvular disease in 45 per cent. of the cases; in the second series I found by autopsy records that valvular disease was present in 40 per cent. of the cases.

Cases of anemia, with murmurs or other symptoms of functional disease, were of course not included in the five cases spoken of as functional in the first series of cases from the Out-patient Department.

In answer to the first question I should therefore say that functional disease of the heart included a class of cases in which patients complained of palpitation, rapid action of the heart or pain in the region of the heart, in which careful physical examination gave no fair reason to suspect the existence of organic disease. Exclude, if possible, organic heart disease; first and foremost in the exclusion of organic disease comes the determination that no enlargement exists. The size of the heart is to be determined by percussion; the force of the apex beat and the quality of the pulse determine whether an existing enlargement be dependent upon hypertrophy or upon dilatation. Unfortunately, physical examination cannot always exclude disease of the coronary arteries, a most important factor in the differential diagnosis between true and false angina pectoris.

I dwell especially upon the exclusion of organic disease in considering functional disease of the heart, as in looking over the literature of functional diseases I find long articles on the so-called "neuroses," including in this term "palpitation," "tachycardia," "bradycardia," and similar terms rarely used clinically, describing merely these signs or symptoms without regard to the etiology of the disturbances of action.

As it is certainly probable that many of the causes of functional disturbances of the heart may be found in the nervous system, in faulty innervation, I wish to review briefly the physiology of the heart. It has been demonstrated by physiological and anatomical experimentation that the muscular contraction of the heart may be induced independently of any nervous action, a wave of contraction being transmitted from

[1] Read before the Clinical Section of the Suffolk District Medical Society, April 19, 1899.

the auricles to the ventricles; in proof of this proposition the following experiments may be cited: (1) The fetal heart beats before the development of the nervous system; (2) the excised heart and even portions of the excised heart of reptiles beat independently of any possible nerve action.

To secure the proper blood supply to various organs with varying force according to the demands of the special occasion, the heart must beat with proper rhythm, and this regularity of the force and frequency of the heart is under direct control of the nervous system.

The heart receives nerve supply from three sources, the vagus, whose action is inhibitory, the sympathetic, which is an accelerator nerve, and the ganglia in the heart itself, whose action is not definitely determined.

As a striking instance of the action of the sympathetic we may cite the rapid, often painful, and sometimes tumultuous action of the heart resulting from sudden fright, alarm, or sudden awakening from a sound sleep, and requiring a man to use at once some powerful mental effort. Such symptoms are common to us all in everyday life.

Our very definition of functional disease, namely, some disturbance of action independent of pathological lesion, shows that in the specific case we cannot absolutely determine the cause of the symptoms, but it is highly probable that in most instances there is some transitory disturbance of the innervation of the heart. As many diseases of the nervous system which were formerly considered to be functional have in recent years been shown to be the direct result of some pathological lesion, so time may teach us to understand the various phases of disturbed action of the heart, and for some at least to discover a pathological lesion.

(2) What are the signs and symptoms?

As a general rule, it may be said that a patient who complains of palpitation, of pain in the heart, and of rapid action of the heart has functional rather than organic heart disease.

In Sansom's work on the heart under the head of "Schema," practically a *résumé* of all signs and symptoms connected with the heart, are to be found the following very comforting axioms:

"Symptoms referable to the heart:

"(*a*) Pain felt by the patient in the region of the heart is rarely an index of structural disease of the organ. Organic disease may progress without any manifestation of pain. Precordial pain is often due to affections of the stomach or of the neighboring nerves. The special pain of heart origin is angina pectoris, characterized by paroxysmal recurrence, extreme distress and sense of impending death, with coldness and arrest of respiration. Pain may occur in pericarditis and in inflammatory affections of the aorta.

"(*b*) Palpitation, though a frequent symptom in heart disease, is still more common in dyspepsia and in emotional conditions.

"(*c*) Intermission and irregularity of the action of the heart felt by the patient are indications of nervous disturbance rather than organic disease."

In health we are unaware of the action of the heart and the very fact that a patient complains of the heart's action in itself shows the presence of some disturbance. The symptoms of functional disease are palpitation, pain about the heart, rapidity of action, irregularity and occasional stopping of the heart.

The signs of functional heart disease, using the word in the technical sense of symptoms that may be observed by the physician, are rapidity of the rate of the heart, irregularity in action and not rarely intermittency, the occasional dropping of a beat recognized by the patient often with as great accuracy as it is by the physician. To these symptoms may be added flushing, often followed by coldness of the extremities, with perspiration.

Pain in the region of the heart is an important and very frequent symptom; the pain is referred either to the precordia or often to the anterior part of the chest just to the left of the region of the heart. The pain may be continuous, moderate in degree, or paroxysmal, and at times of great severity, suggesting the train of symptoms associated with angina pectoris. Sensations of distress or a suggestion that some obstacle interferes with the proper beating of the heart are often more annoying and alarming to the patient than actual pain.

In distinction from the symptoms arising in organic disease of the heart, patients suffer from functional disturbance of the heart more when they are quiet, perhaps in resting after a meal, and especially at night, when their attention is more strongly drawn towards the heart. Usually the symptoms are not aggravated by moderate exercise or exertion. The heart is not incompetent, but the nerves regulating the heart are deranged.

In certain rare cases the heart beats are reduced in number, a condition found far less often than increase in the number of the beats. Austin Flint has written at length in this form of functional disturbance, at the same time warning the practitioner that it is most essential in such cases to eliminate as a causative factor all sources of direct stimulation of the vagus from cerebral pressure. So far as I can remember, I have seen but one case of slow heart in functional disturbance. An old lady complained of distress in the region of the heart with some pain and at times a sensation as if the heart were beating in the throat; her pulse and apex beat coincided, the rate being at all times about 50 to the minute. The pulse was of good strength, the heart was not enlarged, and there was no edema or disturbance of the kidney suggestive of failure in the heart's action. She was under my care for several years, and I never found her pulse to be 60 unless she took digitalis, when her symptoms were aggravated. She died suddenly as the result of a fall, and up to the time of her death had no symptoms suggestive of cerebral disease. During the time that I saw her, her constant complaint was of heart disease and a dread that she might die suddenly from some cardiac disease that she believed existed.

In this connection I would say that I believe a slow pulse is very rare as an index of weakness of the muscles of the heart. At present I have under my care a man with valvular disease and considerable dilatation of the heart who has a pulse of 50 or less beats in the minute independently of any medication. He is perfectly comfortable and has not a symptom referable to the heart so far as his sensations go.

(3) How may the diagnosis be made?

This question may be answered by what has already been said: symptoms are complained of referable to the heart, yet a careful physical examination fails to reveal any organic disease of the valves or muscular system of the heart.

(4) How frequent is such a disturbance of the heart?

Functional disturbance of the heart is certainly far more frequent than organic disease. To this statement I think we can all agree if we stop to consider how seldom we find any evidence of organic disease in the heart, compared with the number of patients who consult us for some symptoms referable to the heart either in their minds or in ours and who yet show no evidence of any organic defect. I wish to refer briefly to various classes of cases which present such symptoms, giving in each instance the treatment that I would suggest. In children just reaching puberty it is not unusual to find an occasional intermittency of the heart; in taking the pulse we note that occasionally a beat is dropped. I have seen this in boys who were to all appearance perfectly well, who showed no symptoms of any failure of the heart, and who certainly were unaware of the symptom. Such cases should be watched in case further symptoms should develop, but in my experience this has been a transitory symptom, passing off in a few years without giving rise to any disturbance. Rapidity of the heart in children I consider as much more important; I have frequently seen a pulse of 100 in young boys who had grown fast, had played hard, and perhaps had given too little time to outdoor recreation. Such children should give up confining school work, should live out of doors as much as possible, and avoid the rougher and more exacting forms of sports. These boys are helped by enforcing regular hours for meals, and what is perhaps more important, regular hours for quiet rest without interfering with the greatest possible amount of outdoor life. I have this winter seen the son of a physician; his father said that he complained of being tired after riding his bicycle and sometimes was short of breath. I found his pulse was always over 100 when I saw him, and his father reported that except in the early morning he also found the pulse the same. The boy had grown very fast, lived in the suburbs, and went to school in Boston, so that he got home too late for dinner, and played hard all the afternoon, having only a light lunch between breakfast and a late dinner. He left school for several months, studied somewhat at home, was out of doors as much as possible, and as a result improved fast, and in February returned to school, but with the reservation that he must get home at half-past one for a suitable noon dinner. In similar cases, where the rapid action of the heart has been associated with painful sensations or with palpitation, I have found that small doses of bromide, ten grains three times a day, either alone or combined with iron, was of advantage in curing the disturbance. Perhaps in dyspepsia, usually associated with and often caused by constipation, we find the largest number of cases of palpitation and allied functional disturbances of the heart. Such cases form a very large number of the young girls and women who apply for relief in the out-patient departments of hospitals. Here attention to the underlying cause usually cures the trouble; in such cases I think a small amount of bromide is essentially useful as an aid to the proper administration of a cathartic. "Pain in the heart," "palpitation," or "pain in the side," usually meaning a place between the heart and the anterior axillary line, are very common symptoms to us, and to the patient most distressing and often alarming. In chlorosis we have a frequent cause of palpitation and rapid action of the heart; these cases differ from other forms of functional disturbance in that there is shortness of breath on exertion. Practically these cases may be classed under the head of functional disturbance of the heart in that they present a condition essentially amenable to treatment, with absolute return to a state of perfect health. Recent observation has shown that in a certain proportion of cases there is some fatty degeneration of the muscle of the heart, a condition similar to, though less marked than, the fatty degeneration of the heart in severe anemia. In these cases vigorous treatment with iron, sometimes with the addition of arsenic, brings the greatest relief to symptoms and an absolute cure. Where the heart is very rapid, and especially if it is irregular, small doses of digitalis or strophanthus are of direct benefit. The last-mentioned heart stimulants probably are of service only when the muscle of the heart is sufficiently affected by the fatty degeneration as to give rise to a certain weakness of its contractile power.

In the use, or rather, let us hope, in the abuse, of various cardiac stimulants we find a frequent source of disturbance of the action of the heart — coffee, tea and tobacco. Tea and coffee or similar articles are used the world over; used, I believe, because they are stimulants. Some persons are so susceptible to their action that they cannot use these articles even in moderation. One of our prominent surgeons, an athlete of good physique, told me that he found that a single cup of coffee caused an occasional intermittency of his pulse and a sense of oppression in the chest. Many more are injured by tea and coffee because they are taken to excess, and furnishing a powerful stimulus they are made to take the place of food; in such cases the trouble arises from insufficient food plus the injurious effect of stimulation. In many individuals moderation is impossible, and when we find trouble has arisen from an excessive use of these stimulants our only alternative is to prohibit entirely tea and coffee. Dr. Minot used to say, "Tobacco, the greatest blessing given by God to man, is refused to women. Why deprive them of tea?" I have heard the Vienna physicians say they could not live if it were not for the various troubles arising from their patients' visits to curative bathing resorts, and I suppose we might venture the same assertion as to the pernicious and ever increasing "five o'clock tea." Tobacco undoubtedly is a frequent cause of disturbance of the heart, cigarette smoking especially, because it implies in many almost constant smoking.

Certain drugs in common use may in some individuals cause interference with the action of the heart. I have observed this with phenacetin and sulfonal; phenacetin I consider to be a depressant, and I hesitate to use it in persons suffering from organic disease of the heart. Sulfonal I have often used in cases with much weakness of the heart without any apparent ill effects, yet I know a perfectly healthy woman who has on several occasions complained of a sense of oppression in the chest after a small dose of sulfonal. She once said to me that she felt as if her heart "turned over and went glob-glob." I felt her pulse and found that it intermitted every few beats. This winter I saw a gentleman who was perfectly healthy; on this occasion for the first time I found his pulse markedly intermittent and at times irregular. He had taken several doses of a proprietary headache remedy containing probably from its name a mixture of phenacetin and caffeine; the trouble was temporary.

No disease causes us such anxiety as the so-called false angina pectoris; the attacks are often terrific, accompanied by great pain, anxiety, sense of suffocation, and the fear of impending death. In false angina all the symptoms may be as severe as in true angina, dependent upon organic disease of the heart or the coronary arteries; the pulse may be rapid and the extremities cold in false as in true. Our main reliance in making the differential diagnosis must be on the frequency of the attacks in false angina, their recurrence over a long series of years, the long duration of the individual attacks, and the lack of any evidence of disturbance of the heart in the intervals between the attacks. The great difficulty in diagnosis lies in the fact that arterio-sclerosis of the coronary arteries may be present without giving rise to physical signs by which the diagnosis may be made. I once saw, in consultation, a lady with intense excruciating precordial pain, who had previously been well except for occasional attacks of what she called pain in the chest from dyspepsia. In this case a very weak, irregular and intermittent pulse ruled out false angina; three days later post-mortem examination showed arterio-sclerosis of the coronary arteries, necrosis of the heart muscle and two ruptures in the left ventricle. I had made a diagnosis of probable thrombosis of the coronary arteries; the rupture was not diagnosed, though it was probable from the post-mortem appearance that at least one of the tears occurred at the time of the first attack of precordial pain.

Another lady under my care has for twenty years had occasional attacks of severe pain in the region of the heart, the pain passing down into the left arm; her pulse is good, there are no murmurs, no enlargement and no albumin in the urine. My prognosis in this case is favorable, though necessarily guarded, as her superficial arteries are somewhat sclerotic and she is subject to attacks of true monarticular gout.

Attacks of angina may be alleviated by nitrite of amyl, nitroglycerin, Hoffman's anodyne, ice-bag to the heart; morphine may be necessary, though usually a few whiffs of ether are more efficient and less harmful. A Western lady that I once saw had frequently taken chloroform with much relief and no untoward symptoms, though I must confess that I should not have cared to administer it.

It seems to me highly probable that time will show us some pathological cause for the so-called false angina, as already the discovery of the connection of this trouble with disease of the coronary arteries has removed a considerable number of cases from the domain of functional diseases.

Graves's disease, exophthalmic goitre, furnishes us with a beautiful example of rapid action of the heart directly dependent upon some disturbance in the functional activity of the sympathetic nerve. Rapidity of the heart and palpitation are the two most prominent symptoms so far as the patient goes. Digitalis is well-nigh useless in this disease, belladonna, bromides and the phosphate of sodium being probably the three drugs that afford the most relief.

In this brief summary of the subject in hand I have tried to point out the important elements in the diagnosis of functional diseases of the heart and to mention some of the most common causes of such a disturbance.

THE RESPONSIBILITY OF THE ATTENDING PHYSICIAN WHEN A WILL IS MADE.[1]

BY ARTHUR C. JELLY, M.D., BOSTON.

The responsibility of the attending physician when a sick person transfers property was forced upon me about a year ago in a case where death was due to heart disease, and again recently where alcohol was the probable cause of death.

In the first instance there came, with failing compensation, periods of great mental confusion when the man failed to recognize the familiar surroundings of his home, and believed that his wife and children had taken him to a lonely farmhouse, intending to abandon him there. This condition varied in duration, and alternated irregularly with periods when he was perfectly clear. During this time a sister came to help the wife take care of him. He looked to her for protection when the confused state of mind came on, and he often exacted the promise that she would stay with him till death and would see that he was properly buried.

After his death, his wife learned that he had given the sister an order for all the money he had in the bank, and that she had drawn it out. The wife, whose devotion had been unflagging, felt that this act was done at a time when he was confused and therefore not responsible; accordingly she demanded the money. But the sister was sure that he was mentally clear, and that he intended simply to show his appreciation of her care. At this point I was asked whether in case of a suit to recover the money I could testify positively about him. But as I had not made any visit on that day, I had no record of his mental condition at the time of the gift, and I was therefore unable to be of service to them. So many questions were asked in the discussion of the matter that I felt the need of more knowledge in regard to the position of the physician in attendance upon such cases. Accordingly, I consulted text-books upon wills written by lawyers (from which I shall quote freely without giving references) as well as the more familiar writings of doctors upon testamentary capacity.

Wills are contested on one or more of the following points: (1) He did not understand that the paper he signed was a will; (2) he was not of sound mind; (3) he was the victim of fraud and undue influence.

To protect all parties, and to ensure the just and proper distribution of the estate, the statutes make certain steps necessary. The Massachusetts statute reads as follows:

"Every person of full age and sound mind may, by his last will, in writing signed by him or by some person in his presence and by his express direction, and attested and subscribed in his presence by three or more competent witnesses, dispose of his estate real and personal, etc."

An attestation clause is desirable but not essential. The following is an example of such a clause:

"Signed, sealed, published and declared by the said A. B. as and for his last will and testament, in the presence of us who at his request and in his presence and in the presence of each other have subscribed our names as witnesses hereto."

If due care is given to these precautions, it is clear that the will cannot be contested on the ground that the man did not know it was his will.

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[1] Read before the Clinical Section of the Suffolk District Medical Society, April 19, 1899.

Where fraud and undue influence are charged, the question is, had he sufficient intelligence to detect the fraud or strength of will to resist the influences brought to bear upon him. Undue influence is defined as "that which compels a man to do what is against his own desires through fear or a desire to be let alone, or some feeling which he cannot exactly describe but which he cannot resist." Fraud and undue influence necessarily imply an enfeebled mind, and usually it is claimed that the mind was unsound to such a degree that the man was not capable of making a will.

What capacity, then, is required for making a will? The standard is naturally very different from that in criminal cases, where tests of responsibility are applied, and where a very great departure from sanity is required to excuse from punishment for crime. Whether a man is able to make contracts or to transact ordinary business is a proper subject for investigation, because if he can do these things properly it may be safely inferred that he has sufficient capacity to make a will. On the other hand, inability to manage property or to maintain former business habits does not necessarily establish lack of capacity to make a will, because his property and his relations are familiar subjects, and may have been under consideration many times with reference to this act. Moreover, persons under guardianship and inmates of asylums have made wills that have been admitted to probate. Body and mind may both be so weak that action seems almost impossible, till by a tremendous effort the forces are rallied and a sound will is made. Eccentricity is not necessarily insanity, though eccentricity taken with other symptoms and signs may show such a change of character as to prove insanity.

The will itself should be thoroughly examined; unjust and foolish wills are viewed with suspicion, but a wise and just will may bear evidence to a sound condition of mind.

At the outset the presumption is that the testator was sane; therefore proof of insanity must be introduced by the contestant to invalidate the will. On the other hand, if insanity was known to have existed previous to the will, the burden of proof shifts to the executor to show that the disease has ceased or did not affect the disposition of the property.

Proof of the effect of alcohol, of fraud and undue influence must be established by those who contest the will.

In general, it has been held that to make a sound will a person should be able without prompting to recall the kind and extent of the property to be willed, the persons to whom he would naturally give it, and he must recognize clearly the nature of the claim of any one whom he excludes.

Of all the forms of mental weakness which are likely to lead to questions of capacity, senile dementia is "the most important and the most difficult." As Schouler has indicated, the infirmity is often more apparent than real. Persons who pay little heed to their surroundings, who forget names and dates and recent events, who fall into slovenly habits and acquire bad manners, may yet be found perfectly clear as to their property and as to the disposition they wish to make of it.

States of mind following apoplexy have given rise to difficulties in court. Great caution should be exercised, especially where aphasia and paralysis of the right hand exist, to determine beyond any possible doubt what are the wishes of the testator.

In these two groups the testimony of a familiar attendant is of greater value than that of an ordinary person, and that of the attending physician may be more valuable than either, because he is a trained observer and may be supposed to be unprejudiced.

In the older books the term "monomania," or partial insanity, appears frequently, and much space is devoted to the discussion of the relation of delusion to mental capacity. Delusion has been defined as "a diseased state of mind in which persons believe things to exist which exist only, or to the degree they are conceived of only, in their own imaginations, with the persuasion so fixed and firm that neither evidence nor argument can convince them to the contrary." The presence of a delusion proves that the mind is affected in one of its most important faculties — its power of reasoning. The delusion may cause a disturbance of the feelings and an alteration of the affections; or the feelings may be altered as a part of the disease of the mind, without being directly connected with the delusion.

It will thus be seen that difficult questions arise in cases where delusion exists. In general, the view prevails that the question to be settled is whether the delusion determined the disposition of the property. The burden of proof is on the executor to show that the disease did not influence the will.

Alcoholism has been the basis of numerous contests. Of course, a man could not be supposed to make a will during an attack of delirium tremens. Long-continued, excessive drinking leads to a weak condition of mind in which fraud and undue influence may easily be effectively used. But the burden of proof is on the contestant to show that intoxication was present at the time to such a degree as to vitiate the disposition. This is not a question for experts, but depends upon the observation of ordinary witnesses. Where, as the consequence of alcohol, there is habitual and fixed derangement of the reason, proof of a lucid interval would generally be needful.

Considerable stress has been laid in these cases upon the character of the will. The term "lucid interval" has been defined as "an interval in which the mind having thrown off its disease has recovered its general habit." It is more than a remission. "It is favorable to the supposition of a lucid interval if the will appears a rational act done calmly without persuasion or influence."

The Cartwright case is famous. A woman had been insane in early life and recovered. Later she was subject to paroxysms of excitement, when she was so violent and destructive that at times she was restrained by camisole or other mechanical devices. Once when excited and in restraint she demanded writing materials, and wrote calmly and carefully, in a room alone, a very just will, which was sustained. On the other hand, if a person supposed to be insane makes a will which appears to be unnatural, it will be presumed to be the offspring of his disease.

The question of a lucid interval comes up very naturally in cases of epilepsy, where a great variety of mental states occurs between convulsions. And this is a question that may confront the doctor in cases of febrile disease, or profound toxic conditions, or accidents where delirium or unconsciousness has been present. To establish the lucid interval one must prove that the mind has been restored. Note carefully, therefore, the disappearance of excitement or confusion or evidence of delusion, and the return of natural feelings and ideas. Having these data you are fortified if called into court.

Though wills are usually made at a time when death seems remote, it frequently happens, as a result of sudden illness or accident, that a will is not made till death seems at hand. At such a time the presence of the doctor and the confidence reposed in him lead naturally to the request that he sign as one of the subscribing witnesses. And often the doctor signs without hesitation, just as he would witness a man's signature to any document. I was surprised to learn that courts have ruled that a doctor signing a will as a subscribing witness virtually registers his professional opinion that the man was of sound mind, and that judges have held that greater weight should be attached to the opinion of the attending physician than to the opinion of experts called into the case in court, because " his opinion is founded upon personal observation of facts and circumstances which carry their own inference." The statement by the doctor that he did not investigate the mental condition places him in an embarrassing position if mental incapacity is shown by evidence of others. And if he signed when aware that the patient was not in possession of his faculties, a learned judge has said " it is very much as if he had subscribed to a will that he knew was a forgery."

If asked to sanction the execution of a will, or to sign as a witness to it, the doctor may therefore properly decline, if he has any doubt about the patient's capacity, unless opportunity is afforded for a satisfactory examination of the patient and of the will itself. If such examination is refused, it is clear from the views just quoted that he would better be out of the case when the will is presented for probate. If his refusal seems likely to be misunderstood, the doctor should explain the delicacy of his position, on account of the weight attached to his testimony by the judges. Moreover, it seems probable that the testator would assent to an examination, if the idea were suggested to him that only in this way could he secure the firm support of the doctor's testimony, and thus strengthen very much the probability of having the will sustained in case of any contest.

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A STUDY OF FOURTEEN HIP ABSCESSES.[1]

BY FRANK E. PECKHAM, M.D., PROVIDENCE, R. I.

I wish to report a number of hip abscesses, which shall conform to a certain type as nearly as possible, so that a description of one may suffice for all.

These abscesses usually form about the outer or anterior surface of the thigh, resulting directly from the tubercular process. Upon being opened it may be possible in a small number to go directly to necrosed bone, either about the neck of the femur or at some contiguous point upon the acetabulum. In another class the pus sac is circumscribed and no denuded bone is found, although the mouth of a very small sinus may or may not be discovered. It is this latter class of abscesses with which the paper deals. The treatment in each case has been much the same, that is, opening by an incision the full length of the abscess cavity, thoroughly curetting, closing without drainage, the application of a (not too bulky) surgical dressing and a compression bandage. The patient has been kept in bed on a Bradford frame with extension until absolutely certain that healing was solid and the abscess cavity obliterated or until it was demonstrated that such a result was impossible.

Case I. J. O'B., a boy of four years of age. A right hip disease had existed for one year when an abscess developed on outer surface of thigh. This was opened during the winter of 1891–1892, curetted and closed. At the end of two weeks there was primary union, with complete obliteration of cavity and patient was gotten up on splint. The splint was omitted against advice about the middle of the third year of the disease and some flexion resulted. Everything went all right until about the middle of the fourth year, when another abscess developed, which the mother refused to have operated. This opened spontaneously and there still exists a discharging sinus. There is complete anchylosis of joint and 25° or 30° permanent flexion.

Case II. W. W., a boy of seven years of age. A right hip disease had existed for several years and an abscess had been opened before coming under my care. April 28, 1897, there was a circumscribed abscess of several weeks' duration and the disease had continued for about five years. The abscess was, on above date, curetted, closed without drainage, and a compression bandage applied. The patient was in bed six weeks, when, everything being firm and solid, he was gotten up on a splint and high sole and sent home into the country (July 2, 1897).

In the early spring of 1898, being in apparently perfect condition, and weight having been allowed on the foot for four or five months, the splint was entirely omitted, it being about the sixth year of the disease.

A few months later, in the summer of 1898, the patient returned to the hospital with an abscess which opened spontaneously and exploration revealed extensive disease in femur and acetabulum. This was thoroughly curetted and boy is now home again wearing the usual apparatus. There is a discharging sinus, but patient is in excellent condition.

Case III. A. R. C., a girl of seven years of age. Duration of left hip disease about two years, and an abscess had been present for several weeks. Operation December 20, 1894. This was the most extensive abscess of the series as regards the area involved, and the incision extended from the crest of the ilium nearly to the knee-joint. This enormous area was thoroughly curetted and it was possible here to feel the mouth of a very small sinus, which was supposed to communicate with the focus of disease. The usual course was pursued, of complete closure without drainage, a moderate surgical dressing with compression bandage. This bandage was readjusted from time to time to keep up the compression, but the dressing was not disturbed for two weeks, when the stitches were removed, and the very next day the patient was up with splint applied. There never has been any return of the abscess. The treatment was discontinued one year later and the patient to-day is in perfect health, with about one and three-quarters inches shortening.

Case IV. E. H., a boy of five years of age, came under observation in 1895. He had double hip disease, and in October, 1895, an abscess developed about the right hip. This was opened October 30th and an abscess on the left hip was opened December 4, 1895. These both united, with obliteration of abscess cavities.

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[1] Read before the Providence Clinical Club, May 24, 1899.

October 26, 1896, about eleven months after last operation, a small sinus began to discharge from the right hip. This continued for three or four months, then closed, and has remained closed ever since.

June 1, 1897, about one and one-half years after operation, a small sinus appeared on left hip, and remained open about three or four months, when it closed permanently. There is at present complete anchylosis of both hips and permanent flexion of about 40°. Physical condition excellent.

I would say that the treatment of this case was unsatisfactory, as a portion of the time he was under the care of an irregular practitioner who treated by the "laying on of hands" over the hips outside of the trousers. This may account for the opening of the sinuses.

Case V. J. R., a boy of three years. An abscess developed in this case in the second year of a right hip disease. This was opened and curetted on November 10, 1895. The cavity was a large one, nearly encircling the femur. It was closed as usual, but a small sinus at the lower angle of the wound discharged for about a week, when it closed permanently. This must have been entirely superficial to have subsided in so short a time. This boy was under no control at home, but did fairly well on his splint until December, 1898, just three years later, when another abscess developed. This was opened but the wound became infected in some way and drainage became imperative.

		Male.	Female.	Hip.		Duration of hip disease at time of abscess.	Time in bed.	Second abscess.	Sinus developed.	Duration of sinus.	Non-closure with immediate sinus.	Dead.
				Right.	Left.							
1	J. O'B.	1		1		1 yr.	2 wks.	3½ yrs. later.				
2	W. W.	1		1		5 yrs.	6 wks.	1 yr. later.				
3	A. R. C.		1		1	2 yrs.	2 wks.	None.				
4	E. H.	1		1		mos. ?	?	None.	11 mos. later.	3-4 mos.		
5	E. H.	1			1	mos. ?	?	None.	1½ yrs. later.	3-4 mos.		
6	J. R.	1		1		2 yrs.	?	3 yrs. later.				
7	E. P.		1		1	6 mos.	?	None.				5 mos. after operation.
8	L. M.		1		1	1 yr.	3 mos.	None.				
9	A. M.		1	1		6 mos.	?				Sinus remained open for 1 yr.	
10	A. L.	1			1	2 yrs., 7 mos.	4 mos.	None.				
11	W. C.	1			1	2 yrs.	?	1 yr. later.	1 mo.	6 mos.		
12	L. P.		1	1		4 mos.	?				Still remains open.	
13	J. McM.	1			1	2 yrs.	1 mo.	None.				
14	T. G.	1		1		2 yrs., 3 mos.	1 mo.	None.				

Case VI. E. P., a girl of eight years of age. In 1897 this patient was convalescing from a right hip disease, when the left hip became involved, and in December, after the disease had been present about six months, an abscess developed. This was operated December 22, 1897. Healing with complete obliteration of the cavity was obtained, and patient was discharged February 14, 1898. About five months after operation patient died with tubercular meningitis. I saw the girl the day before death. The hip was in good condition, and there was no refilling of the abscess.

Case VII. L. M., a girl of four years of age. Duration of left hip disease about one year, when abscess developed.

Operation, February 23, 1898. About three ounces of pus evacuated. Wound closed as usual, with compression bandage applied. Patient was in bed a little over three months on account of some irritation about the wound, but at that time (June 1, 1898) everything was solid, there was no refilling, and there has been none since. Patient still under treatment.

Case VIII. A. M., a girl of four years of age. Duration of a right hip disease six months. Abscess operated March 9, 1898, and four ounces of pus evacuated. Here a slight sinus remained until February 16, 1899 (nearly one year), when it finally closed permanently. Patient still under treatment.

Case IX. A. L., a boy of eight years of age. A left hip disease of two years, seven months' duration. Abscess operated on April 1, 1893. There were two sacs, and two incisions were necessary to thoroughly reach both of them, one on the outer aspect of the thigh and the other on the anterior surface. Several ounces of pus were evacuated, the wound closed without drainage, and a compression bandage applied. There was a small stitch abscess after the operation, which was curetted, and the patient left the hospital August 8, 1898, in excellent condition. Patient still under treatment and no refilling of abscess.

Case X. W. C., a boy of ten years of age. Duration of left hip disease at time of operation two years. Abscess operated latter part of March, 1897, with immediate healing, but the mother took child home "against advice," and splint and incessant activity irritated the hip and caused a sinus to open one month later. This discharged a small amount for six months, when it remained closed. November, 1897, six months later, another abscess developed and opened spontaneously and is still discharging. Patient in good physical condition.

Case XI. L. P., a girl of four years of age. Duration of right hip disease four months. Abscess operated October 1, 1898. The usual operation, without drainage. This did not heal and child has emaciated and developed tuberculosis in both ankles and is having a serious time of it. Still under treatment on a Bradford frame with extension.

Case XII. J. McM., a boy of seven or eight years, with a left hip disease of two years' duration. This abscess had been slowly filling for two months or more and the mother refused operation until an enormous tumor (size of a child's head), had formed on the anterior surface of the thigh. The skin did not redden and there was no tendency towards a spontaneous opening, notwithstanding the great amount of distention. This was opened May 24, 1898, and an elliptical piece of skin was removed entire so that when it collapsed the edges of the wound would just come in apposition. More than a quart of pus was evacuated. This boy remained in bed just one month, when he was gotten up on a hip splint and there never has been any return of the abscess, now over a year after operation.

Case XIII. T. G., a boy of six years of age. Duration of right hip disease two years and three months. An abscess had been slowly developing for eight or nine weeks. The usual operation was done February 23, 1899. Patient was in bed one month, at the expiration of which he was discharged with the abscess cavity completely obliterated. This case was seen May 20th, when it was in excellent condition, with no sign of refilling.

In order to obtain the results here reported it has been necessary to attend to certain details which will be particularly mentioned. In the first place, we are told that a certain number of abscesses would be absorbed if let alone. With the exception of two or three, all of these abscesses were let alone, with the absorption idea in mind, but they all progressed steadily and the skin began to show signs of spontaneous rupture before operation was decided upon. The one notable exception (Case XII) has already been mentioned.

Sufficient time must have elapsed for the formation of pus to have ceased. If an abscess is closed after operation and pus continues to form, it must collect somewhere and the inevitable result will be a refilling of the cavity, or the formation of a sinus through which it may be discharged; therefore it would seem to have been established clinically in the majority of these cases that the period of pus formation is limited, and if the abscess is not opened until after this period the chances are all in favor of complete and permanent obliteration of the cavity.

In opening an abscess the incision has always been nearly if not quite as long as the cavity, in order that every portion might be thoroughly cleaned, and in one case (Case IX) a double incision was necessary to expose completely the two sacs.

After closing the operation wound and adjusting a surgical dressing, a compression spica bandage is placed over all. This compression is necessary to keep the walls of the abscess in perfect apposition. The bandage must be tightly applied and the leg elevated, for in every case the return circulation is somewhat interfered with. Some of the children have complained of pain and discomfort the first day on account of the tightness, but the bandage has never been loosened and a mild opiate has been given a number of times rather than interfere. The bandage loosens very quickly and has to be readjusted every few days in order to keep up the compression a sufficient length of time.

From the third to the fifth day there may be a slight elevation of temperature, in which case the dressing is removed and a small probe inserted at the lower angle of the wound, when a considerable quantity of bloody serum will escape, in some cases as much as a half ounce. The dressing and compression bandage is then reapplied. This is extremely important, as this serum might very well change to pus, or even if not, it would separate the abscess walls, thus preventing complete obliteration and in all probability resulting in a sinus. This is of so much importance that even if there is no temperature the wound is examined with the probe in three or four days anyway.

The child is kept in bed until all irritation which may be present from the stitches or from any cause has subsided, no matter how long it may take, as in Case VII over three months were necessary to accomplish it.

Summary. — There were 14 abscesses in all. Of these, two refused to close at all, and one opened one month after operation, making three open after operation.

Of the 11 cases remaining, the boy with double hip abscesses had a sinus develop in right hip eleven months after operation and in the left hip one and one-half years after operation, each open only three or four months, remaining perfectly solid ever since.

In the remaining nine cases, one had another abscess three and one-half years later, one three years later, and one one year later. One case died five months after operation.

Clinical Department.

EXAMINATION OF DIGESTIVE CASES.[1]

BY M. P. SMITHWICK, M.D., BOSTON.

In digestive cases accurate diagnosis based on symptoms is, as a rule, impossible. A careful examination of the stomach contents in these cases will convince anybody of the truth of this statement.

Case I. December 11, 1898, a servant girl, twenty-two years of age, entered the Boston City Hospital in the service of Dr. Francis H. Williams.

Past history. — Six years ago pains in epigastrium with vomiting; no blood. Fainted. Menstruation always regular, and usually lasts three days.

Present illness. — During past week considerable pain in epigastrium and across upper abdominal region, increased by food and by pressure. Has vomited once or twice daily about one or two hours after eating. Three days ago vomited immediately after eating, had pain in epigastrium and fainted. Two days ago commenced to menstruate but stopped abruptly after a few hours. In the afternoon vomited blood and fainted. The attending physician told patient that there was a quart of blood. Two chills after recovering consciousness. For three weeks cough without expectoration. No dejection for three days and no blood noticed previously. For two days headache, vertigo, tinnitus aurium, blurred vision, weakness and sleeplessness; temperature 100.2°; pulse 120; respiration 22. Physical examination negative except for anemia. On day of entrance a liquid black dejection considered to be blood.

December 13th. Erythrocytes, 2,000,000; leucocytes, 4,400; hemoglobin, 20 per cent.

December 15th. Vomited blood.

December 17th. Vomited large amount of dark clotted blood twice.

January 4th. Still complains of slight abdominal pain.

January 28th. Chair and blankets.

January 17th. Reds, 4,128,000; whites, 4,400; hemoglobin, 45 per cent.

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[1] An abstract of this paper was read before the Clinical Section of the Suffolk District Medical Society, April 19, 1899.

February 1st. Reds, 4,320,000.

February 6th. An analysis of stomach contents an hour after an Ewald test meal showed: Amount, 70 c. c.; free HCl, 0.2044 per cent.; total acidity, 0.3066 per cent.; sediment, no blood nor blood pigment; 25 c. c. of filtered gastric juice digested 0.052 gramme of coagulated egg albumin in less than three hours, at 37.5° C.

February 12th. X-ray examination of chest showed nothing abnormal.

February 16th. Discharged well.

Two months after this examination, she complains that for two weeks there has been sharp pain in her epigastrium after eating, the pain going through to the back. She is constipated. She fears a repetition of the last attack.

This is a digestive case in which past history would seem to count and in which one might be tempted to make a snap diagnosis of gastric ulcer.

An examination showed: Amount contents, 75 c. c.; color not suggestive of blood; microscopic examination, no blood; free HCl, 0.0913 per cent.; total acidity, 0.2373 per cent.; digestion, four and one-half hours plus.

Exclusively milk diet. One week later patient had no distress after eating, and without instruction had increased her diet. An analysis showed little change from the last, except a moderate increase in the free acid and a reduction of the digestive period to nearly three hours. Five days later the girl felt able to resume her work as a domestic and insisted on doing so.

So far as analysis can determine, here is a clear case of gastritis, where from the history and symptoms alone a positive diagnosis of ulcer would have been made. Whether such cases are simple gastritis, or whether they are the beginning of what later, if untreated, would show the typical signs of ulcer, must be determined by further observation.

Case II. One year ago I was consulted by a healthy looking gentleman, a writer of stories of adventure, who for ten years had suffered with a gnawing pain in the epigastrium, coming on about three o'clock each morning and lasting about four hours. The past history stamped him as a neurotic. He was convinced that he had a serious stomach trouble and that his kidneys were somewhat affected, because he had it on high authority, which he declined to reveal. He believed that he was unable to digest starches and was accustomed to dieting. Food had no effect on the pain.

The examination, including that of the urine, was negative. Pupillary reflexes normal, knee-jerks slightly exaggerated. The stomach was normal in size and position. The stomach contents after an Ewald test meal were normal in amount and constituents, the microscopic examination showing no remains of the dinner of the previous evening. The salol test for motility showed reaction at one hour and no reaction at twenty-four hours.

I assured him that he was sound, that he could stop the pain if he wished, and that he was in imminent danger of becoming a crank. He asked what he might eat. To my remark that he could doubtless digest a boiled dinner when happy better than peptonized milk when sad, he exclaimed: "You are right. The only time when I've been free from the pain is when I have been out the previous evening with congenial companions, and perhaps enjoying a Welsh rarebit and a glass of beer." He was directed to eat everything he liked regardless of consequences, but to masticate carefully. He was warned against eating while physically tired or exercising immediately after meals. He was especially urged to lay aside business and troubles at meal time. He promised me not to get angry for a month and to give up literary work for that time.

Thinking that defective motor power might be the cause, in spite of the negative salol test, nux vomica was taken before meals and a glass of wine or beer with lunch and dinner but soon the nux was changed to bromide, as it increased his nervous irritability. The stimulant was not taken regularly. At the end of two weeks he had been free from pain about half the time and he had no pain the following two weeks. While some special nervous excitement will occasionally be followed by an uncomfortable morning, the symptom has been gone essentially one year. He believes that he is sound, and that the cure rests with himself. My patient has just returned from a six hundred mile tramp through Cuba and reports his general health and digestion perfect.

Whether or no his mental and nervous condition was inhibiting digestion, the cure lay in establishing a nervous equilibrium and not in dieting and drugging.

This case is typical of a great class of neurotics who can be returned to comfort and usefulness if one can convince them that they are not diseased.

The analysis in cases of chronic gastritis frequently furnishes surprises. The symptoms may be quite vague and unsuggestive. I will give briefly the first analysis in such a case.

Case III. A hostler, thirty years of age, has been employed in a brewery three years. During that time, while considered abstemious by his fellows, has drunk beer quite freely. One hot day in July, 1897, after drinking considerable beer and ice-water, diarrhea commenced and lasted until the following March. Never passed blood. Since that time he has never been free from diarrhea longer than two or three months at a time. Usually has two or three loose dejections a day. Never much distress after meals, but much gas in stomach and bowels. Stomach feels weak when diarrhea is present. Appetite usually good. Nausea and vomiting immediately after meals quite frequently during the summer of 1897; not at all in 1898. Recently ate boiled dinner and vomited the cabbage a day later. One evening, more recently, he ate soft-boiled eggs and vomited them the following morning. No other illness. Twenty-five pounds under weight. Physical examination negative, including size and position of stomach.

One hour after the test meal: Amount 52 c. c.; bile-tinged, not much mucus; faintly acid to litmus; free HCl, absent; biuret, present; lactic acid, present; filtrate, achroödextrin. Twenty-five c. c. of filtered gastric juice, with 0.16 per cent. free HCl added, completed the digestive test in twelve hours.

Microscopically. — Few striated muscle fibres (eaten nineteen hours previously), no gastric epithelium seen; no blood; smear stained with methyl blue, contained sarcinæ in moderate numbers.

Two days later, after a thorough washing of the stomach, the results of a test differed only in the practical absence of lactic acid. The total acidity (in terms of HCl), was 0.037 per cent. Until my analysis, his treatment had consisted solely of diarrhea mixtures. He was directed to take milk, raw eggs, mashed potato, cereals and toast. Seventy drops of dilute hydrochloric acid and two teaspoonfuls of Fairchild's essence of pepsin were to be taken after meals, and repeated in one-half hour. By mistake he took only 60 drops of acid and one teaspoonful of pepsin to a dose.

In six weeks he reported a gain of more than seven pounds. His stomach felt "strong," very little gas. Took treatment for three weeks and then reduced the acid and pepsin one-half, as he was having but one natural dejection a day and feared lest the medicine constipate. Omitted treatment after five weeks. Had eaten meat twice a day after the tenth day. Three meals and two or three extra meals a day. Has averaged four dozen raw eggs a week in the extra meals.

One and one-fourth hours after a test meal of 30 grammes of bread and 300 c. c. of water, amount of contents 51 c. c. Appearance not remarkable. Slightly acid to litmus. Free HCl absent; total acidity, 0.0511 per cent.; lactic acid absent; biuret — good reaction; filtrate — achroödextrin; digestive test, seven hours. Treatment resumed.

A rational examination should determine: (1) The motor power of the stomach; (2) size and position of the stomach; (3) acidity of the gastric juice; (4) amount of pepsin; (5) constituents of the sediment; (6) starch digestion.

It is our custom to remove the gastric contents one hour after an Ewald test meal, consisting of 35 grammes of wheat bread and 300 c. c. of water. If one desires to make systematic examination of such cases he must avoid arousing their apprehension and at the same time he must have exact technique. We will suppose that a patient presents himself at the afternoon office hour. His history is then taken, a general examination made, including the reflexes, the heart, lungs, the urine, and position of the various organs. The stomach is inflated with carbonic-acid gas, as it is desirable to know its position before passing the tube, and a diagram kept. Patient is directed to eat nothing after 6 P. M., to drink nothing after retiring and to come early the following morning, when he is given the test meal. Usually the 300 c. c. of water gives a line of flatness indicating the lower border of the stomach. It is well to take advantage of this aid, especially if the previous distention with CO_2 has been omitted. We prefer to use a very soft rubber tube with a bulb. This is shown to patient, the sensations experienced in its passage explained and the patient advised to restrain the impulse to vomit or grasp the tube. Patient leans forward and tube is introduced over base of tongue and pushed steadily onward, while he is encouraged to breathe regularly and occasionally to swallow. When the tube should have reached the contents, siphonage is started by exhausting the air by means of the bulb. Care is taken to exclude saliva and vomitus from the specimen to be examined. When no more can be removed by changing the level of the tube and continuing the exhaustion of air, a measured amount of water is introduced, siphoned out, and measured. This is repeated. If the same amount is recovered, we assume the stomach to be empty. If more or less is recovered, the maneuvre is repeated. Enough water is then poured in to give a sense of moderate distention, and the area of flatness ascertained by percussion, patient standing, and outlined with a pencil. It is then siphoned out and the area again percussed, when the flatness of course should be replaced by tympany. It is well then to inflate the stomach with air through the tube by means of a Davidson syringe or Politzer bag, patient reclining, and confirm the previous diagram for future reference. The contents are then measured, and from the amount we can roughly estimate the motor power of the stomach. An average amount is 70 c. c. Unless motor power is diminished we seldom get much over 100 c. c. Both in diagnosis and treatment we may be aided by a chemical and microscopic examination of the contents of the fasting stomach in the morning.

The following reagents are needed: (1) A decinormal NAOH or KOH solution and a burette and stand; (2) saturated alcoholic solution of 00 tropeolin, gives purple with free HCl; (3) half-per-cent alcoholic solution of dimethyl-amido-azo-benzol (Töpfer's reagent) gives carmine red with free HCl; (4) one-per-cent. alcoholic solution of phenolphtalein gives red with acids free or combined; (5) five-per-cent. aqueous solution of ferric chloride; (7) sulphuric ether; (8) strong hydrochloric acid; (9) glacial acetic acid; (10) weak solution of copper sulphate (Fehling's copper solution diluted will do); (11) ammonium hydrate.

While the gastric juice is filtering we note macroscopic and microscopic appearance of sediment. Test reaction of contents to litmus paper. Test for free HCl with tropeolin as described later. If free HCl is present, to five c. c. or 10 c. c. of filtrate in test tube, add a drop of Töpfer's reagent. A carmine red color appears. Add the decinormal KOH solution from the burette gradually, shaking after each addition. Before the red changes to yellow, heat together in a porcelain dish a drop of contents and one of tropeolin solution. Continue this after each addition of KOH solution, and when tropeolin ceases to give a reaction, free HCl is neutralized.

Suppose two c. c. of decinormal KOH solution had been added to the five c. c. of contents before the drop was added that destroyed the reaction of tropeolin. Then to same specimen add a drop of phenolphtalein solution and continue adding decinormal KOH solution until the red will not deepen. The last reading before the color ceased to deepen was the end reaction.

Suppose that in all three c. c. of KOH solution was added to the five c. c. of contents. Free HCl = 0.00365 x 2 x 10 x 2 = 0.1460 per cent.; total acidity = 0.00365 x 3 x 10 x 2 = 0.2190 per cent.; one c. c. of decinormal potassium-hydrate solution will neutralize 0.00365 gramme of hydrochloric acid. 0.00365 x 2 x 2 = number of grammes of free hydrochloric acid in 10 c. c. of contents. This multiplied by 10 = grammes of free hydrochloric acid in 100 c. c. of contents, or the per cent. A quicker, though less accurate method — especially when organic acids are present — is to omit the tropeolin. Töpfer's reagent and phenolphtalein can then be added at the same time, as their end reactions are separated by an interval.

If free HCl is absent we estimate the total acidity as before, and in addition try the biuret reaction as follows: To a few cubic centimetres of filtrate add ammonium-hydrate solution to slight excess and then two-per-cent. solution of copper sulphate, drop by drop. A reddish violet indicates the presence of albumoses or peptones and shows peptic activity. In the absence of a large amount of lactic acid we may assume that some HCl has been secreted. If free HCl is absent and the biuret reaction obtained, we should soak in water some of the bread used for the test meal and test the filtrate for the biuret reaction before assuming peptic activity.

Lactic acid. — To five c. c. of filtered gastric juice in test-tube, add two drops of concentrated HCl. Boil down to a syrup over flame, cool and shake with ten c. c. of ether. Decant the ether and to it add five c. c. of water and one drop of the ferric-chloride solution. Lactic acid gives a lemon-yellow color.

Starch digestion. — To ascertain the progress of starch digestion, one or two drops of Lugol's solution are added to a few cubic centimetres of filtered gastric juice. A blue color indicates starch, a violet or mahogany-brown indicates erythrodextrin, while achroödextrin gives no color other than that of the diluted reagent. Wheat starch shows concentric rings under the microscope. The disappearance of these and disintegration of the grains also show progress in starch digestion.

Microscopic examination. — One should be familiar with the microscopic appearance of wheat bread soaked in water, of the same after being subjected to normal gastric digestion, and of the sediment of a mixed meal after four hours' digestion. To one familiar with these pictures, much information is gained from examination of the sediment alone. While this information is usually simply confirmatory of that gained by other tests, meat fibres or other remains of previous meals found in the sediment from an Ewald meal may be the first definite proof that a stomach fails to empty itself completely. This should be a part of the routine examination and its value can be learned best by experience.

Some are content to base diagnoses on tests for free hydrochloric and lactic acids. Others go a step further and quantitate for free HCl and total acidity. Either method would have been insufficient in the second analysis of Case I, and in Case III, according to Simon, the digestive test is essential for a differential between neurosis and chronic gastritis. We have seen cases of hyperchlorhydria in which at the first examination free HCl and total acidity were normal owing to acute gastric catarrh. A digestive test explained the complication. A quantitative estimation of the acidity is necessary to distinguish certain cases of hyperesthesia from hyperchlorhydria. Still, these imperfect schemes are better than none.

To illustrate the value of the digestive test, I will report briefly a case of gastric catarrh in a nervous woman.

Case IV. Cigar-stamper, forty years of age, unmarried, subject to "bilious" attacks until two years ago, consisting of drowsiness, vertigo and vomiting of bile. For one and one-half years, when stomach was out of order, too free indulgence in food, or some especially indigestible article, would cause chills. Some indigestion at times for two years, causing sense of distension after meals, and occasional regurgitation of sour fluid. No pain. Much nausea for three months, especially in the morning. No vomiting. Disagreeable taste in mouth and tongue heavily coated. Recently bulimia has alternated with anorexia. Very constipated, irritable, no liquor. Wears suitable glasses. Physical examination negative.

An analysis was made the following day, one hour after Ewald test meal: Amount contents, 90 c. c., considerable mucus; free HCl, 0.064 per cent; total acidity, 0.263 per cent.; lactic acid, strong reaction; filtrate, erythrodextrin. The digestive test was completed in nine hours at 37½° C.

Six weeks later a second analysis was made, chiefly to learn if further treatment were necessary, as the symptoms had disappeared: One hour after the test meal, free HCl, 0.065 per cent.; total acidity, 0.219 per cent. Digestive test was completed in three and one-third hours at 40° C. In these nervous cases especially, the digestive test makes us more independent of subjective symptoms in estimating improvement.

Test meals. — If examination of the gastric juice one hour after Ewald's test meal shows a normal amount of acid and pepsin, there should be no difficulty in digesting a mixed meal, providing the stomach empties itself properly. To exclude the introduction of lactic acid, as in cases of suspected carcinoma of the stomach, it is customary to give Boas's meal of oat gruel, made by cooking to a pint a quart of water, containing a tablespoonful of rolled oats. The stomach is previously washed thoroughly.

Motor power. — If symptoms of motor insufficiency are present after mixed meals, while a normal amount of contents is found one hour after the Ewald meal, we decide the question of motor power by washing out the stomach six hours after Riegel's test dinner, consisting of 400 c. c. of soup, 200 grammes of beefsteak, 50 grammes of wheat bread, and 200 c. c. of water. No food, or only slight traces, are found if motor power is normal. With exaggerated motor power the stomach is emptied precipitately. The Ewald-Sievers salol test has proved unsatisfactory in our hands. Also in cases of suspected motor insufficiency we make macroscopic and microscopic examinations of the contents or washings of the fasting stomach in the morning, a heavy mixed meal having been eaten the previous evening.

Number of examinations. — For diagnosis two examinations should be made with an interval of one or two days.

Estimation of pepsin. — Twenty-five c. c. of filtered gastric juice, if containing a normal amount of free HCl and pepsin, should dissolve five centigrammes (three-quarters grain Troy) of coagulated egg albumin in three hours at 37° to 40° C. To 25 c. c. of filtered gastric juice enough hydrochloric acid is added, if necessary, to make the free acid between 0.1 and 0.2 per cent. If free HCl is absent, about five minims of dilute HCl is added to the 25 c. c. Then to ensure an effective test, always test for free HCl. Five centigrammes of the white of a hard-boiled egg is added and the temperature maintained at 40° C. until the egg disappears.

Blood. — Blood in the gastric contents is usually altered. The microscopic examination may detect it in any form, but where it is reduced to pigment the best method of proving its nature is to form Teichmann's hemin crystals as follows: Evaporate a drop of normal salt solution on a slide and place a little of the pigment on the layer of crystals. Place cover-glass over and fill the space between this and the slide with glacial acetic acid. Heat carefully until bubbles of gas form under the cover-glass. As the acid evaporates, continue its addition, drop by drop, until a faint reddish-brown color is seen. Then allow the acid to evaporate completely, add a drop of glycerin, and examine microscopically for brown rhombic plates. Muller-Weber's test is easier: To the contents or to the sediment add a few drops of glacial acetic acid and shake with ether. If blood is absent the ether forms a clear or slightly yellowish zone above the contents. A brownish-red zone indicates blood. If the zone is not clear add more ether or a few drops of alcohol.

Inflation of stomach. — For routine practice it is best to inflate by forcing air through the stomach tube by means of a syringe or Politzer bag. By this means the distention is gradual and under control. A convenient method is to have the patient drink 30 grains of sodium bicarbonate in solution, and immediately afterwards a solution of 15 grains of tartaric acid. This can be repeated if the amounts are too small. It is safer to repeat moderate amounts and avoid overdistention.

In outlining this scheme of analysis no claim to originality is made. The only object has been to select such tests as are sufficiently accurate and at the same time suitable for the busy practitioner. If in the examination of a few digestive cases one will follow the suggestions contained in this paper, I am sure that he will agree with me that

(1) In many digestive cases an accurate diagnosis cannot be based alone on symptoms.

(2) That a rational examination is practicable for the general practitioner.

(3) That by neglecting such examination, the physician can do his best neither for his patient nor for himself.

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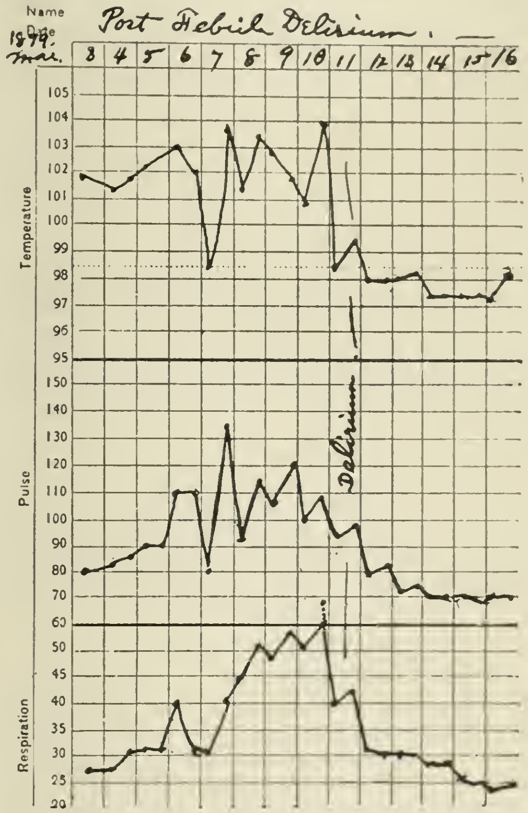
A CASE OF POST-FEBRILE DELIRIUM.[1]

BY ROBERT W. GREENLEAF, M.D., BOSTON.

The following case is of interest in presenting a somewhat unusual condition in the convalescent stage of pneumonia.

The patient, a gentleman sixty-nine years of age, while at his place of business on March 3, 1899, was seized with faintness and vomiting. He had had a slight cold for several days. On reaching home his temperature was 102°, pulse 82 and strong, respirations 24. Signs of bronchitis were present. Two days later pneumonia began in the right lung without pain or chill. The temperature was 103°, the pulse 110, and respirations 40. Two days later still the temperature and pulse fell to normal, but the respiration fell to only 30. This is of interest, as illustrating a condition occasionally found in pneumonia, and known as pseudocrisis. One may easily be misled by it into giving a favorable prognosis, but the rapid respiration and the unresolved pneumonic process should put one on one's guard. In this case serious symptoms recurred in the evening, as if a conflagration had arisen. The left lung, previously clear, was invaded at its upper lobe. The temperature rose to 103.8°, pulse 136, respirations 46. For the next four days the temperature varied from 101.5° to 104°, the pulse from 100 to 140, the respirations 50 to 60, and on the fourth day even reaching 70. The pulse was variable and intermittent during the disease, and when first ill an anemic souffle was to be heard, which had not previously been detected in his case. During the entire illness the patient was mildly delirious; at times he was dull and apathetic. He took nourishment and treatment well. Though his age and the considerable amount of lung area involved were against him, yet at no time did he appear to be in extreme danger.

The especially interesting feature of his case, and the one for which I report it this evening, was the condition arising on the day of his actual crisis, namely, the seventh of his illness and the fifth from the pseudocrisis. On this day the temperature dropped to normal, the pulse was 96, the respirations were 40, and signs of resolution were progressing rapidly. Coincident with this marked improvement his mentality became greatly changed. Instead of the mild, dreamy delirium and his docility under treatment, he became practically insane. He absolutely refused food and medicine, and was enraged to the point of resistance because he was not allowed his clothes and was kept in bed. Though calmed by the time of my visit, when I tried to give him medicine he dashed the spoon across the room and objected to any treatment. Thoughts of suicide were also present. He had no conception of how ill he had been, and could not see any reason for the care given him.



In addition to the night and day nurse attending him a male nurse was secured, and towards night he concluded to accept the situation. He excused this change of attitude on the ground that further opposition was useless, also because of a delusion that though he had refused medicines by the mouth in some way I had managed to get them into him through the air. His smothered resentment and insane desire to be up and dressed lasted about four days. It gradually lessened, and by that time was nearly gone. Curiously enough, he was fairly strong during this period. His pulse was regular and of good volume.

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[1] Read before the Clinical Section of the Suffolk District Medical Society, April 19, 1899.

What shall we call such a perverted mental state? Was it insanity? was it hysteria? or was it simply a delirium? Post-febrile insanity is occasionally found after exhausting disease, as typhoid or pneumonia, just as it is also occasionally found after surgical operation, but its symptom-complex usually presents a more varied, more marked and especially more permanent set of symptoms than occurred in our case. Therefore, though I considered him insane on the day of the crisis, and inclined to a serious prognosis, I now think that the condition was not insanity. As to hysteria, it is quite a question whether that is not the correct diagnosis. The patient for the preceding five or six years has caused much anxiety to his family and physicians by varied attacks of a nervous character in which the element hysteria was certainly present. The diagnosis rests between that and atypical delirium. During the febrile portion of his illness the disturbed mentality was simple delirium, such as is explained as due to toxin irritation. Though the symptoms in the convalescent stage differed materially from the preceding ones of the febrile stage yet on the whole they are probably of a similar origin.

It is of interest in the further history of this case that the patient's strength has gradually returned, and that there has been no recurrence of the symptoms above noted. On the other hand, with returning health, he has shown some of his long-standing restlessness and insomnia. These, however, are diminishing daily, and the patient is now in fairly good condition.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., AND WM. DUDLEY HALL, M.D., BOSTON.

(Concluded from No. 16, p. 392.)

BLEPHARITIS ACARIA.

E. Raehlmann[7] says that the presence of the demodex folliculorum in all stages of development, eggs, embryos, larvæ and adults of both sexes, he considers to be a cause of blepharitis without any distinguishing features. There were the usual swelling and redness of the lids, crusting and irregular growth and falling out of the lashes. Balsam of Peru and lanolin, one to three, caused such a rapid improvement, and as living acari were found after the symptoms were relieved, and as also acari may be found along lid margins which are apparently normal, it is possible that they merely accompanied an accidental blepharitis. In looking for the parasites one must put the freshly epilated hair upon a glass slide and examine with a low power in water, when will be found both the male and female animals, larvæ, embryo and eggs, showing that the entire process of generation takes place in the hair follicle. In addition to these there will also be found their metabolic products.

DACRYOCYSTITIS IN INFANTS.

Jocqs[8] states that this condition in infants is generally attributed to an imperforate condition of the lower end of the nasal duct. According to the researches of M. Cosmettetos, the lachrymal canal starts from the sac, forms a fibrous solid cord stretching down from the sac towards the nose, solid at first but soon becoming pervious, as can be seen in the embryo partially completed in the third month. If, therefore, perforation does not take place as it should, the secretion will accumulate, become infected, and thus we have a dacryocystitis. The inflammation may become purulent as early as the third day and may be mistaken for an ophthalmia neonatorum, but usually it may remain without any unusual manifestations for several weeks. According to Jocqs, the rational course to pursue is to try and promote absorption of this fibrous band, and he advises rather vigorous injections of weak antiseptic fluids, but does not countenance the use of the probe. If there is abscess formation he advises frequent emptying of the sac and after which the injection of a 20-per-cent. protargol solution. The prognosis is usually good.

THE ULTIMATE RESULTS IN THE TREATMENT OF GLAUCOMA.

Zidler-Huguenin[9] deduces the following from the private practice of Professor Haab, of Zurich. He divides the cases into three categories: (1) Inflammatory glaucoma (acute and chronic); (2) non-inflammatory glaucoma (glaucoma simplex); (3) hemorrhagic glaucoma. In more than half of the cases of acute inflammatory glaucoma iridectomy was followed by complete cure and the cases not cured were invariably benefited. A cure was obtained in 62.5 per cent. of acute cases and in 60 per cent. of the chronic cases. In only three cases was iridectomy followed by malignant glaucoma, once after acute glaucoma and twice after glaucoma simplex. After the operation for acute and chronic glaucoma useful vision was obtained in 91.47 per cent. of the cases. As regards glaucoma simplex, in 78.41 per cent. of the cases after iridectomy and in 60 per cent. of the cases after sclerotomy the vision was either improved or remained the same. He advises myotics with the sclerotomy. For hemorrhagic glaucoma he advises sclerotomy and claims cure in 20 per cent. and no falling off in 40 per cent. of the cases. He explains his good results by the fact that the cases reported were seen in private practice.

THE RESECTION OF THE CERVICAL SYMPATHETIC IN THE TREATMENT OF GLAUCOMA.

Jonnesco's[10] conclusions are as follow: These operations have demonstrated the important bearing which the cervical sympathetic has upon the etiology of glaucoma, with the exception of the hemorrhagic variety, as the removal of the cervical ganglion paralyses the nerves which give rise to the most troublesome of the glaucoma symptoms. The best results are obtained in those cases where irritation and inflammation are not too pronounced. The operation, however, is comparatively insignificant, and should be resorted to in all cases of glaucoma, even in absolute glaucoma. Improvement usually takes place immediately after the operation, and in a majority of cases is permanent and at the same time progressive. The operation has often proved successful in giving relief where iridectomy has failed. In cases where glaucoma and Basedow's disease coexist the resection of the cervical sympathetic will influence for the better both conditions.

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[7] Klin. Monatsbl. f. Augenheilk., February, 1899.

[8] La Clinique Ophthalmologique, May, 1899.

[9] Beiträge zur Augenheilkunde, Heft 32.

[10] Wien. klin. Wochenschr., 1898, No. 18.

THE VALUE OF ACOIN AS A LOCAL ANESTHETIC IN EYE SURGERY.

Randolph[11] mentioned Trolldiener's recent experiments upon rabbits with acoin, a new anesthetic, and reported upon his own use of it in the human eye. He had tried it for the removal of foreign bodies, pterygii, tarsal tumors, etc., but did not find it as satisfactory in some respects as either cocaine or holocaine. In those cases where there was much congestion repeated instillations were necessary to make the removal of a foreign body possible. The stinging sensation following its application was greater and its anesthetic action slower than either cocaine or holocaine. Bacteriological experiments seemed to show that it would kill bacteria after a length of time something under twenty-four hours. A one-per-cent. solution gives about the same result as regards time as cocaine in a quiet eye. There are no corneal defects after use. It has no effect upon the accommodation, does not affect the size of the pupil, and does not increase the intraocular tension.

LOCALIZATION OF INTRACRANIAL TUMORS.

In a discussion of the Neurological Society of London, it was remarked that in order of frequency of optic neuritis in tumors those of the cerebellum came first, then of the basal ganglia, then of the occipital, frontal, and temporosphenoidal lobes, rapid growth, increase in amount of the cerebro-spinal fluid, and basal meningitis being the conditions which contribute to its onset and severity. Gunn[12] thinks that a unilateral neuritis or a unilateral excess of neuritis may aid somewhat in localizing. According to his idea the further forward the growth is the greater probability is there that the neuritis may be either unilateral or worse on the same side. It seems to him more likely that a tumor of the right frontal lobe may cause a right-sided neuritis than an occipital tumor, or certainly than a cerebellar one. He also suggests that minor differences, anatomically speaking, in the orbit and its contents may predispose, and suggests that differences in the refraction of the two eyes may cause a difference, real or apparent, in the degree of ophthalmoscopic change.

HAAB'S OR HIRSCHBERG'S ELECTROMAGNET.

Max Linde,[18] in reviewing a number of cases published from the Vienna clinic by Sachs, concludes that removal of a foreign body from an eye by means of a Haab magnet is sometimes productive of more serious results than would have been caused by the original injury. In several instances either the iris, lens or ciliary body was injured and in another the magnetic force was sufficient to drag the piece of metal through all the coats of the globe at the wound of entrance. He thinks that in the majority of cases better results can be attained by use of the weaker magnet. If there be an opening into the anterior chamber the application of the Haab instrument is apt to cause prolapse of the iris, hemorrhage into the anterior chamber or rupture of the zonule, while if the opening is in the posterior chamber there may be severe injury done the vitreous body with detachment of the retina. The Haab giant magnet is adapted to those cases where the foreign body is at the angle of the anterior chamber or so situated as not to be approached by the magnet probe.

RETINAL LESIONS IN LEUKEMIA MYELOGENICA.

Frænkel[14] reports that in the retina were numerous closely set, often confluent, bright-red hemorrhages, immediately surrounding the papilla; there were also punctate extravasations, situated more peripherally, and white patches more or less striated in appearance, continuous with the disk and resembling medullated nerve fibres. These lesions are, however, not to be distinguished from those met with in pernicious anemia. Deutschmann, although he agrees with Frænkel, is convinced that there is an ophthalmoscopic picture peculiar to leukemia, namely, a peculiar orange color of the fundus oculi, which may be present in cases without visible retinal lesions. The cause of this orange tint is uncertain, but it is probably due to an infiltration of the choroid with leucocytes, and it must also mean that the retinal pigment epithelium has become transparent. Pathological changes have been found in this layer in leukemia.

"TARE NERVEUSE" AS A FACTOR IN STRABISMUS.

De Micas[15] finds among the immediate and collateral ancestors of patients with squint a great number who are neuropathic, the commoner forms of such neuropathy being, in order of frequency, idiocy, psychoses, and epilepsy. An ametropic child of neuropathic parents will usually squint, and, although the ametropic may have strabismus without any hereditary predisposition, a hereditary predisposition may bring about strabismus in a child whose eyes are emmetropic, as, for example, an hysterical squint. The neuropathy in the sense understood by the author need not be characterized by the advanced degeneration existing in the hysterical, epileptic, and the like. The hereditary disposition caused by ordinary nervousness in the parents may manifest itself in the children only in convulsions and such unimportant and quickly forgotten symptoms and yet be sufficient to bring about squint.

THE VALUE OF LOHNSTEIN'S HYDRODIASCOPE IN CASES OF KERATOCONUS AND IRREGULAR ASTIGMATISM.

Majewski[16] gives an interesting account of how Lohnstein corrected a high degree of keratoconus in himself by constructing what he called "*Wasserbrille.*" The author uses a modification of the above-mentioned instrument, shaped more like an ordinary pair of spectacles and much lighter and more comfortable. The fluid with which the chambers are filled is the physiological salt solution and no ill effects were ever seen from its contact with the cornea. He gives an analysis of 14 cases, in none of which could any improvement be obtained by ordinary lenses. He reports one case of irregular astigmatism, the vision of each eye being $\frac{6}{18}$, there being no improvement by glasses, yet with Majewski's instrument the vision came up to $\frac{6}{6}$.

THE PRESENT STATUS WITH REGARD TO THE TREATMENT OF DETACHED RETINA.

De Wecker[17] thinks that operative procedures for the relief of retinal detachment tend to make matters worse, as the vitreous, choroid and retina are by necessity injured. He still adheres to the view advanced by Rehlmann in 1876, that the detachment is caused by the disturbances in the exosmotic currents or streams which pass through the retina, and as a result would have an influx of water to the vitreous overloaded with salts. He has sought to divert these currents outwards by injecting salt solution beneath the conjunctiva. For twelve years he has made the injections directly into Tenon's capsule, but recently has been employing solutions of gelatine as being less painful. He gives as a formula: Physiological salt solution, 100, and white gelatine, 3.5; this to be sterilized at a temperature not higher than 105°. He makes two injections each week and gives sublimate pills internally.

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[11] Report of the American Opthalmological Society, 1899.
[12] Brain, Autumn, 1898.
[13] Centralbl. für Augenheilk., January, 1899.
[14] Munch. med. Wochenschrift, No. 28, 1898.
[15] Ann. d'Oculist, February, 1899.
[16] Klin. Monatsbl. f. Augenheilk., May, 1899.
[17] Ophthal. Klinik, June, 1899.

THE OCULAR SYMPTOMS IN DISEASE OF THE CORPORA QUADRIGEMINA AND PINEAL GLAND.

Dr. Ludwig Bach,[18] in his valuable contribution, concludes that isolated disturbances of the corpora quadrigemina in the case of human beings do not lead to blindness, nor can we say what lesions lead to visual disturbances. Double-sided disturbance in the roof of the corpora will in all probability cause reflex pupillary rigidity on both sides, while a one-sided disturbance will cause reflex rigidity on the same side. Muscular disturbances and symmetrical paralysis are to a certain extent characteristic of affections of the corpora. Isolated paralyses of certain eye muscles do not seem to point especially to it, while paralysis of the trochlear and motor oculi together strongly suggest it. Ataxic symptoms are frequently seen quite early.

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Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

J. BERGEN OGDEN, M.D., SECRETARY.

Regular meeting Wednesday, April 19, 1899, Dr. H. F. Vickery in the Chair.

Dr. Arthur C. Jelly read a paper entitled

THE RESPONSIBILITY OF THE ATTENDING PHYSICIAN WHEN A WILL IS MADE.[1]

Dr. Cheever: I have come to an age when I have seen a good deal of these things and I think that all the points in the paper are very important to remember. The writer did not touch, I think, upon the condition which is produced in some diseases of the kidney on the brain, nor the use of drugs like opium. Both these conditions might be held to invalidate the reasoning power of the patient when he made a will. It is so common now to break wills that it has been said rather jocosely that the only object of making a will is in order that your executors or friends might not be required to give bonds. A will which involves any large amount of property where there are a number of scattered heirs is sure to give dissatisfaction, and the experience seems to be in this community that most of these wills are attacked; some of them are broken, but frequently they are settled by a compromise.

The Massachusetts law is very unsatisfactory with reference to the position of the medical man in this State. Of course there may be circumstances in the patient's life about which the physician would feel some delicacy or reticence in speaking unless it were a case that involved a criminal prosecution endangering the life of another person, as in case of assault or murder, when of course no reticence should be observed. But in questions of ordinary right and wrong in civil suits, and in questions of property, very often contests arise where the doctor is placed in a cruel position in court as to whether he shall tell or not what he knows about the patient and what he regards justly as a professional confidence. He may not have been the attending physician, may have been consulted in his office, may have learned certain facts which the patient confided to him as he would to a priest, and his reticence certainly ought to be respected in the same way, but it is not, and he is obliged by law, if called upon, to tell whatever he knows, or else be adjudged in contempt of court and be fined and imprisoned. That is the present condition of the law. I am not aware that here in Massachusetts the courts or judges have ever attempted to make the father confessor in the church give up his secrets, but they have enforced that upon the physician, and what would take place in case he stood out I do not know. I hope the case may be tested sometime. I bring this up in order that the younger men may remember that they must be very careful about what they hear from patients and what they tell, for, unfortunately, under the Massachusetts law, they are not protected as to professional secrets. A doctor may feel that in honor he ought not tell, may not tell and may take the consequences. If he feels it is foolish to contend with the Commonwealth in this way he may, to a certain degree, save his feelings by refusing to answer, and then answer under protest when forced to do so. In that way he may appear rather better in the eyes of the public and in the eyes of the court. He never will appear well in the eyes of the friends of the patient whose secrets he has made public.

Although this has not so direct a bearing on the question of sanity with regard to wills, yet it has a remote bearing, and is so important I thought I would speak of it, more especially since my attention has been called lately to the fact that in New York State the law has been more vigorously asserted than ever in the opposite direction. Some time ago I had occasion to look up the condition of the law in various States of the Union, and I found that New York and some of the newer States in the West, I think quite a number of them, had enacted laws which protected the physician absolutely as to the secrets of the sick-room. And recently I believe a law has been passed by the Assembly in New York, and I presume has been approved by Governor Roosevelt, — at any rate I should think he would be a person who would be likely to approve a law of that kind, — making it a penal offence for a physician to reveal in any way anything that has come to his professional knowledge in connection with a patient, whether by the patient's statements or by his observation. We must draw the line somewhere, and it won't do to have physicians held to secrecy in the positions they hold in relation to other people if a question of crime or life is on hand; the truth must come out in order to punish the criminal and protect the community. But why should the foibles or weaknesses of one who comes to you for treatment be betrayed in court to the disgust of the whole community, perhaps to the deplorable sacrifice of the feelings of wife or friends, on some trifling question of property? I contend that we should resist, and if we cannot enforce this thing alone we should have a combined effort by which we may get the law altered.

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[1] See page 411 of the Journal.

[18] Zeitsch. f. Augenheilk., Bd. i, Heft. 4, 5.

Another thing is life insurance. Almost every patient of any means is insured, and the family physician's statement on the insurance papers is always sought for; it is, in fact, a *sine qua non* as to the surviving relatives getting the money. The question of suicide often comes up. It has happened to me twice, and it will happen to you all in the course of your professional life. Some policies are invalidated by suicide. Some suicides are clear and well known, but some are done so neatly and obscurely that the doctor cannot tell whether the death was accidental or by design, and here the physician must exercise great caution and be very careful what he says at the moment when he is called to a case of sudden death, because he may let out something he did not wholly mean; it is taken up either by a nurse or sometimes by the undertaker, and transmitted to the public; appears in the papers the next morning, to the physician's horror, as the true state of the case. Too much discretion cannot be observed here and too much care in keeping silence, just as we should guard the secrets of the family under other circumstances.

Dr. R. W. Greenleaf reported

A CASE OF POST-FEBRILE DELIRIUM.[2]

Dr. Jackson: Dr. Greenleaf has presented a very interesting case. I have seen serious mental disturbance follow typhoid, but I have not seen it follow pneumonia. I wish to speak of one other point not exactly connected with Dr. Greenleaf's paper and that is the danger of collapse in the crisis of pneumonia. The books speak of possible danger of collapse. Last summer I lost a child in the collapse of the crisis and I had an adult who was very sick. I speak of this in connection with other serious disturbances following the crisis.

Dr. Cheever: I should like to ask the Chairman if it was not once an accepted idea — may be so still — that pericarditis was liable to be accompanied with a good deal of acute violent delirium?

The Chairman: I believe so, sir.

Dr. Cheever: I have sometimes thought in cases of pneumonia that pericarditis was the cause of great mental excitement. I merely advance the idea. I wish some one else would take it up.

Dr. Vickery: I think perhaps in this connection it might be well to speak of the possibility at the beginning of an acute febrile disease of symptomatic delirium being mistaken for acute insanity. Such cases might be, and sometimes have been, carried to insane hospitals much to the subsequent regret of the family and of the attending physician. A chance to make that mistake comes to most of us sooner or later. Post-febrile delirium of the sort Dr. Greenleaf has described has been very rare in my experience. In typhoid fever I have seen aberration, amounting practically to a melancholia, but no such thing as he has described.

Dr. Jackson: I should like to ask Dr. Jelly what he considers the prognosis of mental disturbance following acute febrile disease, such as typhoid?

Dr A. C. Jelly: My impression is that the prognosis is usually good, unless there is a predisposition to insanity. The cases I have seen have all been melancholia; in some of them frequent feeding by the tube through the mouth or nose was required; several such have recovered. I never saw a case following pneumonia. The disease-process lasts so much longer in typhoid that one can understand why it leads to mental disturbance more frequently than in pneumonia.

The possibility of mistaking typhoid for insanity, to which Dr. Vickery has alluded, is very important. I saw a case recently where it seemed impossible to make a diagnosis at once; the man was restless, apprehensive, unwilling to submit to physical examination, his pupils dilated, his expression stupid, his pulse 120; his friends said that he had diarrhea, and at night high fever. We thought it was probably mania, but we were not certain; after two days at the Massachusetts General Hospital, careful examination showed that it was not typhoid. There are many reasons why it is unfortunate to send a case of typhoid to a hospital for the insane.

Dr. M. P. Smithwick read a paper entitled

EXAMINATION OF DIGESTIVE CASES.[3]

Dr. Liebmann: It seems to me in the examination of patients the mobility of the stomach ought to be tested. In my opinion this is of great importance. We might make the mistake of putting some of our patients down as cranks because we did not find any change in the chemistry of their stomachs. Their chemistry might be going on all right and normally, and still there might be something material the matter; that is, there might be a disturbance in the timely expulsion of the stomach contents into the intestinal canal. Of course in hysteria or neurasthenic cases this might be present without any organic disease of the stomach, and to find that out is important; we should examine the stomach contents in the morning after the last meal has been taken the evening before and in that way we can easily determine whether the stomach empties itself right or not, and in a great many cases, especially neurasthenics, I find there are some small particles of food still present in the morning, and this may account for their abnormal feelings.

Dr. Henry Jackson presented the subject of

FUNCTIONAL DISEASE OF THE HEART.[4]

Dr. Arnold: It seems to me the question of the murmurs is an important one in discussing the question of functional and organic heart disease. The distinction between functional and organic disease is a clinical one, while pathologically the conditions merge gradually from one into the other. We can divide the murmurs into three classes. There are murmurs in valvular disease, for instance, that we all recognize unquestionably as organic. There are other transitory murmurs coming in cases of debility or similar conditions which we would all agree to call functional. Then there is the intermediate class in which there is more or less uncertainty, and about which there are a great many theories. It is of practical importance, it seems to me, to come to as clear an understanding as we can in regard to these murmurs, both because we are asked by our patients for an opinion and because the exact condition which underlies them may rightly affect the line of treatment. In distinguishing between the two main classes of organic and functional murmurs, there is no one sign on which we can base a definite opinion. We are generally told that a functional murmur is of low tone and blowing quality, and yet we know that we have functional murmurs that are very loud and high-pitched; in fact, much more so than some organic murmurs. Functional murmurs are said to be transitory and organic murmurs are permanent, yet some functional murmurs, particularly anemic murmurs, last a long time and some organic murmurs in time disappear.

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[2] See page 419 of the Journal.

[3] See page 415 of the Journal.

[4] See page 408 of the Journal.

It is generally agreed that the functional murmurs are systolic in time, and therefore at present we shall consider these alone. The question of the location of the murmur and of the area over which it is transmitted is generally accepted as being of importance. It is generally said that functional murmurs are not transmitted to any distance from the heart, as organic murmurs are. In considering the location at which murmurs are heard, I think it is important to keep clearly in mind the anatomical picture of the organs within the chest, instead of thinking only of the four points or areas which are associated with the different valves. In that way we shall understand better some of the rather complicated phenomena which we find in connection with murmurs. We speak of the apex region as the mitral area, and yet I think we have all seen cases where an aortic systolic murmur is transmitted very plainly to the apex region. If, for instance, we were to think of this region as the area of the left ventricle, carrying the anatomical picture in our minds, we would be less likely to mistake an aortic systolic for a mitral murmur, the path by which each murmur gets to this point being the ventricle. There is another area, that directly over the valves, about the junction of the third cartilage with the left border of the sternum, to which I do not think we always pay enough attention. Again, bearing the anatomy in mind, if we remember that this is about the base of the heart, and at the thicker part of the ventricles, we can easily understand why any murmur at any of the valves may be pretty plainly transmitted to this point. We may speak of this as the valvular area.

I want to say a word about mitral murmurs, as that leads me to a certain view in regard to hemic murmurs. I have found that at this valvular area mitral murmurs, to my mind undoubtedly mitral murmurs, are often very distinctly heard and are transmitted upwards and outwards to the left, reaching into the second intercostal space. Other murmurs starting in the same area are conducted round to the left side of the heart, and others still are transmitted further and are carried in that way down to join the ordinary mitral murmur. We also find the mitral murmurs very frequently transmitted to a certain region in the back which is often spoken of as the "mitral area" there.

Coming to anemic murmurs, as these represent the functional murmurs perhaps better than any others, I will try in a few words to sum up the results in some cases I have been investigating in that line which lead me to the view that most of the so-called anemic murmurs are really due to mitral regurgitation instead of being due to the condition of the blood alone. It would appear that we have been forced into the view of considering that anemic murmurs are due to the condition of the blood largely because they are heard in the second intercostal space on the left. We ordinarily regard this as the pulmonary area and ascribe the murmur to the pulmonary artery; then finding no lesion of the pulmonary artery, we go to the blood for an explanation. Among the anemic cases I have found some where the murmur is heard only in this second intercostal space; in others it is carried from here round the left border of the heart into the third and fourth intercostal spaces; in others it is carried still further down to the apex in a continuous area of transmission, and in still others it is heard over this last area and also in the back. These last I think we might very easily agree are cases of mitral insufficiency, the deciding point being that the murmur is transmitted to the mitral area in the back. By this same test, however, many of the other cases should also be attributed to mitral insufficiency, for in all these different groups of anemic murmurs I have found some cases where the murmur was heard in the mitral area in the back, whether heard at the apex or not. It was a genuine surprise to me to find murmurs heard at this area in the back when in front they could be heard only in the second left intercostal space. That we are right in considering these different groups of anemic murmurs as different phases of the same fundamental conditions is shown, I think, by finding instances where in the same cases the murmurs have in turn the characteristics of the different groups. For example, I have seen several cases that have started with a condition that would ordinarily be accepted as mitral insufficiency, with a continuous area of transmission from the base around the left side of the heart to the apex and back which have later split up into a murmur heard at two separate areas at the base and at the apex, and afterwards the apex murmur has disappeared entirely and you have nothing left except what would ordinarily be called an anemic murmur.

To-day I had the pleasure of participating in the examination of some of the men who ran in the Marathon races of the Boston Athletic Association. These men ran twenty-five miles and showed a condition of great muscular exhaustion. It seemed to me we might there find a practical test of this question, for by overstrain and exhaustion of the cardiac muscle we artificially induce a weakened condition of that muscle, similar to what may be assumed to exist in anemia or debility. The reason for the insufficiency of the mitral valve under these conditions lies in the fact that the mitral orifice is closed partly by muscular action as well as by the valve itself, and, that when the muscle is sufficiently weakened from any cause, the narrowing of the orifice by muscular contraction is incomplete and the valve leaks. Of 13 men examined at the end of the race we found murmurs in 11. In all of these cases we found a systolic murmur, heard in more or less the area that I have tried to describe. In six of them the murmur was confined to the left intercostal space and transmitted more or less around the left side of the heart, but not reaching the apex. In the other five it followed the same line of transmission, but was also heard at the apex and at the left of it, and was heard in the back at the mitral area. It seems to me that the only conclusion is that in all those cases the murmur was caused by the same process and that that process was a straining or tiring of the heart muscle and causing a temporary leakage from the mitral valve. It was also interesting that in almost every case the murmur disappeared after a very few minutes when the contestants had had a chance to rest, and the cardiac muscle had regained its tone.

Dr. Smithwick: Two years ago a young man came to me in an attack of palpitation which had come on while he was waiting for a street-car. The heart was large and at the first examination was beating so rapidly that it was impossible to tell what sort of lesion was present. The next morning I made out a very marked aortic regurgitation. He had been subject to these attacks for five years at irregular intervals, averaging once a month for a year, and they usually lasted about six hours. The last attack was in November, 1897, and lasted eighteen hours. I was interested in what Dr. Jackson said about the treatment with bromide. My patient had digestive symptoms, largely gas formation, and was very irregular in his meals. Bromide and regular meal hours stopped the attacks. The association of this functional disturbance with a marked organic lesion was rather interesting to me. I have had a case of exophthalmic goitre in which palpitation was a prominent symptom that had done very nicely under bromide and iron.

Dr. Otis: With regard to pseudo-angina, to which Dr. Jackson has referred, I recall a rather interesting case which was under my care, in which the diagnosis was doubtful as to whether it was angina vera or pseudo-angina; at all events the attacks simulated those of true angina, for which I gave the patient some nitroglycerin to use whenever the attacks occurred. I had at the time under my care a gentleman suffering from serious cardiac organic lesion, and he had been persuaded by his wife to try some homeopathic remedy. He said it always relieved him when he had serious attacks of pain. The remedy consisted of the "carbo veg." of that school, tiny charcoal granules. He presented me with some, and the next time I visited the former patient I asked him to try them, stating the fact that a gentleman with cardiac trouble had expressed himself as experiencing relief from their use. He afterwards reported that he obtained equally good results and relief from his pain as he did previously from nitroglycerin, evidently a case of mental effect.

Dr. Engelmann: Functional disturbances interest us all, and it has given me especial pleasure to hear Dr. Jackson's paper, as I have for many years closely observed those, to me, very striking phantoms of disease, without pathologic significance, the reflexes or functional neuroses, which occur in connection with utero-ovarian lesions as concomitants or dependents. Amongst these, cardiac neuroses of a minor degree are quite frequent; the patient herself is often aware of the condition of her heart, and it gives her anxiety. She observes the intermission, the irregularity of pulse, palpitation and pain, and dread of heart disease, like the fear of the insane asylum, is not an uncommon accompaniment of pelvic disturbance. In connection with utero-ovarian lesions, I have noted all the varying symptoms which the essayist has described, the angina, violent cardiac pains aggravated during the period and with aggravation of the pelvic disease; the loss of a beat now and then, usually one in six or eight, and tachycardia, but I cannot agree with Dr. Jackson in placing flushes and cold extremities in the same category. These I have generally seen as peripheral, as vasomotor, and not as cardiac neurosis.

Medication gives but temporary relief; the functional cardiac symptoms, especially when distinctly reflex, cease with improvement of the accompanying pelvic condition by treatment or its removal by operation, and after a satisfactory survey of the case — the functional nature of the irregularity determined — treatment may be confined to the causative condition. I miss, in the very complete paper, the necessary emphasis which should be given to removal of the cause, the only method of treatment upon which we can depend, and I may add that I have the same criticism to make on that most admirable article of Flint's in Pepper's "System of Medicine," which is one of the first and most authoritative on cardiac neuroses.

In a distinctly functional disturbance, generally reflex as I have found it, removal of the cause alone assures a satisfactory result; in the treatment of my patients I have usually avoided cardiac remedies and have given attention to the causative uterine condition alone, thus obtaining permanent relief and distinctly demonstrating the reflex or functional character of the irregularity. I should say with Boldt that we find such cardiac symptoms in from six to eight per cent. of chronic uterine cases; they claim the attention of the gynecologist, as they do that of every practitioner and the life insurance examiner; the heart responds to the emotions, to cerebro-spinal, to splanchnic invitation as it does to utero-ovarian stimulus, and these semblances of disease appear in every field of our work.

Recent Literature.

Materia Medica, Therapeutics, Medical Pharmacy, Prescription Writing and Medical Latin. A Manual for Students and Practitioners. By William Schleif, Ph.G., M.D., Instructor in Pharmacy in the University of Pennsylvania. Lea's Series of Pocket Text-Books. Series edited by Bern B. Gallaudet, M.D. Philadelphia and New York: Lea Brothers & Co. 1899.

This is not a practical pocket text-book, because it is too bulky; it is not a text-book for home study, because it is merely a compilation on a small scale of the work of others. An idea of the book may readily be formed by reading what it gives on the therapeutics of pepsin: "Naturally the chief indication for pepsin is weakened digestive power. When hydrochloric acid is wanting or diminished in the gastric secretion, the addition of this element undoubtedly increases its value. Even at the standard strength indicated above, the doses habitually given could be of very little actual benefit unless a stimulant action upon the mucous membrane takes place; and some authorities are skeptical as to its real value. Acting as a ferment, however, its activity may be increased by repeating the dose of hydrochloric acid.

"The diarrhea of children, dependent upon imperfect gastric digestion, may be greatly benefited by pepsin. It has been suggested as a solvent for diphtheritic membranes and blood clot in the bladder."

Comment is unnecessary. No mention is made of heroin, urotropin, dermatol, tannigen or orexine.

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DISEASE AT SUMMER RESORTS.

The ingenuity of man is well exemplified in the modern large summer hotel. Built, as a rule, of inferior material, arranged to accommodate the greatest possible number of people consistent with decency, deserted for the greater part of the year, it is not to be wondered at that its sanitary appliances are often defective and that disease finds there a ready soil for growth. To prepare for the reception, perhaps, of several hundred people is, in any case, not an easy problem, and when this is complicated with the necessary imperfections of construction of the ordinary summer hotel, one finds only cause for surprise at the relative health maintained by its guests. A counteractive element, no doubt, is the otherwise normal life which frequenters of summer resorts are likely to lead. There is, however, sufficient evidence to show that these resorts breed disease to an extent which demands active investigation.

Our attention has been called to the matter by some comments in the September number of the *Bulletin of the Connecticut State Board of Health.* Dr. C. A. Lindsley, the secretary, maintains that as cases are being more carefully registered, it appears that a large proportion of the victims of infectious diseases are among those who have been visitors at the various summer resorts. He writes, in part, as follows:

"Summer guests themselves are learning to appreciate the risks of hotels, boarding houses and even their own shore cottages. The last, in popular localities where the price of land is high, are often so closely crowded together on small lots, with no special provision for sewage disposal, that they are frequently more unhealthy places of residence than the homes they leave in the city. The proprietors of the large hotels which are most liberally patronized know full well that a case of typhoid fever would scatter their guests almost as quickly as a conflagration, and hence the hotels are for the most part kept with scrupulous and vigilant attention to the practice of good sanitation. But in the cheaper hotels, and especially in the clusters of shore cottages, the violation of sanitary law is so frequent and so flagrant, that if they were occupied continuously, instead of only for a few weeks at a time, they would soon become dangerously unfit for human habitation."

Dr. Lindsley suggests that apparently sporadic cases of typhoid fever may be due to a single focus of infection at a summer hotel, the disease developing only after the guests have scattered to their respective homes. This has, in fact, several times been proved to be the case. The moment the matter is brought to our attention such a theory seems altogether reasonable; with a certain amount of co-operation on the part of physicians in various States, it would not be difficult to trace many cases to a common source.

Dr. George Dock has recently communicated to the *Philadelphia Medical Journal* an experience which so well bears out the point of view already expressed, that we quote it in part:

"Not long since I visited a celebrated waterfall, one of the many falls where in the summer season the water is dammed up and the "fall" only produced for a pecuniary consideration. Beside the fall is a popular hotel, and the fall is visited by large numbers of people during the season. While I was examining the rock formation below and behind the fall, the water was turned on for some other visitors who stood directly in the spray while they took photographs of the fall. Crossing over to a lower part of the fall, where I was exposed to the edge of the spray, I was struck by the strong fecal odor of the water. I called to the young men that the water smelled suspiciously of sewage, but they were too intent on their camera to pay attention to what I said. At the top of the fall I was told by the young lady who turned on the water that the water was nothing else than the stored-up sewage of the hotel, which was kept for the purpose. My surprise at this information was not lessened when the young lady went on to say that many people who visited the fall, thinking no doubt of Bryant's description of the "sweet light spray of the mountain springs," go down to the bottom of the fall and drink this same water. It is hardly necessary to enlarge upon the possible consequences of these draughts."

No doubt many of us have had more or less similar experiences. In any case one's respect for the summer hotel (there are exceptions), if not already at its lowest ebb, is visibly influenced by such facts as these. Summer is recognized as a time for recreation, but not, we trust, as a time when sanitary laws are to be set aside as inactive. The proximity of the sea does not detract from the offensiveness of a foul odor, nor does it make the cause of that odor any the less deadly in its effect.

Appointment of Dr. Alonzo E. Taylor.— The appointment of Dr. Alonzo E. Taylor, of Philadelphia, to the professorship of pathology in the Medical Department of the University of California is announced.

THE REPORT OF THE BOSTON HEALTH DEPARTMENT FOR 1898.

THE current report of the Boston Health Department is of more than usual interest owing to the very decided improvements in the details of its work, which have led to a considerably broadened range of public usefulness. The pamphlet of 148 pages is amply illustrated with charts and tables, indicating the progress made in municipal sanitation. Most striking is a diagram graphically representing the diminution in mortality from diphtheria since the general introduction of antitoxin as a means of treatment.

The total number of deaths for the year 1898 was 10,886, a decrease from the previous year of 268. The population, as estimated at the end of the year, is 541,827, which is based on the geometrical rate of increase between the last two census years, 1885–1895. The death-rate for the year, as calculated on this population, is 20.09 per 1,000 inhabitants. This rate is less by 0.99 than that of the previous year, and the lowest on record. There were 1,470 deaths from zymotic diseases, a decrease of 336 deaths from the same group of the previous year. There were 241 less deaths from diphtheria than in 1897, with a proportionate decrease in the number of cases. As usual, the diseases of the respiratory tract have proved again most fatal, causing fully 25 per cent. of the whole mortality during the past year. Of these, consumption, by which no doubt is meant tuberculosis of the lungs, heads the list, though even here the mortality is less than ever before, and shows a constant general decrease since the middle of the century. The contrary is true of pneumonia, heart disease and bronchitis, which each show a somewhat higher percentage of deaths than during previous years as far back as 1851.

The work of the Department has evidently been vigorously pushed in all directions. For example, the removal of fifty-eight dwellings unfit for habitation has been ordered during the past year, thereby removing a decided source of danger to the public health. It is expected that further authority will be given the Board to remove worn-out buildings which obstruct the light necessary for other buildings, and which foster and cover nuisances of various kinds, to the injury of surrounding property. The tenement house question has also received its share of attention, and improvements of various sorts have been instituted, particularly as regards overcrowding.

The milk supply question has been carefully studied with a view to the prevention of adulteration and pollution. A large number of rigid regulations has been passed which are likely to control the sale of milk, and prevent imposition on the part of the dealers. Elaborate blanks, with searching questions, are now required to be filled out by all milk producers, and by those applying for license to sell milk. These blanks must be filled out, returned and approved by the Board of Health before a license is issued to the contractor to bring into and sell milk in the city of Boston. A clean and healthful condition of cows, their enclosures, all vessels used for, and all persons who handle or deal in milk, its timely and proper cooling and general care, are needed and demanded in the interest of public health, and to this end carefully prepared and explicit instructions are being sent to all persons engaged in producing or handling milk intended for sale in Boston.

No doubt the most important work of the past year has been the establishment of a city bacteriological laboratory, under the management of a skilled director. This laboratory now holds itself in readiness to make examinations of various sorts, which modern medical diagnosis demands, and to serve, as well, as a centre where experimental work and research may be carried on. Speaking of the practical work of the laboratory, the director writes as follows:

"In March, 1898, the Bacteriological Laboratory was established in the Sudbury Building under the direction of Dr. Hibbert W. Hill. The necessary fitting up and equipment was begun at once. On the 10th of May the work done during three years past for the Board of Health at the Harvard Medical School was transferred to this laboratory, with the exception of the making of diphtheria antitoxin, the State Board of Health having agreed to continue the supply. The work consisted at that time principally of the diphtheria diagnosis, but has been gradually extended, so that at the present time regularly organized services exist for the diagnosis of typhoid fever, malaria and glanders also. Rabies cases are investigated, but this disease is not sufficiently prevalent to justify a detailed organization. Examinations for other pathogenic bacteria, such as pus-organisms, gonococci, the bacillus of influenza, etc., are made as may be required. The testing of disinfectants for municipal work is also part of the recognized work of the laboratory."

In general, this city document impresses one with a feeling of the greatest encouragement. Tuberculosis and diphtheria are gradually yielding to improved methods of treatment, and, more important even than that, are being reduced through knowledge of means of prevention. Other conditions, like pneumonia, still claim their victims each year in equal number, but there can be no doubt that etiological investigations carried out in a thoroughly accurate fashion will also lead to at least a partial prophylaxis before very many years have passed. After all, prophylaxis is the end toward which medicine must inevitably work, and our boards of health, as at present organized, are certainly doing much to hasten its more perfect application.

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MEDICAL NOTES.

RECEPTION TO DR. FLEXNER AND DR. CLARK. — The Medical Club of Philadelphia will give a reception November 3d, at the Hotel Bellevue, to Drs. Simon Flexner and John G. Clark, late of Johns Hopkins University and now of the University of Pennsylvania

Plague in Brazil. — Plague is reported as having made its appearance in Brazil, probably having come from Portugal.

Inoculation of British Troops. — It is said that the British troops mobilized for service in South Africa have been very generally inoculated against typhoid fever.

Congress on Hypnotism. — The second International Congress on Hypnotism will be held in Paris from August 12th to 16th, 1900, under the presidency of Dr. Jules Voisin.

Mark Twain on Christian Science. — Mark Twain contributes an amusing and disrespectful article on "Christian Science" to the October number of the *Cosmopolitan* magazine. The amazing speech habit of this cult is admirably paraphrased, one can hardly say burlesqued.

Amended Spelling. — The Department of Superintendence of the National Educational Association at its meeting in Indianapolis, Ind., February 17, 1898, appointed a committee consisting of Dr. Wm. T. Harris, United States Commissioner of Education, Washington, D. C., Dr. F. Louis Soldan, Superintendent of Schools, St. Louis, Mo., and T. M. Balliet, Superintendent of Schools, Springfield, Mass., to recommend a list of words with simplified spelling for use in the published proceedings of the department. The report of the committee was duly made and the spelling so authorized was used in the published proceedings of the meeting of the department held in Chattanooga, Tenn., February 22–24, 1898. At a meeting of the Board of Directors of the National Educational Association held in Washington, D. C., July 7, 1898, the action of the Department of Superintendence was approved and the list of words with simplified spelling adopted for use in all publications of the National Educational Association as follows: Program (programme), tho (though), altho (although), thoro (thorough), thorofare (thoroughfare), thru (through), thruout (througout), catalog (catalogue), prolog (prologue), decalog (decalogue), demagog (demagogue), pedagog (pedagogue).

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, October 25, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 72, scarlatina 38, measles 8, typhoid fever 24.

Boston Society of Medical Sciences. — A meeting of the Society was held at the Harvard Medical School, Tuesday, October 24th. Dr. G. Hay read a paper with the title "A Curious Relation between the Positions as given by Dr. Weiland, of Two Linear After Images, Studied in Connection with the Law of Listig, and the Corresponding Angles of Two Pairs of Great-Circle Planes, as given by Helmholtz." Dr. Thomas Dwight spoke on anatomical additions to the Warren Museum of the Harvard Medical School, with special reference to a series of spinal columns, showing more or less constant anomalies, sufficient, in his opinion, for a classification into definite groups.

Scarlet Fever at Waltham. — Scarlet fever is reported as having appeared in Waltham, Mass., which has led to the closing of one of the schools.

Lectures on Edible and Poisonous Fungi. — A course of six lectures, under the auspices of the Lowell Institute, will be delivered by Prof. William G. Farlow, of Harvard University, on Tuesdays and Fridays at 7.45 p. m., beginning Tuesday, October 24th, on "Edible and Poisonous Fungi and their Allies;" (1) General Characteristics of the Larger Fungi. (2) Basidiomycetes; Classification. (3) Mushrooms and their Allies. (4) Poisonous Fungi. (5) Morels and Truffles. (6) Esthetics of Fungus-eating.

NEW YORK.

State Care of Consumptives. — At a meeting of the Section on General Medicine of the New York Academy of Medicine held October 17th there was a discussion on "The State Care of Consumptives," which was opened by a paper by Dr. Alfred Meyer, in the course of which he gave an account of the Massachusetts State Hospital for Tuberculosis. On the list of speakers were Dr. Lawrence F. Flick, President of the Pennsylvania Society for the Prevention of Tuberculosis; Dr. Daniel Lewis, President of the New York State Board of Health; Edward T. Devine, General Secretary of the Charity Organization Society; Dr. Wm. H. Thomson, President of the New York Academy of Medicine; Dr. Vincent Y. Bowditch, of Boston; Dr. S. Solis Cohen, of Philadelphia; Dr. John H. Pryor, of Buffalo; Drs. George F. Shrady, Andrew H. Smith and J. W. Gleitsmann, and a number of other prominent physicians and officials of societies.

Typhus Fever. — The United States Commissioner of Immigration at Philadelphia recently notified the State Board of Health that seven persons who had landed from the steamer *Aragonia*, from Antwerp, among whose passengers a number of cases of typhus fever had developed, had come on to New York. The facts of the case were at once communicated to the City Health Department, and the latter has been able to trace all the individuals but one. It is stated that three have returned to Philadelphia and that the other three (all of whom are thus far in good health) are being kept under surveillance.

St. Luke's Hospital. — The reports read at the annual meeting of the Society of St. Luke's Hospital, which was held on October 18th, show that during the year ending September 30, 1899, 2,703 patients had been treated in the hospital, 507 of whom paid full rates, 234 paid part rates, and 1,862 were non-paying. The outlay for the year for charitable work by the hospital, and by its patrons through the hospital, was

$133,164, and the total expenses of the institution, $167.910. Gifts and donations for the endowment of the hospital were received to the amount of $227.750, but there was a deficit of current receipts to meet current expenses of $68,648. During the year Dr. William C. Campbell, one of the attending physicians, died, and Dr. Egbert LeFevre was elected to fill the vacancy thus caused.

Loomis Dispensary for Consumptive Incurables. — The Loomis Branch Hospital and Dispensary for Consumptive Incurables is said to be so badly in need of funds that it may have to be closed. While the Liberty Sanitarium (whose administration building was recently burned), which admits only incipient cases, charges from $12 to $25 per week for rooms, the work of the city branch for incurable cases is almost wholly charitable.

London's Insane as Compared with that of New York. — Recent statistics published by the London County Council show that the number of insane in the public asylums of the City of London constitutes a larger proportion of the population than is the case in New York State. The total number of insane is given at 14,000, while, according to the last report of the New York State Commission in Lunacy, the number of insane in the public institutions of the entire State, with a population nearly twice as great as London, is 21,000. The statistics also show a greater relative increase of the insane than in New York.

Lectures at the New York Skin and Cancer Hospital. — The governors of the New York Skin and Cancer Hospital announce that a series of clinical lectures on diseases of the skin will be given by Dr. L. Duncan Bulkley on Wednesday afternoon, beginning November 1st. The lectures will be given in the out-patient hall of the hospital, and are free to members of the medical profession.

Reception at the New York Academy of Medicine. — A reception given by the President and Council of the New York State Medical Association for Prof. William W. Keen, William Osler and Reginald H. Fitz, was held at the New York Academy of Medicine, October 25th. These gentlemen took a prominent part in the discussion on typhoid fever at the afternoon session of the Association that same day.

An Important Decision. — A case of considerable interest to medical men has recently been ordered to be retried by the Appellate Term of the Supreme Court. A bill of two homeopathic physicians, of $70 for the attendant, and $175 for the consultant (who made six visits), in a case of fractured elbow, was disputed by the patient, who was left with a stiff joint and interposed with a counter-claim for $500 damages for malpractice. In the Sixth Municipal Court the full amount of the bill was awarded the physicians. In giving his opinion in favor of reversal, Justice McLean, of the Supreme Court, concluded as follows: "There was no justification by custom or otherwise in plaintiff's employment of Dr. Roberts (the consultant) without a frank and full statement of the situation to the patient and the defendant (the patient's husband), and learning their wishes concerning the professional persons to be brought in. There cannot be properly applied to the facts shown here any custom multiplying ordinary professional charges five or ten times under the shield of a layman's ignorance, because it is subversive of justice that charges should be so largely increased by a custom not made known at all to the patient or to her husband."

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ARMY NOTES.

Hospital Accommodations, Medical Officers, Nurses in the Philippines. — On October 10th Chief Surgeon Woodhull cabled from Manila requesting that 20 medical officers and 30 female nurses be sent to the Philippines, adding that he could use twice as many. General Sternberg replied that 13 commissioned medical officers and 40 contract surgeons were already on their way to Manila, or under orders thereto; this being in addition to the regimental surgeons going with the newly organized volunteer regiments. The 30 female nurses asked for were immediately ordered and will leave New York on the several transports sailing early in November. The question of hospital accommodations in anticipation of the needs of the enlarged army in the islands has been settled by the erection of frame bamboo hospitals and the use of hospital tents. The preparations now being made by the medical department contemplate provision for 8,000 sick and convalescent. There are now in the Philippines nearly 2,000 hospital-corps men, a number of Chinamen being employed to act as litter bearers and to perform the heavier work. The number of enlisted hospital-corps men will be increased to 3,000 before the beginning of active hostilities.

Assistant Surgeon Wounded. — In the recent fight at Angeles on October 16th, Acting Assistant Surgeon H. Eugene Stafford, U. S. Army, received a wound of the breast, reported, however, as not being serious in character. This is the third instance in two weeks in which a medical officer has been wounded, showing that the medical men are keeping well up on the firing line with their combatant brethren, while at the same time their position as non-combatants is not respected by the insurgents.

United States Transport "Thomas." — The United States transport *Thomas*, the finest troopship afloat, is now fitting out in New York, preparatory to starting for Manila with volunteer troops. Including soldiers, officers, nurses and crew, she has accommodations for over 2,000 persons. For sleeping accommodations, she is fitted up with woven-wire mattress bunks arranged in tiers of three, providing in this way for 1,653 privates and non-commissioned officers. She is fitted out with an ice machine having a capacity of two tons daily and also a condensing apparatus having a capacity of 10,000 gallons a day. There is an outfit for the manufacture of aërated waters, a bakery, steam laundry and cold-storage plant. She is equipped with a large and well appointed hospital, having provision for the isolation of contagious cases.

Miscellany.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE, PARIS, AUGUST 3 TO 9, 1900.

The American Committee of the Thirteenth International Medical Congress met at the University Club, Philadelphia, October 21st, at 3 p. m., at the call of Dr. William Osler. Present, Dr. W. W. Keen, President of the American Medical Association (in the chair); Dr. Geo. M. Sternberg, Surgeon-General of the United States Army; Dr. Wm. K. Van Reypen, Surgeon-General of the United States Navy; Dr. Walter Wyman, Surgeon-General of the United States Marine-Hospital Service; Dr. Horace G. Miller, President of the American Otological Society; Dr. E. D. Fisher, President of the American Neurological Association; Dr. Geo. Engelmann, President of the American Gynecological Society; Dr. H. W. Stelwagon, President of the American Dermatological Association; Dr. Samuel Johnston, President of the American Laryngological Association; Dr. R. F. Weir, President of the American Surgical Association; Dr. A. Jacobi, President of the American Climatological Association; Dr. E. G. Janeway, President of the Association of American Physicians, and Dr. Henry Koplik, President of the American Pediatric Society.

Letters of regret at inability to attend the meeting were reported from Dr. H. P. Bowditch, President of the Congress of American Physicians and Surgeons (absent in Europe); Dr. O. F. Wadsworth, President of the American Ophthalmological Society; Dr. James Bell, President of the American Association of Genito-Urinary Surgeons; Dr. H. M. Sherman, President of the American Orthopedic Association; Dr. R. H. Chittenden, President of the American Physiological Society; Dr. B. G. Wilder, President of the Association of American Anatomists; and Dr. B. Holly Smith, President of the American Dental Association.

Dr. Osler stated that in May he had received instructions from the Secretary of the Congress in Paris to organize the American National Committee. After consultation with Dr. W. W. Keen, the President of the American Medical Association, and Dr. H. P. Bowditch, the President of the Congress of American Physicians and Surgeons, he had nominated as members of the Committee the Presidents of the American Medical Association, of the Congress of American Physicians and Surgeons, and of the constituent societies composing the same, the Surgeons-General of the Army, of the Navy, and of the Marine-Hospital Service, and, at Dr. Keen's suggestion, the President of the American Dental Association.

Dr. Sternberg moved, seconded by Dr. R. F. Weir, that the American Committee of the Thirteenth International Medical Congress consist of the gentlemen just named. Carried.

Dr. Osler then read the following letter of instruction, which he had received from Dr. Chauffard, the General Secretary:

Honored Colleague:

I have the honor to state that I have sent you (1) a package of subscription blanks ("Forms of Adhesion"); (2) some account books with stubs.

1. *Subscription blanks* ("*Forms of Adhesion*").— Please distribute these blanks as widely as possible, sending them to universities, hospitals, learned societies, in a word, wherever you deem it possible to obtain subscribers to the Congress.

We have thought it wise to prepare these blanks in such form that they may be of a uniform type for all countries, which will facilitate the task of classification of the members.

Please insist that your fellow-countrymen conform to all the directions which are therein contained. Pray distribute, together with our subscription blanks, announcements of your own, indicating the name and address of the representative of your committee to whom the subscribers in your country should address the subscription blanks when filled, as well as the corresponding funds. These subscription blanks should be collated by you and sent to us in groups of fifty, with the visiting cards and the corresponding stubs of the record book (*vide infra*).

It is then understood that these blanks constitute simply a sort of propaganda, and that we shall consider as members of the Congress only those gentlemen who shall have sent to your committee the amount of their subscription, and shall have received in exchange the receipt from your account book (leaflet C).

2. *Account books.* — The three account books which we have sent you (series 171 to series 173) represent each fifty subscriptions to the Congress. We would call your attention especially to the detailed directions which appear on the first page of the book.

The stubs of this book (leaflets A and B), which serve us at the same time for registration of the members and for our financial accounts, we beg you to fill out as legibly as possible, and not to forget to place the stamp of your committee at the point indicated on each of the three leaflets. This stamp will eventually indicate to us the origin of each inscription.

This is but the first instalment, and we shall be able to send you, if it be necessary, new account books as soon as you may request them. We beg you to send us the stubs as soon as each of the account books is filled, together with the amount of the corresponding subscription and the filled subscription blanks.

We trust that these account books will facilitate the laborious task in which you have kindly lent us your assistance. Pray understand that we are entirely at your service to furnish you any further explanations which you may desire concerning our registration of members.

Yours, etc.,

A. Chauffard, *Secretary-General.*

It will thus be seen that the work of each national committee of this Congress is very different from that heretofore intrusted to them. Physicians in this country who wish to become members of the Congress must apply to the Secretary of the National Committee, who will forward a blank of application, which is to be filled in and returned to the Secretary, with a fee of five dollars.

Dr. Janeway moved, seconded by Dr. Wyman, that Dr. Osler be empowered to appoint a physician as secretary to the Committee, and to secure such aid as would be required to carry on the work. The question of meeting the expenses of the Committee was left to the chairman. If each national committee is expected to meet its own expenses, it was agreed either to call upon the treasurers of the societies represented in the committee, or upon the individual members.

It was moved by Dr. Engelmann, seconded by Dr. Stelwagon, that the medical journals of the country be requested to aid in making known as widely as possible the conditions under which registration in the Congress may be effected.

While it is to be understood that the Central Committee wishes the subscriptions to be sent to the Secretary of the National Committee, Rule 3 of the Congress provides that persons wishing to be members may forward their subscriptions to the Treasurer-General of the Congress.

Dr. Osler announced that he would nominate Dr. Henry Barton Jacobs, 3 West Franklin Street, Baltimore, Md., as Secretary of the Committee, to whom all applications for blanks should be sent.

PERFORATION IN TYPHOID FEVER; OPERATION; RECOVERY.

In the *Lancet* for October 16th Dr. Herbert P. Hawkins and Dr. E. O. Thurston report a case of perforation in typhoid fever, with complete recovery after operation. The patient was a child of eleven, who, at about the fortieth day of her illness, gave unmistakable signs of perforation and peritonitis. The operation was done at once and a perforation found on the anterior cecal wall. The writers give the following description:

"The orifice was about one-eighth of an inch in diameter; it was surrounded by a zone of indurated tissue, and through it a little gas was escaping. A thin layer from the margin of the aperture was excised. It was then closed by a row of Lembert sutures, which produced good inversion of the edges, and a few reinforcing sutures were also passed."

Improvement was slow, but, in general, progressive. Two and a half months after the operation the temperature became normal, and now, a year after the onset of the illness, the patient is well, and has no sign of abdominal disease.

Correspondence.

DR. ROSSE ON GOLF.

Washington, October 16, 1899.

Mr. Editor: — The article reproduced from the *Medical Press*[1] being somewhat misleading, kindly allow me to say that I plead guilty to being addicted to the "ways and habits" of my Anglo-Scotch ancestry, which is the natural outcome of heredity and mesological circumstances rather than of any affectation on my part.

I cannot say, however, that I am "evidently new to the game and know little of its history," since a considerable residence in Edinburgh as far back as 1875 made me more or less familiar with golf long before it became a fad in the United States, or even south of the Tweed, as for that matter, while the bibliography has claimed more than usual personal attention for a number of years in such places as the British Museum, the Library of Congress, and the Library of the Surgeon General's Office in Washington.

At the time my paper was written, some two years ago, I could not find after diligent search other than the most meagre reports of golf accidents, such as callosity of the palms of the hands, and of gluteal strain in beginners owing to unaccustomed attitude and unskilful mode adopted in "driving." I learned, however, of a golf fatality at Dumfries, Scotland, the subject being a lad of thirteen, who was struck on the head by a player. Since then I have investigated a few cases of so-called "golf-elbow," which appear to be a nervous affection classed with copodyciuesia, and having no more relation to golf than hephistic paralysis, piano-player's cramp, or the "Charley horse" of baseball players. Cases of "trigger finger" attributable to golf may also be placed in the doubtful category, since the majority of persons thus affected do not play golf, and indeed the last case I saw was in a naval officer who is not a golfer.

Having spent the last winter in London, I learned of a fatal accident to a swallow from a golf ball that had been driven into a flock happening to pass by. Another golf ball, driven with great impetus from the "tee," killed a sheep up in Scotland, and a medical friend tells me of a golf fatality to a person in this country, but the particulars he was able to furnish as to time, place, and the like, being about as meagre as serious accidents from golf are infrequent, I mention the occurrence merely for what it is worth.

Irving C. Rosse, M.D.

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[1] Boston Medical and Surgical Journal, October 12, 1899.

DR. BRIGHAM'S EXTIRPATION OF THE STOMACH.

San Francisco, Cal, October 16, 1899.

Mr. Editor: — I think that you will be pleased to hear of the continued wellbeing of Mrs. Maggini, the patient whose stomach I removed.[1] It is now nearly twenty months since the operation and there is no sign of a recurrence of the disease (carcinoma). Since she left the hospital there has been no restriction whatever as to her food. She eats what she pleases, she keeps house herself, visits her relatives and friends, takes her grandchildren to ride in the cars, and a short time ago when the California troops came home from Manila she witnessed the parade, her face beaming with pleasure. That evening the entire city was illuminated, and after driving around the streets she returned home at half-past one in the morning, feeling none the worse for the excitement. Last month I sent her some trout from Lake Tahoe, and her daughter wrote: "Mother says that since she left the old country (Switzerland) she has never tasted fish that was so sweet and delicious; it seemed as if she were back there once again." Last spring she weighed 110 pounds; she now weighs 112 pounds — a slight gain during the summer. She is now in her sixty-eighth year.

Very truly yours,

Charles B. Brigham, M.D.

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[1] Boston Medical and Surgical Journal, May 5, 1898.

METEOROLOGICAL RECORD

For the week ending October 14th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....8	30.22	48	54	41	79	83	81	N.W.	E.	4	10	O.	F.	
M...9	30.06	52	54	50	98	95	96	N.E.	N.	14	8	T.	O.	.55
T...10	30.25	55	61	49	92	82	87	N.W.	S.	6	4	O.	C.	
W..11	30.27	56	66	46	96	86	91	W.	S.W.	6	11	G.	F.	
T...12	30.18	64	70	59	89	78	84	W.	S.W.	5	8	O.	C.	
F...13	30.28	60	66	54	86	93	90	N.	E.	4	6	O.	C.	
S...14	30.30	64	77	52	94	85	90	S.W.	S.W.	7	16	O.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, October 14, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	—	—	—	—	—	—	—
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	186	59	14.58	15.66	3.24	4.32	5.40
Baltimore	506,389	204	—	13.23	9.80	4.41	1.96	5.39
Cincinnati	405,000	98	—	6.00	11.00	—	—	2.00
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	108	35	23.00	3.68	9.20	8 28	2.76
Washington	277,000	139	32	22.32	8.64	5.04	9.36	7.20
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	53	21	16.72	16.92	11.28	1.88	1.88
Nashville	87,754	31	8	22.61	6.46	3.23	9.69	—
Charleston	65,165	27	3	22 20	11.10	18.50	—	—
Worcester	111,732	34	17	17.64	8.82	—	2.94	8.82
Fall River	103,142	—	—	—	—	—	—	—
Cambridge	92,520	28	10	21.42	3 57	3 57	—	14.28
Lowell	90,114	34	12	11.76	11.76	8.82	—	2.94
New Bedford	70,511	17	8	5.88	17.61	5.88	—	—
Lynn	68,218	—	—	—	—	—	—	—
Somerville	64,394	—	—	—	—	—	—	—
Lawrence	59,072	13	11	—	6 79	—	—	—
Springfield	58,266	21	7	33.33	4.76	4.76	—	23.80
Holyoke	44,510	17	5	17.64	17.64	5.88	—	5.88
Brockton	38,759	4	1	25.00	—	—	—	25.00
Salem	37,723	12	7	8.33	—	—	—	8.33
Malden	36,421	10	4	—	—	—	—	—
Chelsea	34,235	5	1	20.00	—	—	—	—
Haverhill	32,651	6	2	16.66	16.66	—	—	16.66
Gloucester	31,426	—	—	—	—	—	—	—
Fitchburg	30,523	5	—	20.00	—	—	—	—
Newton	30,461	13	5	6.79	6.79	6.79	—	—
Taunton	28,527	13	4	6.79	20.37	6.79	—	—
Everett	28,102	6	2	50.00	16.66	—	—	33.33
Quincy	24,578	6	3	50.00	—	—	33.33	—
Pittsfield	23,421	3	—	—	66.66	—	—	—
Waltham	22,791	2	—	—	50.00	—	—	—
North Adams	21,583	7	1	—	14.28	—	—	—
Chicopee	18,316	7	5	14.28	—	14.28	—	—
Medford	17,190	2	1	—	—	—	—	—
Newburyport	15,036	1	—	—	—	—	—	—
Melrose	14,721	2	—	—	—	—	—	—

Deaths reported 1,130; under five years of age 270; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 182, consumption 117, acute lung diseases 80, diphtheria and croup 57, diarrheal diseases 49, typhoid fever 47, cerebro-spinal meningitis 13, whooping-cough 7, scarlet fever 3, malarial fever 3, measles 2, small-pox 1.

From whooping-cough Boston and Pittsburg 2 each, Washington, Providence and Nashville 1 each. From cerebro-spinal meningitis Baltimore, Cincinnati, Worcester and Amesbury 2 each, Boston, Charleston, Cambridge, Springfield and Quincy 1 each. From scarlet fever Cincinnati, Holyoke and Chelsea 1 each. From malarial fever Nashville 2, Baltimore 1. From measles Cincinnati and Pittsburg 1 each. From small-pox Everett 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,404,408, for the week ending September 30th, the death-rate was 19.1. Deaths reported 4,186; acute diseases of the respiratory organs (London) 156, diarrhea 411, diphtheria 95, fever 84, whooping-cough 61, measles 33, scarlet fever 27, small-pox (Hull) 1.

The death-rates ranged from 12.6 in Bedford to 27.9 in Preston; Birmingham 23.0, Bolton 22.5, Cardiff 16.6, Gateshead 20.1, Hull 25.8, Leeds 20.1, Liverpool 26 5, London 16 7, Manchester 25.1, Newcastle-on-Tyne 23.3, Nottingham 21.3, Portsmouth 17.8, Sheffield 24.5, West Ham 16.3.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending October 7th, the death-rate was 18.8. Deaths reported 4,104: acute diseases of the respiratory organs (London) 215, diarrhea 233, diphtheria 113, fever 80, measles 45, whooping-cough 42, scarlet fever 22.

The death-rates ranged from 12.1 in Swansea to 25.3 in Salford; Birmingham 20 4, Bradford 16.3, Cardiff 16 3, Gateshead 17.1, Huddersfield 13.6, Leeds 19.1, Liverpool 24.7, London 17.9, Manchester 24.0, Newcastle-on-Tyne 24.2, Nottingham 17.4, Portsmouth 16.9, Sheffield 22.4.

SOCIETY NOTICE.

Suffolk District Medical Society, Surgical Section. — The Surgical Section will meet Wednesday evening, November 1st, at 8 o'clock, in Lecture Room C of the Harvard Medical School.

Dr. J. C. Warren will demonstrate on the cadaver "Allis's Method of Reducing a Dislocation of the Hip," and will show a "Dissection of the Shoulder Explaining the Action of Kocher's Method."

Dr. F. B. Lund: "A Case of Perforating Gastric Ulcer; Operation; Recovery."

RECENT DEATHS.

Isaiah Hutchins, M.D., M.M.S.S., died in West Acton, August 8, 1899, aged sixty-nine years.

James Augustin McLaughlin, M.D., M.M.S.S., of Boston, died September 8, 1899, aged eighty-five years.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 21, 1899.

O. D. **Norton**, surgeon, detached from the "Badger" when put out of commission and ordered to temporary duty on the "Ranger"; on arrival at the Asiatic Station ordered to the "Monadnock."

L. L. **Young**, passed assistant surgeon, ordered to be examined at the Mare Island Navy Yard, October 24th, chapter 15, title 3, thence home and to wait orders.

J. **Stoughton**, passed assistant surgeon, detached from the "Monadnock," when relieved, and ordered to the "Bennington."

J. J. **Snyder**, assistant surgeon, ordered to the "New Orleans," October 18th.

D. G. **Beebe**, assistant surgeon, detached from the "Bennington," when relieved, and ordered to the "Ranger."

J. C. **Rosenbleuth**, passed assistant surgeon, detached from treatment at the Naval Hospital, Chelsea, Mass., and granted sick leave for one month.

R. W. **Plummer**, assistant surgeon, detached from the hospital, New York Navy Yard, and ordered to temporary duty on the "New Orleans" for passage to the Asiatic Station.

H. D. **Wilson**, passed assistant surgeon, directed to proceed home and to wait orders. Order of October 17th modified; detached from duty on the "Solace."

H. T. **Percy**, surgeon, detached from the "Olympia," when put out of commission, and ordered home and to wait orders.

D. H. **Carpenter**, assistant surgeon, detached from the "Olympia," when put out of commission, and ordered home and to wait orders.

A. **Hammar**, pharmacist, detached from the "Olympia," when put out of commission, and ordered to the Mare Island Navy Yard.

E. **Thompson**, assistant surgeon, detached from the "Manila" and ordered to the "Celtic."

W. E. **High**, assistant surgeon, detached from the "Celtic" and ordered to the "Manila."

H. H. **Haas**, assistant surgeon, detached from treatment at Naval Hospital, Yokohama, Japan, and ordered to the "Baltimore."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING OCTOBER 20, 1899.

Wasdin, Eugene, surgeon. To proceed to Berlin, Germany, for special temporary duty. October 13, 1899.

Wertenbaker, C. P., passed assistant surgeon. To proceed to Montezuma, Ga., for special temporary duty. October 13, 1899.

Decker, C. E., assistant surgeon. Relieved from "waiting orders" and placed on duty to date from October 7, 1899. October 11, 1899.

APPOINTMENT.

Frank Boyd, of Kentucky, to be acting assistant surgeon, for duty at Paducah, Ky. September 27, 1899.

BOOKS AND PAMPHLETS RECEIVED.

The Forcible Straightening of Tubercular Kyphosis, with Second Report of First Three Cases: also Report of Three Subsequent Cases. By Justin Kay Toles, Los Angeles, Cal. Reprint. 1899.

The Treatment of Pelvic Inflammations through the Vagina. By William R. Pryor, M.D., Professor of Gynecology, New York Polyclinic, etc. With 110 illustrations. Philadelphia: W. B. Saunders. 1899.

Claude Bernard. By Michael Foster, M.A., M.D., D.C.L., etc., Secretary of the Royal Society of London; Professor of Physiology in the University of Cambridge. New York: Longmans, Green & Co. 1899.

Original Articles.

ACUTE ABDOMINAL SYMPTOMS DEMANDING IMMEDIATE SURGICAL INTERVENTION.[1]

BY MAURICE H. RICHARDSON, M.D., BOSTON.

(Concluded from No. 17, p. 408.)

The bacteriology of acute abdominal lesions, as suggested by the temperature, has, I believe, an interesting and valuable future. As far as interpretation of signs goes, little more can be said than what I have already outlined.

Rigidity is a symptom of great value in the early hours of acute abdominal lesions. More than any other one sign, rigidity, accompanying pain, confirms the fear of a peritoneal infection. It may be extreme and extensive; it may be limited to one-half the abdomen. It always means an involuntary effort at protection to parts beneath. When accompanied by tenderness this symptom has a greatly increased value, for rigidity is sometimes involuntary in the well.

Tenderness is of great importance. In many cases it is general when the cause is strictly local. In appendicitis, for instance, a general tenderness accompanies a local infection, though the tenderness, like the pain, quickly becomes localized.

An increase in the area of tenderness and rigidity is always alarming, especially if accompanied by distention. Distention is a symptom which demands intervention when preceded or accompanied by other signs of severe abdominal lesions. This sign is ominous of general peritonitis.

This discussion, it must be remembered, is rather of the incipient and curable lesions than of the fully established and hopeless. I may say in passing, however, the latter are so easily recognized that there is little hesitation in deciding the question of operation. It is hoped that the time is not far distant when the significance of symptoms will be apparent long before distention and other glaring signs have had time to appear.

To return to the initial hours of these fatal diseases, we must now consider the significance of nausea and vomiting. In practically all of them pain is accompanied by vomiting. After operation, no symptom can be more ominous; with many acute lesions, none can be more suggestive. Unfortunately for the rating of its value, hardly any acute abdominal disease, no matter how trivial it may be, is, at one time or another, without it. It is therefore difficult to estimate the value of vomiting. As a symptom by itself it means nothing; with pain and diarrhea it means little; with symptoms of abdominal infection it too often means impending death. At the inception of organic lesions requiring surgical treatment, the contents of the stomach alone are vomited; in acute infection the contents first of the upper bowel; later, of the lower coils. In general infections the vomitus is coffee-colored. Violent retching is less to be feared than easy regurgitation. On the whole, vomiting is a confirmatory, not a positive, sign. Pain, nausea, vomiting, rigidity, tenderness, shock followed by reaction, are conspicuous in the early hours of acute abdominal lesions, and when seen together usually demand immediate intervention.

The diagnosis in the initial stages is generally doubtful; indeed, one object in this paper is to consider the value of symptoms alone as a guide to intervention; for, with a positive diagnosis, the treatment of many, if not all, abdominal lesions has been clearly determined. It is the fear of subjecting the patient to an unnecessary operation, which may be fatal, that makes the surgeon hesitate in coming to a decision; yet, when I weigh the few deaths from unnecessary intervention with the hundreds from unnecessary delay, it seems to me that we must be on our guard lest this fear influence us unduly. Unfortunately, one death in a community from an unnecessary operation is so conspicuous, its effects so disastrous both to surgery itself and to the surgeon, that one cannot easily exaggerate the gravity of such a mistake.[3] On the other hand, a necessary operation not performed, a withholding of perhaps the only chance, sacrifices a life just the same; but the effect in the community is comparatively slight, the influence upon surgery and upon the surgeon comparatively insignificant. I emphasize this feeling because from experience I have known its great force.

When we have sudden abdominal pain, with shock, rising pulse, lowered temperature, pallor, restlessness, thirst, especially in a woman of child-bearing age, we must suspect hemorrhage unless the history and physical signs suggest some other lesion. Irregularity in menstruation, changes in the breasts, add probability to the diagnosis of extra-uterine pregnancy. In males abdominal hemorrhage is so rare, that, occurring in perfect health, symptoms pointing to hemorrhage can suggest only a ruptured vein or artery, an intestinal or gastric ulcer. Arising in the course of typhoid fever, or other diseases, hemorrhage causes no pain. The chief symptom is falling or subnormal temperature.

After abdominal operations, in the course of gastric disorders, concomitant with injuries, these signs cannot be misunderstood.

Pain, nausea, vomiting, tenderness, rigidity and shock, occurring without signs of hemorrhage, especially in males, suggest, first, appendicitis, if the pain is epigastric. If it becomes quickly localized in the right iliac fossa, appendicitis is almost surely the lesion; indeed, if one should assume that doubtful lesions were appendicitis, he would be right in the great majority of cases. If the attack has been preceded by history of gastric disturbances, one must be on the lookout for perforating gastric ulcer; if by a history of gall-stones, an acute cholecystitis. The other rare epigastric lesions may be eliminated from their very rarity; the localization of pain above the umbilicus will guide the exploring knife into close proximity with the lesion.

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[1] An oration before the Maine Medical Association, June 8, 1899.

[3] To illustrate the difficulties of diagnosis and the mistakes that may occur in the interpretation of symptoms, to emphasize the harm that may be done by unnecessary exploration, I would recall the remarks with which I prefaced the reading of this paper. Referring to the importance of the subject, the frequency of disaster, the loss of precious time, for which the physician too often is responsible, I mentioned a case which I had examined the night before leaving Boston. This was the case of a man of forty-eight, who four weeks before had received a simple fracture of both bones of the left leg. The day following the application of plaster, May 30, 1899, three weeks after the accident and eight days before my examination, June 7, 1899, he was seized with severe pain in the region of the diaphragm on the right side. In thirty-six hours the pain moved to the same level on the left side. The respiration was 35, the temperature 100°, the pulse 106. He was supposed to have pneumonia. Two days before my visit he began to vomit,—at first greenish fluid, then black, then black mixed with bright blood. The abdomen became excessively distended. The attending physician felt a mass on June 5th in the right hypochondrium. I found the abdomen very much distended, and everywhere tympanitic. There was no dulness or tumor in the tender and painful epigastrium. He was regurgitating black vomitus at frequent intervals. The temperature was 100.4°, the pulse 148, of poor quality. Some gurgling was heard in the intestine. In front nothing abnormal could be detected in the lungs. It was impossible to examine the back.

Here was a man showing acute abdominal symptoms to a marked degree — vomiting, distention, tenderness, with extreme constitutional depression, a history of diaphragmatic pain, rigidity and tumor coming on three weeks after a simple fracture of the leg. The lesion was supposed at first to be pulmonary until the symptoms became conspicuously abdominal. In referring to this case I said that it was an illustration of the importance of the subject which I had selected. A robust man, comparatively young, was dying with acute abdominal symptoms, which, had we known enough, might have been prevented by early intervention. On my return to Boston I found that the man had died on the following day. At the autopsy it was found that *the abdomen was perfectly normal*. The cause of death was multiple infarction of the lungs. Had the patient's strength permitted, I should have opened the abdomen, expecting to find some lesion above the navel — an acute pancreatitis or a subphrenic abscess. I have seen three cases of acute abdominal pain suggesting acute appendicitis in which the lesion was pneumonia. Excepting the foregoing case, they all occurred in children.

Pain beginning low down in the abdomen in women suggests, first, some acute lesion of the pelvic viscera, chief among which is salpingitis. With a history of previous pelvic pain, abortion, miscarriages, uterine inflammations, gonorrhea, the tubes may be suspected, though the appendix is very frequently the real seat of the lesion, especially if the symptoms incline rather to the right side than to the left. Under ether, the exact pelvic condition can often be recognized. Fortunately, no mistake is likely to occur if the incision is made well to the right side through the rectus.

Pelvic symptoms caused by ovarian tumor with twisted pedicle can usually be clearly distinguished, even without ether, though at times the diagnosis is difficult.

In cases of ruptured abscesses, of injuries, and of gunshot wounds, a previous history will point with more or less certainty to the lesions. It is not so difficult, therefore, in many cases, even in the earliest hours of an emergency, to give a good guess as to the probable lesion.

When the symptoms are chiefly those of acute obstruction, the diagnosis is much more indefinite, for many of the manifestations of acute sepsis suggest acute obstruction. Even in the early hours, the intestinal movements may be entirely suppressed, and vomiting of the contents of the stomach and upper bowel may suggest in the strongest way an acute intestinal obstruction. This may occur even before a general infection has taken place. Whatever we may say, from theory, as to the impossibility of the early symptoms of extravasations resembling those of an acute obstruction, it must be replied that experience abundantly teaches that this resemblance not only occurs, but it may be so exact as to make discrimination between a beginning sepsis and an acute obstruction impossible. Were it possible so to discriminate in the early hours discussion would be unnecessary — one would know just what to do and when to do it.

Symptoms really caused by obstruction are among the most ominous and urgent, if only their weight can be measured. Acute obstructions, due to lesions necessarily causing gangrene, differ at first very little from those dependent upon less serious causes; but the former must be operated upon at once, the latter may wait a considerable time.

In general, the pain of obstruction is paroxysmal and intermittent. Shock may be slight, fever is absent. Vomiting is excessive. These signs rapidly increase in severity in both forms of obstruction. To them are added the symptoms of beginning gangrene — local and general infections usually fulminating and rapidly fatal.

In the initial stages the chances favor obstruction if the pain continues paroxysmal and localized. If distention ensues, and if resistant coils can be felt, if vomiting becomes rapidly stercoraceous, if signs of sepsis supervene, the chances favor an intestinal strangulation, an intussusception, a volvulus, or a mesenteric embolism or thrombosis. With pain still localized, with resistant coils, a history of previous slight attacks and loss of flesh, and with symptoms of simple obstruction, the trouble is, on the chances, the plugging of a small stricture; a stricture which, if the patient is young, is probably simple or tubercular; if middle-aged or old, cancerous. The mechanical obstructions without sepsis, however, may and often do go on for days without serious results. Little is lost by delay. In the acute necrotic processes, however, recovery is possible only in the very earliest hours. Even to-day, when we recognize such lesions as intussusception early, the mortality is excessive.

When we have symptoms of acute obstruction which do not point even indefinitely to the lesion, when, for instance, the pain is epigastric, the vomiting excessive, the obstruction complete, it is impossible to determine the lesion. It would perhaps be a wise rule in such cases to adopt the theory that the lesion is probably the commonest one, and to act upon it, and in the absence of distinct localizing signs to consider all acute cases in the male as appendicitis; in the female, as having their origin in the pelvic organs. This would be by no means a bad rule, if the incisions were made in the right rectus, whence both appendix and pelvic organs could be easily reached.

Though it is often impossible to localize a lesion exactly, it is highly important to place it in the right or the left, the upper or the lower part of the abdomen. As a broad statement, emergencies in the male are right-sided, in the female, below the umbilicus.

Whatever may be said as to the ease of even so indefinite a localization, its importance cannot be exaggerated. To open the abdomen in the left upper quadrant, and to find an acute appendicitis in the right lower; to make a prolonged search of pelvic viscera, and to find an acute cholecystitis; to hunt for a stricture at the ileocecal valve and find one at the splenic flexure — these are some of the mistakes that I can recall in which valuable time was lost. I do not now see how the error could have been avoided, however. Yet in most instances some localizing sign will be present, as shown by the great number of cases in which the exploring finger goes straight to the mark. When there is absolutely nothing to guide us except obscure abdominal symptoms which demand immediate attention, the median line below the umbilicus must be the place chosen for incision, because it is in the lower half of the abdomen that the great majority of acute lesions are situated.

From the foregoing considerations it seems clear that abdominal hemorrhage, sepsis, obstruction suddenly occurring in the apparently well, indicate exploration as soon as positive symptoms are plain, and that at this early period intervention promises success. Acute symptoms occurring in the course of well-recognized diseases likewise may demand immediate operation. Acute symptoms observed for the first time when the lesion which causes them is well advanced often require intervention, though the outlook may be almost hopeless.

Though certain groups of acute symptoms demand immediate intervention, certain others contraindicate it. I have already mentioned those which show that delay seems on the whole the better plan. It may, however, be well to repeat here the indications for delay. They, of course, apply only to conditions which permit cure under palliation and to not essentially fatal lesions, like acute obstructions and thrombosis. When these lesions are present, the symptoms are always progressive and can hardly be mistaken. Symptoms, however, which show that a peritonitis is evidently successfully localized and subsiding, or that a hemorrhage is arrested, indicate delay, because a more favorable time for intervention will be found by waiting. This is especially the case in suspected appendicitis, because the large majority of patients will recover under medical treatment, and will safely undergo operation in the interval. Moreover, the interval operation presents features not only of safety but of great local advantage — small scar, unweakened abdominal wall — which, it seems to me, justify the slight danger of delay in cases that are improving. I am convinced that many an operation in acute appendicitis is directly fatal by itself, converting a localized into a general infection. Symptoms, therefore, which indicate a decided subsidence in the attack, whether appendicitis or some other local infection be suspected — acute inflammation of the gall-bladder, for example — should be watched for further improvement. If the expected improvement does not come, if things are at a standstill, if after getting better they tend to get worse, then operation is imperative, in spite of its great dangers.

In hemorrhage from extra-uterine pregnancy delay is a great advantage if it can safely be advised, because operations in profound shock are to be avoided when possible. A rising temperature and a falling pulse, with returning color and subsiding pain, indicate an early return of strength, when operation will be almost without doubt successful. When things are at a standstill or getting worse, an infusion of salt solution and an operation of extreme rapidity are demanded. In cases of doubt exploration is indicated. A small incision will show whether the surgeon is on the right track or not, for the moment the peritoneum is nicked, the escape of serum in sepsis, or of blood in hemorrhage, will indicate the necessity for further search. Free fluid, either serum, pus, or blood, is always present in the acute lesions under discussion. Should no serious disease be found, the chances of recovery are but slightly lessened. For one unnecessary operation, a hundred necessary ones would be performed; for one life lost, a hundred would be saved.

What is to be the teaching in the treatment of these emergencies? Shall we advise that when symptoms demand intervention any one shall operate, whatever his experience may have been? After prolonged consideration of this subject, and after years of almost daily observation, I feel that, on the whole, the cases under consideration are best treated medically if the operation is to be in the hands of the totally inexperienced. I say with reluctance, but without hesitation, that unless the operator can bring a certain amount of experience to his aid, experience either in operating himself or in seeing others operate, unless he has been well trained in aseptic surgery, he will have a smaller mortality if he treats acute abdominal lesions medically than if he treats them surgically. Each community should have its experienced surgeon, and to him should be referred the cases both as to diagnosis and as to treatment. Small communities and thinly settled districts do not provide opportunities for a very great experience even if concentrated upon a single man. Many physicians are so situated that from the nature of their surroundings they can never gain that familiarity with abdominal diseases and abdominal surgery which justifies them, except perhaps, in the rarest instances, in opening the abdomen. Operations which beforehand we think will be extremely easy sometimes prove excessively difficult. The plainest case may unexpectedly demand, as the patient's only chance of recovery, resources of skill and daring which only years of experience can give — an apparently simple appendectomy may require resection of the ileocecal valve; a simple ovariotomy, the most difficult and dangerous dissection. Furthermore, these complications usually require the operator to proceed, whatever the difficulties and dangers may be, for to abandon the operation is to abandon the patient to certain death, — operations attended by hemorrhage which can be checked only by complete and rapid extirpation of a tumor; resection of intestines, demanded by contiguous and infiltrating growths; repair of wounded intestines; immediate recognition and control of unexpected and perhaps deeply seated hemorrhage — these are a few examples of the common emergencies which the operator may meet. An experienced man can usually meet them successfully, but occasionally conditions unexpectedly occur which tax the ingenuity and resources of the most experienced — desperate conditions in which something must be done, and there is no time to think; death is a question of seconds. Amid such thrilling complications every operator sooner or later will find himself; the broader his experience the less the likelihood that they will be of his own making and the greater the ease with which he will overcome them.

The plain duty of him who first observes symptoms suggesting acute and serious abdominal lesions is to lose no time. He must determine the probable nature of the lesion and suggest the proper remedy. If he has not the requisite experience in operating, he should call to his aid one who has this experience, and he should call the one nearest at hand: the two together should discuss the possible lesion and the probable prognosis. They should decide as quickly as practicable the question of intervention, whether the diagnosis be made or not. Exploration, if decided upon, may then be conscientiously undertaken, and the result, whatever it may prove, can be attended by no just cause for regrets.

CARCINOMA UNDER THE AGE OF THIRTY.

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

Although carcinoma, generally speaking, is a disease of middle life, statistics have been able to demonstrate that a certain number of cases occurring in early life certainly do arise, and the object of this paper is to report three cases of this disease occurring in individuals under the age of thirty and to report a few cases gathered from the general medical literature. We have recently received, in reply to our inquiry, a letter from our friend, Dr. von Glasser, in which he has been good enough to compile the following table regarding the ages of 527 patients afflicted with carcinoma and on whom an autopsy was performed at the

Pathological Institute of the University of Erlangen from 1862–1893.

Under 20 years of age	1 case	= 0.19%
Between 20 and 30 years of age	16 cases	= 3.30 “
“ 30 and 40 “ “	47 “	= 8.90 “
“ 40 and 50 “ “	105 “	= 19 30 “
“ 50 and 60 “ “	143 “	= 27.10 “
“ 60 and 70 “ “	149 “	= 28.30 “
“ 70 and 80 “ “	58 “	= 11.00 “
“ 80 and 90 “ “	8 “	= 1.50 “

Carcinoma has been rather frequently found afflicting the ovary of young women or even girls, and Olshausen, in his “Handbuch für Frauenkrankheiten,” Vol. II, page 434, relates cases occurring in subjects aged respectively twelve, nineteen, twenty-one, twenty-three and twenty-nine years. Out of 48 cases of carcinoma of the ovary he found 16 in subjects under thirty years of age. Leopold reports cases of carcinoma of the ovary in patients aged respectively twelve and one-half, fourteen, seventeen, nineteen and nine months, twenty, twenty-one, twenty-three and twenty-six years, and in another case of a twenty-four-year-old girl the disease was present in both organs.

In a recent book entitled “Études de gynecologie operatoire,” by Dr. Phocas, of Lille (Paris, 1899), are to be found five cases of carcinoma of the ovary in children varying in age from seven to fifteen years.

Schroder, on page 341 of his “Lehrbuch der Frauenkrankheiten,” gives 83 instances of carcinoma of the uterus under thirty years out of 2,265 cases, and out of 492 cases of carcinoma of the uterus in which an autopsy was performed this same authority found 22 cases in subjects less than thirty years of age. In the Vienna Hospital Reports for 1886, cases of carcinoma uteri occurring in patients aged twenty-one, twenty-four, twenty-five and twenty-eight are reported.

Carcinoma of the breast being an extremely frequent affection, it is interesting to find out how often this occurs in young women. In the London Hospital Reports, Vol. III, will be found the case of a servant girl of twenty years of age, who died at the hospital with a symmetrical carcinoma of the breasts and ovaries. In a statistical table compiled by Bryant, amounting to 600 cases, 25 occurred in subjects under thirty years of age, and Birkett gives 19 cases between the ages of twenty and thirty in the article he has contributed in Holmes's “System of Surgery.” Gross collected 642 cases derived from various sources and found that 18 of them occurred between the ages of twenty and thirty. Haycock reports a case of carcinoma in the breast in a single woman twenty-two years old, and Bryant communicated another to Mr. Shield of a young lady of twenty-one from whom he removed a carcinoma of the breast, and who died a year afterwards from a secondary manifestation of the disease in the lung. Of 64 cases of carcinoma of the breast operated on during the last five years at the surgical clinic of Greifswald, two of the patients were under twenty-six years of age. Professor Le Dentu removed a carcinoma from a young lady of twenty-five years.

Of 51 cases of carcinoma of the testicle reported by Ludlow and Lebert, we find that five were in subjects under five years of age, one in a patient fifteen years old, and in 11 patients the disease developed between twenty and thirty years. It is more than probable that some were instances of sarcoma.

Carcinoma is also a frequent neoplasm of the digestive tract, and the stomach alone contributes about 33 per cent. of all cases of carcinoma. Leber found three per cent. out of 314 cases of cancer of the stomach, Hahn out of 166 cases only two per cent., and Reichert found only three per cent. of these cases occurring in subjects under thirty years of age. In a statistic made at the clinic in Zürich, five cases out of 138 occurred in subjects under thirty years, while another series of 120 cases reported from the clinic in Würzburg gave three instances of this affection in subjects under thirty years of age. Scholtz relates the case of carcinoma of the stomach in a girl aged twenty-two, and Scheffer records another in a boy of fourteen years. Hofmann describes a case of this affection in a twenty-year-old soldier, Reinbrecht that of a twenty-one-year-old girl, Muth one of a twenty-four-year-old man, while Burger gives in a statistic of 357 cases of carcinoma of the stomach, 11 of the patients being under thirty years of age.

As to cases of carcinoma of the intestines occurring in subjects under thirty years of age, a certain number have been reported from time to time. The youngest that we know of has been reported by Marchand, and was that of a carcinoma of the rectum in a young girl of sixteen, and Mr. Cripps records another instance in a lad of seventeen. Billroth reports three cases of carcinoma of the intestine in patients between eighteen and twenty years old, while Raspe records a case of carcinoma recti in a woman twenty-eight years old. Sihla reports two cases of carcinoma of the intestine in patients under thirty years of age out of 46 cases which were operated on in Dorpat from 1880 to 1888. Schwieder found three cases of carcinoma of the intestine in patients under thirty years of age out of a total of 49 cases. Burger found nine cases under thirty years of age out of 111 autopsies in which carcinoma of the intestine was found. Von Bary has described a case of a patient aged twenty-five, in which a carcinoma developed from an ulcus durum on the border of the anus. Out of a total of 126 cases of carcinoma of the rectum observed by Kuster, two patients were under the age of twenty years. Professor Rose operated on a case of carcinoma of the rectum in a subject twenty-six years old, while Professor Socin operated on a female of twenty-seven years for a tumor of the colon, which proved on microscopical examination to be a cylinder-cell carcinoma.

The following table compiled by Dr. Boulogne relative to the age at which carcinoma of the intestine has been found is interesting:

From 1 to 9 years of age	5 cases
“ 10 to 19 “ “	4 “
“ 20 to 29 “ “	24 “
“ 30 to 39 “ “	38 “
“ 40 to 49 “ “	46 “
“ 50 to 59 “ “	51 “
“ 60 to 69 “ “	31 “
“ 70 to 79 “ “	16 “
“ 80 to 89 “ “	2 “

Here are a few more cases gathered from the literature and classified according to the location of the neoplasm:

Cecum and Ascending Colon.

Male, aged 27 years (Morton: The Lancet, 1895).
Female, aged 24 years (Hofmolk: Wien. med. Presse, 1885).
Male, aged 28 years (Tchouprow: Chirurg. Leitopis, 1893).
Female, aged 25 years (Jacobs: Presse med. Belge, 1895).
Female, aged 14 years (Robson: British Medical Journal, 1895).
Male, aged 24 years (McCosh: Presbyterian Hos. Reports, 1895).
Female, aged 29 years (Shield: British Medical Journal, 1896).
Female, aged 29 years (Rolleston and Shield: Clinical Society Transactions, vol. xxx).

Transverse Colon and Flexures.

Female, aged 29 years (Eiselsberg: Wien. med. Woch., 1895).
Female, aged 25 years (Laubie and Cactes: J. med. Bordeaux, 1898)

Sigmoid Flexure.

Male, aged 28 years (Ferranti: Riv. clin. di Bologna, 1883).

Rose performed an exploratory laparotomy on a subject of twenty-one years; the growth proved to be a carcinoma of the left kidney, with metastases in the retroperitoneal lymphatic glands. Isreal removed the left kidney for carcinoma in a patient twenty-one years old. In an interesting paper on malignant tumors of the kidney Sutton mentions a case of carcinoma of the kidney in a female twenty-eight years of age. The operation was successful, but the patient died a year later from a recurrence of the neoplasm.

In a recent study entitled, "Carcinome unter dreissig Jahren," Seitz related eight unpublished cases of considerable interest which were under observation at the surgical clinic of the University of Munich. The first was a subject twenty-three years old afflicted with a carcinoma of the rectum; the second was a patient twenty-three years old who had a carcinoma of the skin in the left dorsal region; the third was a subject twenty-four years of age, with carcinoma of the rectum; the fourth, also aged twenty-four, carcinoma of the rectum; the fifth, aged twenty-five, had carcinoma of the liver; the sixth was a twenty-seven-year-old subject who had a epithelioma of the lower lip; case seven, also twenty-seven years of age, had a carcinoma of the pylorus; case eight was a twenty-eight-year-old subject, with carcinoma of the breast.

Dr. Fabre-Domergue, in his recent and splendid treatise on "Les cancers epitheliaux" (Paris, 1898), mentions the case of an inoperable epithelioma of the thigh in a man aged thirty. The primary growth was seated on the anterior aspect of the left thigh, ten centimetres from the groin. It was a flattened fungous mass, having a diameter of ten centimetres and projected above the surrounding skin about three centimetres. The surface was reddish and dimpled, and covered with offensive pus. It had been present for fourteen months. In the corresponding groin a metastasis in the glands had taken place, the secondary tumor being the size of an apple; the skin covering it was red and inflamed. All the lymphatics of this region appeared to be more or less indurated.

Carcinoma of the external genitals in young subjects must be very rare, as I have only been able to find three recorded cases. The first was a young woman of twenty-eight years, who was operated on for a carcinoma of the right labium majorum by Professor Socin, of Basel, in 1890. The second case was a male subject aged twenty-four years, who underwent amputation of the penis for an epithelioma of the organ; this case occurred in the service of Professor Weinlechner, of Vienna. The third case was a man aged thirty, with a carcinoma of the penis, the organ being amputated by Professor Rose at that time in Zürich.

As very rare we may mention the case of a female aged thirty years, who was operated on for an epithelioma of the upper lip in the Vienna General Hospital, and a patient of Professor Rose, aged thirty years, who presented a carcinoma of the tongue and submaxillary gland.

To the cases already mentioned I will relate a little more in detail three that have occurred in my practice within the last four years.

Case I. Miss X., age nineteen, was kindly referred by Dr. Charles W. Knowlton, of this city. A year previous to our seeing the patient, she had suffered from a typical attack of gall-stone colic, the symptoms presented being pain in the region of the gall-bladder, yellow skin and conjunctiva, clay-colored stools and anorexia. She recovered from this attack after a few weeks of treatment, and although the calculi were searched for in the stools, none had been found.

We saw the patient in a second attack in May, 1897, and made the following notes: The skin and conjunctiva were of deep yellow; thickly coated tongue and almost complete anorexia. Clay-colored stools. Pulse 60 per minute. Pain in the region of the gall-bladder. Palpation revealed the presence of a large globular tumor in the right hypochondriac region, very sensitive to pressure, and, as near as we could ascertain, might have been the size of a grapefruit. A diagnosis of biliary calculi was made, but on account of the very distinct outline of the mass, it appeared to us that some other affection might possibly be present, more particularly perhaps a hydatid cyst of the liver, and before operating Dr. David W. Cheever and Dr. Edgar Garceau kindly saw the patient in consultation and coincided in the diagnosis of gall-stones.

After putting the patient on a course of medical treatment in order to relieve the jaundiced condition, the patient was prepared for laparotomy, which was done a week or two later. The usual incision parallel with the outer border of the rectus muscle was made, and when the peritoneum was reached the fundus of the gall-bladder was distinctly felt adherent to the serous membrane. The latter was picked up with a rat-tooth forceps and carefully incised to the extent of about four centimetres, and when this opening had been made, it was found that the supposed gall-bladder was adherent over quite an extent to the peritoneum. We carefully separated the organ from the peritoneum all around the edges of our incision into the serous membrane, but, as the organ was nicely walled off, we found that packing with gauze would be unnecessary.

The aspirating needle was slowly introduced for about three or four centimetres, but did not come in contact with any stone, and a vigorous use of the aspirator did not result in the withdrawal of any fluid; several attempts were made, but no gall-stones were encountered by the needle, and nothing but a little dark blood would come away when the latter was withdrawn.

Not understanding the nature of the condition of affairs present, the gall-bladder was separated from the peritoneum, when, to our surprise, in introducing the hand into the peritoneal cavity we found a large mass the size of a fetal head extending from the under surface of the liver and dipping down into the pelvic cavity. Raising up the borders of the abdominal incision with a broad retractor, the cavity was inspected and the gall-bladder was seen in its normal position; it was very small. The supposed gall-bladder was the greatly hypertrophied liver. The diagnosis of carcinoma of the liver, or more probably adenocarcinoma, was made, and the abdominal wound was sutured. The patient died shortly after the operation and no autopsy could be obtained.

Case II. The patient, age twenty-eight years, kindly referred by Dr. Joseph Garland, of Gloucester, Mass. The patient was the mother of two or more children. The last few months she had been complaining of considerable vaginal discharge, which was rather foul-smelling and tinted with blood.

Examination revealed a cauliflower growth on the cervix which invaded the lateral culs-de-sac. The uterus was somewhat enlarged and not very movable. The broad ligaments were considerably infiltrated. No enlargement of the inguinal or supraclavicular. As the disease had extended too far for a radical operation, the growth was freely removed with the scissors and thermocautery. The patient died nine months later from a general metastasis throughout the abdominal viscera. Histological examination of the neoplasm showed it to be epithelioma.

CASE III. A young man, age twenty-four years, applied to the writer, for constipation. He stated that during the last three months he had lost twenty-four pounds. His skin was sallow and his eyes rather sunken. Thoracic organs negative. Palpation of the abdomen revealed the presence of a mass about the size of a lemon in the right iliac region. This growth was painless on pressure. The inguinal glands on the right side were enlarged. Exploratory incision revealed an annular carcinoma of the ascending colon, and the mesentery was actually riddled with secondary lymphatic metastasis. Circular resection of the intestine was done.

The patient died four months later, and histological examination of the intestinal growth showed it to be an ordinary cylinder-cell carcinoma.

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Clinical Department.

A CASE OF ADENOCARCINOMA OF THE BODY OF THE UTERUS, SIMULATING SUBMUCOUS FIBROMYOMA.[1]

BY W. L. BURRAGE, M.D., BOSTON.

A. H., forty-eight years old, single, entered St. Elizabeth's Hospital, November 8, 1898. She presented the appearance of a woman of large stature, dark complexioned, rather poorly nourished and of poor color. She had enjoyed vigorous health up to two years ago, but since this time had not felt very strong. Her father died of heart disease at sixty and her mother of Bright's disease, also at sixty. Of eight brothers and sisters six died young. Her menopause was established three years ago, the catamenia having been regular every twenty-eight days up to this time. She usually flowed from three to four days and soiled about four napkins altogether. After being irregular three months the catamenia ceased, following a rather lively hemorrhage. Flowing began again in June, 1898, and had continued ever since, amounting at times to a hemorrhage, though most of the time only a slight dribbling. No vaginal discharge other than the blood. Constant pain in the abdomen began with the appearance of the flow. At first this pain lasted only a few moments at a time, but latterly it would be present for two hours at a time. Constipation as a habit. Appetite poor. An occasional sufferer with palpitation. Patient had persistently refused any local examination, although strongly advised by her relatives.

Physical examination showed a very tight hymen and narrow vagina, and rigid tissues about the os. Rising out of the pelvis could be felt the enlarged uterus, about the size of a uterus four months pregnant. From the left side of the fundus a pedunculated nodule, the size of a hen's egg, could be felt. The mobility of the uterus was good. The sound went into the cavity for a distance of nine centimetres and detected the presence of much adventitious tissue located chiefly in the cervix on the left side and at the fundus in front and behind.

Operation, November 10th. — Hymen stretched and rigid os enlarged by dividing the cervix freely anteroposteriorly. Morcellation of the tissue at the fundus with the uterine cutting forceps and removal of the tissue in the cervix with the fingers and forceps. Irrigation of the cavity and packing with iodoform gauze. The successful manner in which the uterine cutting forceps removed the tissue in this case was to me especially gratifying and again demonstrated their value in similar cases. The tissue removed had the appearance of being broken down fibromyoma. It came away in shreds about three centimetres in diameter and was of a dirty red color, and in quantity was perhaps four ounces. Dr. M. H. Bailey, the pathologist of the hospital, examined the tissue microscopically and pronounced it to be carcinoma.

The patient had an uneventful convalescence from the operation, and December 1st I did an abdominal hysterectomy upon her. There was at that time a foul-smelling discharge from the cervical canal. The uterine cavity was packed with gauze and the cervix closed with a continuous stitch. There was nothing especially noteworthy about the operation. There was no evidence of the presence of any diseased tissue outside the uterus. A very small piece of the vagina was removed with the uterus, and the vagina was closed tight and the peritoneal cuff stitched to the vagina. Irrigation with salt solution and postural drainage.

The patient has made a good recovery and is now sitting up. The chief interest in the case centres in the specimen, which shows the presence of such a very large amount of cancerous tissue within the cavity of the uterus, even after the removal of a great deal, and also of fibromyomatous nodules, thus simulating a case of primary fibromyoma.

REPORT OF DR. WM. F. WHITNEY.

The uterus is enlarged, measuring about nine centimetres in length, and in general smooth. To the upper part of the fundus is attached by a thin pedicle a rounded (five centimetres) white, firm, fasciculated tumor covered by peritoneum (subserous fibromyoma). The wall is thickened (1.5 centimetres), the cavity dilated and the inner surface roughened and covered with shreddy necrotic fragments of a soft new growth which here and there invades the muscular substance.

Microscopic examination. — Pieces were taken from the fundus and cervix, and in both places the bundles of muscular fibres were separated by masses of large epithelial cells. In places there were perfectly tubular glands, irregular, however, in size and shape, accompanied by a matrix of large round cells lying between the bundles, and near by were solid masses of epithelium, with little, if any, of the accompanying cellular tissue.

The diagnosis is a diffuse adenocarcinoma of the uterus, originating in the mucosa. The specimen is entered under No. 9,290 of the collection of the Warren Museum of the Harvard Medical School.

February 6, 1899, the patient, then being at home, complained of a bleeding tumor at the vulva. Examination showed an ulcerated swelling the size of an English walnut situated on the anterior wall of the vagina over the lower course of the urethra. It had no connection with the hysterectomy cicatrix, the upper margin of the tumor being four centimetres distant from it. A free dissection of the growth was made on February 10th, but it was found that the disease had invaded the base of the bladder and the walls of the urethra so that complete removal was impossible. In April there was involvement of the glands in the groins and stoppage of urine and the patient finally died of septicemia July 24th. The pathologist reported that the tumor removed was epithelioma.

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[1] Read before the Obstetrical Society of Boston, December 20, 1898.

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A CASE OF TETANY.[1]

BY FRANKLIN WARREN WHITE, M.D., BOSTON.

My reason for giving this report is the rarity of the disease in the vicinity of Boston, and the occurrence of certain unusual features in this case.

The patient was a boy three and a half years old, born in this country of Italian parents. No family predisposition to tetany, or other neuropathic heredity could be traced. Both parents were healthy, and there were four healthy children, none of whom had ever had an attack. The boy had measles at the age of one year, and had had occasional attacks of acute indigestion in previous years but none in the last year. He was nursed for the first eight months, and since then had an opportunity to eat anything on the family table, but lived mostly on bread, milk and potato. He has always lived amid poor hygienic conditions in the lower quarters of the city, and has been rhachitic since a baby. His first teeth appeared at the age of one year and he was not able to walk till two and a half years old, and has never been able to run about freely owing to hip deformity. He has never had any previous attack of tetany. The present illness developed suddenly with muscular spasm of the lower limbs without any previous pain, tingling, or other premonitory symptoms. The spasm was continuous whether asleep or awake, without any paroxysms. The legs and feet were held stiffly in a strongly extended position, and voluntary motion was almost impossible. The spasm was not apparently painful, but handling or moving the legs showed that they were quite tender. The muscles of the trunk, head and arms were not involved. There was no spasm of the larynx, nor difficulty in swallowing or articulation, and no general convulsions. The child's intelligence was not impaired during the attack. There was no digestive disturbance before or during the illness. The child was fairly developed and well nourished and had good color. He showed marked signs of rhachitis, a large square head, large rosary, enlarged epiphyses at wrists and ankles, a flaring lower chest, prominent belly, and slight kyphosis. There was slight enlargement of the spleen and lymphatic glands.

The muscular spasm was symmetrical in the lower limbs, the knees were strongly extended, and the feet extended in the position of talipes equinus, with the toes flexed. The thighs were strongly adducted, with a tendency to hold the feet crossed. The muscles of the thighs and calves were firm and hard, in a state of tonic spasm, but without fibrillary twitching. There was practically no voluntary motion in the legs and feet. Chvostek's symptom, spasm of the facial muscles following a sharp blow upon the facial nerve, could not be obtained. Trousseau's symptom, the production of characteristic contractures by pressure on large nerves, was easily obtained during and after the attack. There was never any spontaneous spasm in the arms, but pressure on the large nerves of the upper arm during the height of the disease readily produced typical contractures lasting for a minute or two, the fingers were flexed at the metacarpo-phalangeal joints and extended at the other joints and were pressed together, the thumb was adducted and extended, the wrist slightly flexed, and the hand turned toward the ulnar side; the elbow and shoulder were not involved. For several days after the continuous spasm had subsided in the legs, the contractures would recur whenever an attempt was made to walk or stand, and could also be induced by pressure upon nerve trunks in the thigh.

Erb's symptom, increased electrical excitability of the muscles and nerves, was present during and after the attack. The muscles were tested with the faradic current only and their excitability was found very much increased in the arm and leg. This increased excitability persisted for about ten days after all spontaneous spasm had ceased, and five or six days after any contracture could be produced by nerve pressure. I regret to say that I did not have an opportunity to test the muscles with the voltaic current, for the qualitative electrical changes are of considerable interest. The cutaneous reflexes were increased, the knee-jerks were slight at first (owing to persistent muscular contraction), later were very lively and remained increased for three weeks after the attack. Wrist and elbow jerks were not obtained. No vasomotor or trophic disturbances of the skin, such as perspiration, redness, or edema, were noted. The patient's pulse and temperature were normal during the attack, and nothing pathological was found in the urine.

The diagnosis in this case is easy; the peculiar character of the spasm, its commencement in the extremities, its limitation to certain muscle groups and its bilateral symmetry are all typical of tetany. The continuous character of the spasm suggests tetanus, but this is clearly excluded by the absence of any external injury, the absence of trismus and the presence of Trousseau's symptom. The age of the patient, the bilateral character of the spasm and the course of the attack exclude the possibility of hysteria, and there is nothing in this case to remind one of epilepsy, though Sachs cites an instance where frequently repeated epileptiform convulsions simulated tetany closely enough to cause a mistaken diagnosis. Sachs and Gowers describe a simple "carpopedal spasm" with inversion of the thumbs and great toes, which may occur in rhachitic children either alone or preceding a general convulsion, but it is evidently not the condition we are dealing with in this case, from the duration of the contractures and the presence of Erb's and Trousseau's symptoms.

The treatment of this case was as follows: The child was put to bed and kept as quiet as possible, a simple diet given and daily warm baths advised. He also took ten grains of sodium bromide daily for several days. Gowers says that continuous tetany in early life is less amenable to sedatives than the intermittent tetany of older children and adults. In this patient the continuous spasm, which had lasted for four days when I first saw him, disappeared two days after treatment had begun. For a week longer, any attempt to use the legs in standing or walking provoked a temporary spasm, and the child was therefore kept in bed as much as possible. Trousseau's symptom was present up to this time. Ten days after the end of the attack the child was able to walk as well as he ever could. The lively knee-jerks and increased electrical excitability of nerves and muscles lasted for several weeks after the attack.

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[1] Read before the Clinical Section of the Suffolk District Medical Society, May 17, 1899.

I regard rhachitis as the cause, or, at least, the predisposing factor in this attack of tetany, therefore treatment was directed to improving the child's general condition, with the object of preventing further attacks, and a suitable diet, fresh air, cod-liver oil and iron were prescribed.

The parents stated that the child had never been able to walk properly, and in examining the legs after the contractures had entirely passed away a chronic deformity was found. The trochanters were half an inch above Nelaton's line; abduction of the thighs was limited to one-half the normal amount, flexion of the thighs was increased and hyperextension limited, fifteen degrees of inward rotation of the thigh was possible and about eighty degrees of outward rotation. There was marked general anterior bowing of the femur, with slight outward bowing. Extension of the knees was twenty degrees less than normal, due in good part to bowing of the femur above the condyles. The condition is one of "coxa vara," a bone lesion resulting from rickets and not in any way connected with the contractures present during the attack of tetany. The treatment of the "coxa vara" will not be referred to here.

This attack occurred at the time of greatest frequency of tetany, namely, winter or early spring, and in the absence of any acute infectious disease or gastro-intestinal disturbance, we regard the rickets, or the same conditions which produced the rickets, namely, indoor life, unhygienic surroundings, lack of sun and air, as the predisposing factor.

The features of special interest in this case are (1) the limitation of the spontaneous contracture to the feet, which is rare, as the spasm almost always involves the hands, often the hands and feet at the same time; (2) the continuous character of the spasm, which is distinctly less common than the paroxysmal sort; (3) the short duration of the attack and the lack of any recurrence up to the present time, an interval of about two months.

In closing I wish to thank Dr. James S. Stone for his kindness in making a careful examination of the hip deformity.

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A CASE OF GASTRIC TETANY.[1]

BY RALPH C. LARRABEE, M.D., BOSTON.

THE patient was a married woman of twenty-six. Her family history was negative. Her habits were good and her past history negative, except that she has always been a hearty and careless eater, and several years ago she had a severe attack of "indigestion." It followed overeating but was not at all like the illness here reported. Otherwise she has always been unusually free from gastric symptoms.

The present attack began in the forenoon of April 30, 1899. The night before she had eaten only a light supper and in the morning was perfectly well. She had for breakfast only oatmeal and milk. Later in the forenoon she ate some maple sugar and a banana. Soon after she had a headache increasing in severity, but she was able to eat a large dinner consisting of the following remarkable assortment: Roast lamb, potato, lettuce, cucumbers (with oil, vinegar, pepper, and salt), rhubarb pie, banana and milk! After dinner she took a Seidlitz powder, and repeated it about an hour later. Headache and nausea soon compelled her to go to bed. There was no vomiting and no pain in the abdomen or elsewhere. Two hours after eating she tried to undress but fainted while doing so. Her husband carried her back to bed and she soon regained consciousness. Then she began to have spasmodic contractions of the arms. The elbows and wrists were strongly flexed. The fingers were extended at the phalangeal joints and flexed at the metacarpo-phalangeal joints. The feet were not affected. There were prickling sensations in the forearms and hands, and severe pain. The cramps were intermittent, and lasted in all about twenty minutes.

I saw her about an hour after the spasms had subsided. She had had in the meantime a large, spontaneous evacuation of the bowels, not containing blood, mucus, or undigested food, and not foul. She was complaining of nausea and very severe headache. She was much exhausted and pale. Her pulse was fairly good and her temperature normal. The chest was normal. The abdomen showed nothing abnormal except slight tenderness in the epigastrium. On making pressure over the brachial artery and its accompanying nerves of the left arm there was a return of the pain and prickling sensations, followed by contractions of the forearm and hand, the position being perfectly characteristic of tetany — Trousseau's sign. After omitting the pressure, pain and spasms rapidly subsided. Chvostek's sign was absent. The patient was not at all hysterical.

The woman was encouraged to vomit, which she soon did. No emetic was given. She got rid of about a quart of greenish material, not containing undigested food or mucus, and having very little odor. Headache was at once relieved. She also received four grains of calomel and twenty grains of potassium bromide.

The patient was up and about within twenty-four hours, and on the third day she resumed her usual occupations and her usual indiscretions of diet. When I next saw her, Trousseau's sign was absent. There was no abdominal tenderness, and no evidence of gastric dilatation, except slight splashing on palpation in the epigastrium.

In nearly all of the reported cases of gastric tetany there has been chronic disease of the stomach, most frequently dilatation or pyloric disease. In many of these the symptoms have followed severe vomiting: in a few they have followed the use of the stomach tube. In the cases of this sort reported by Bouveret and Devic[2] and by Fenwick[3] the mortality has been about 70 per cent. In my case there was no evidence of dilatation. I did not pass a tube or inflate the stomach in any way and I think that such a procedure, in view of the outcome of many of the cases of tetany where this has been done, would have been wholly unjustifiable.

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[1] Read before the Clinical Section of the Suffolk District Medical Society, May 17, 1899.

[2] Revue de Médecine, February, 1892.

[3] The Practitioner, April, 1892.

In acute conditions of the stomach tetany is much less frequent. It has followed acute indigestion and overloading the stomach in delicate and feeble people. In children [4] with tetany the attacks are often associated with alimentary disturbance.[5] It has been reported in cases of chronic gastric indigestion, the spasms coming on repeatedly after overloading the stomach.[6] It is, however, at least rare in otherwise healthy adults with simple acute indigestion. In my case the cause seems to have been acute gastric indigestion, due to greatly distending the stomach with improper food, possibly aided by the gas from two Seidlitz powders.

A CASE OF ATAXIC PARAPLEGIA DEVELOPING UNDER CIRCUMSTANCES OF UNUSUAL INTEREST.[1]

BY J. W. COURTNEY, M.D., BOSTON,
Assistant in Nervous Department, Boston City Hospital; Visiting Physician to the Home for Incurables, Dorchester.

In the great majority of cases where persons are afflicted with nosophobic tendencies their fears are mainly remarkable for the small possibility of realization. The following case, which occurred in the practice of Dr. T. M. Gallagher of Newton, is of interest as a striking exception to this general rule. The patient is an unmarried woman of thirty-six. She was born in Ireland, and is by occupation a domestic. Her family history is negative as to nervous and mental disease. Her previous history is free from sickness of any kind since childhood, and she has never considered herself of neuropathic temperament. The trouble from which she at present suffers had its inception five years ago when, in her employment as domestic, she was thrown much in contact with her employer's wife, an elderly woman, who was crippled with rheumatism and who finally succumbed to cerebral hemorrhage, of which she had had several attacks. After one of these attacks the old lady became very emotional and was subject to seizures of uncontrollable laughing and crying, which made such a powerful impression upon the girl that she grew to be haunted by the dread of being similarly afflicted. For an entire year this fear seldom left her, and at the end of this time (January, 1895) she noticed that her lower extremities were growing weak and were the seat of a constant heavy feeling. In addition to this she experienced a persistent dragging pain in the lumbar region and in her hips. She soon found, moreover, that she grew easily over-tired even on slight exertion, and that she was prone to stumble and fall on the slightest provocation in the way of an unevenness in the floor. These falls have been accompanied by attacks of uncontrollable laughing and crying, during which she will not allow any one to come to her assistance. After the emotional outburst subsides she rolls over on to her knees and gets up unassisted, somewhat after the fashion of a patient with pseudomuscular hypertrophy.

Five months after the onset of her trouble, increasing weakness and the embarrassment of her locomotion compelled her to abandon her work, and she has been able to do nothing since. To the tendency to stumble and fall was soon added a marked ataxia of the lower extremities, and for a long time now she has employed a cane to assist her in getting about. Within a year a slight but distinctly noticeable slowing of speech has manifested itself.

Altogether her symptoms may be recapitulated as follows: (*a*) Marked emotional instability with attacks of causeless laughing and crying; (*b*) weak, dragging feelings in lower extremities, with constant dull pain in lumbar region and hips; (*c*) marked ataxia of lower extremities, with increasing tendency to stumble and fall; (*d*) noticeable slowing of speech.

There have been no headaches, no failure of vision, no diplopia. The integrity of the sphincters has been preserved, and nothing approaching lightning or girdle pains has ever been present. The patient is strongly impressed with the idea that she has caught her trouble — as she expresses it — from her former employer's wife.

Physical examination. — Patient medium height; fairly well developed and nourished; color fair.

Gait. — This is spastic-ataxic to a very marked degree. The patient clutches at surrounding objects for support as she walks, and on attempting to turn she falls to the floor, if not supported. Nevertheless, it is difficult to say whether the spastic or the ataxic element predominates.

Station. — Static ataxia is so great as to preclude the possibility of her standing alone with both eyes shut.

Pupils. — The right is somewhat larger than the left, but both are perfectly regular and react promptly to light and in accommodation.

Ocular muscles. — Normal, except for very slight tendency to nystagmus on looking upward and outward.

Visual field. — Normal.

Facial muscles, tongue, soft palate. — Normal. Speech is somewhat slow, but cannot properly be called scanning.

Upper extremities. — Strength fair and equal; slight tendency to tremor on purposive movement. especially on left, and the deep reflexes are plus on this side.

Heart and lungs. — Normal.

Kidneys. — Normal.

Lower extremities. — Strength very much impaired; this more marked on the left than on the right side. In spite of the very evident ataxia which is here present, myotatic irritability is much increased, the knee-jerks being greatly exaggerated, with ankle-clonus on the left but not on the right side. The superficial reflexes show no alteration, and there is no tendency to contractures.

Sensation. — There is a slight hypoalgesia over irregular areas on the thighs, but there is no true analgesia or anesthesia.

In the opinion of the writer we have presented in the above combination of symptoms about as typical a manifestation of that pseudosystemic form of spinal sclerosis which we designate clinically as ataxic paraplegia as it is possible to have. That the mental atti-

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[1] Read before the Clinical Section of the Suffolk District Medical Society, May 17, 1899.

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[4] Morse, J. L.: Journal of American Medical Association, November, 1898.
[5] Griffith: American Journal of the Medical Sciences, vol. cix, 1895.
[6] Max Einhorn in Twentieth Century Practice, vol. viii.

tude of the patient is that of a hysteric cannot be denied, and this factor in connection with the irregular areas of disturbed sensibility on the thighs calls, to a limited extent, for differentiation. The circumstances under which the trouble originated are certainly suggestive, and the lapse of time between the acquirement of the fear of disease and the establishment of the preliminary symptoms might justly be called, after Charcot, the period of meditation. When we consider, however, the obscurity under which is veiled our knowledge of the etiology of the form of sclerosis which we assume to be present in the case in point, the only etiological factors which we have at command may be considered as potent for the production of a sclerosis as for a psychosis. Furthermore, it must be borne in mind how frequent is the association between the various etiologically obscure spinal scleroses and hysteric manifestations. This is especially true of the "*scléroses en plaques*," and has repeatedly given rise to errors in diagnosis.

With regard to the disturbance of sensibility which is present in this case, the writer admits that it is not ordinarily found in the so-called ataxic paraplegia, owing to the fact that it is the postero-internal columns of the cord rather than the root zones which are found degenerated. In view, however, of the essentially irregular distribution of the sclerosis — in other words, its pseudosystemic character — it is safer to conclude, in the case before us, that a few of the fibres in the postero-external column are affected, rather than to attribute a psychical origin to the hypoalgesia found. Leaving both these factors out of the question, there is still a third which, in my opinion, puts the case without a doubt upon an organic basis, namely, the presence of the ankle clonus.

This is the diagnostic factor upon whose value in the matter of differentiation between hysteria and organic disease I wish to lead the discussion. It is an old moot point and one of great medico-legal importance. My own feeling in the matter is that genuine ankle clonus invariably indicates organic disease. By genuine ankle clonus I wish, however, to be understood to mean a clonus that can be elicited at all times and one that does not cease during the individual trial after from two to three to fifteen or twenty movements. Speaking from personal experience with regard to hysteria, I am much more accustomed to find a normal muscle tonus than an exaggerated one, and I am always more surprised to find lively reflexes — to say nothing of ankle clonus — than I am to find normal ones. In looking over the notes of 50 consecutive cases, both hospital and private, I find the reflexes thus recorded: Lively, but equal and without ankle clonus, seven; considerably diminished, two; normal 41. In other words, a normal condition in 82 per cent. of the total number. I have under my care at the present time an absolutely typical case of hysterical hemiplegia with marked tendency to contracture at the knee-joint, and yet the patellar reflexes are diminished. I remember, also, very distinctly, two other cases, both of hysterical paraplegia, one of which had been bedridden for five years, in which the deep and superficial reflexes were as near normal as can possibly be imagined.

It is curious how silent the French writers are on the subject of tendon reflexes in hysteria. I have looked carefully through the works of the best-known authorities of this school, and find no special mention made of this very important subject. Among the Germans, v. Bechterew,[2] Oppenheim[3] and Sternberg[4] claim to have seen ankle clonus in connection with hysteria, and the last-named author goes so far as to say that it is present in 20 per cent. of such cases. Unfortunately for such claims, evidence is lacking that the clonus observed was genuine in the sense already set forth. Gowers,[5] who approaches the subject in his customary succinct and satisfactory fashion, says that a true foot clonus is all but conclusive evidence of organic disease, but that it may be obtainable during hysterical contracture. With this view, Mills, speaking from much clinical observation, is in accord, and in the discussion of a paper[6] recently presented by him before the New York Neurological Society in reference to the subject, the general sentiment coincided with that of Dr. Mills.

Before inviting the opinion of my listeners to the point in question, I wish to state clearly again the stand which I personally am inclined to take in the matter. This is as follows: (1) That no clonus ought to be considered genuine which cannot be obtained to the same degree — under the proper circumstances — at all times throughout the course of the disease; (2) that such genuine clonus is never obtained except in organic disease.

In conclusion I must revert to the title under which the case which forms the basis of this paper is reported, and say that a consideration of the circumstances underlying the evolution of the case seems to me to abundantly justify its selection.

FURTHER OBSERVATIONS ON THE TREATMENT OF THE ABDOMINAL VISCERA THROUGH THE COLON.[1]

BY FENTON B. TURCK, CHICAGO, ILL.

In a previous communication it was shown that small quantities of hot water (55° C.) introduced into the rectum produced a marked effect on the heart and general circulation and especially on the abdominal organs. From these results it was evident that hot water introduced at the temperature mentioned into the colon had a greatly beneficial effect upon the abdominal viscera. Air, hot or cold, forced through a double tube into the colon and allowed to escape also acts not only as a powerful stimulant to the abdominal viscera but also acts as a species of pneumatic gymnastics of the colon. In the introduction of hot water into the colon the following technique is adopted: The patient is placed in a dorsal position upon a table specially devised for the purpose, which is so adjusted that the hips may be raised or lowered to any desired angle without discomfort. The solution employed is usually a nine-per-cent. normal salt solution when the therapeutic effect of heat and cold are desired. For other purposes mild antiseptic and medicated solutions may be employed. A soft-rubber tube, either single or

[1] Abstract of paper read at the Mississippi Valley Medical Association, Chicago, October 3, 1899.

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[2] V. Bechterew, W.: Neurol. Centralbl., 1895, p. 1157.

[3] Oppenheim, H.: Archiv f. Psychiatrie, vol. xix, pp. 524, 525.

[4] Sternberg, M.: Die Sehnenreflexe und ihre Bedeutung für die Pathologie des Nervensystems, p. 254.

[5] Gowers, W. R.: Manual of Diseases of the Nervous System. Second edition, 1893, vol. i, p. 451.

[6] Mills, Chas. K.: Some Points of Special Interest in the Study of the Deep Reflexes of the Lower Extremities. Journal of Nervous and Mental Disease, March, 1899, pp. 131-160.

double, with end and side openings, is introduced into the rectum as far as the sigmoid flexure. At first 200 to 300 cubic centimetres of water at a temperature of 50° C. is introduced. This is allowed to return through the tube into a conveniently placed receptacle and the procedure repeated. Every time the water is introduced its temperature is gradually raised until it reaches 55° C. In all from three to six litres are needed. The patient is then allowed to evacuate the bowels, after which he receives similar short treatment with water cooled to 2° C. or 5° C. The amount of water introduced and withdrawn and the duration of the treatment depends upon the character of the case.

For continuous irrigation my double recurrent tube or needle douche has answered the purpose best in the hands of gastro-enterologists, like Herschell, Treves, Gillespie and others. By continuous irrigation a somewhat different action is obtainable from that already referred to. It is indicated in impaction, acute gastro-enteritis, and during the early stages of appendicitis. A strict observance of technique judicially varied in each case gives the best results.

The mucous membrane of the colon, like that of the throat, seems to be insensible to comparatively high temperature. The sensations within the colon as to heat or cold are not very definite. This may in part be due to the fact that the colon sensation has been so specialized as to fecal pressure as to lose its heat and cold reaction. That the treatment through the colon influences not only the general circulation, but also stimulates the nerve actions of the abdominal viscera, and even the cerebral and spinal blood pressure, has long been known. The principle on which stimulant enemata have been employed in opium coma and allied conditions is significant evidence of this. The anogenital centre is notoriously the last to be affected in coma. Numerous instances have been reported where death from opium coma and anesthesia has been prevented by its stimulation. Furthermore, stimulation of the ganglia in the walls of the intestines cannot fail to produce effect on the spinal and cerebral centres. The increased action of kidneys, liver and other organs after the employment of colonic means is evidence in this direction. This is further shown by the fact that favorable results depend not upon the amount of water introduced, but upon the reaction between heat and cold. Large quantities of water introduced at one time are detrimental. Small quantities frequently repeated have markedly beneficial effects.

In colonic treatment by water or air single or double recurrent tubes may be employed according to the nature of the case. A tube with a single opening at the end is useless, however, for colonic lavage. One designed by me consists of a rubber tube (one metre long and with a calibre of 23 A or 35 F), tapered at the end to an opening with bevelled edges. On either side are four small perforations opposite to each other in a row. Above this is a large side opening with edges so sunken as to prevent irritation in introducing the tube. The distance from the end of the tube to the uppermost opening is one and three-quarters inches. This tube ensures rapid return of the water injected, and there is no danger of the suction of mucous membrane by siphonage. There is thus less danger of traumatism and of closure of the end of the tube by the mucous membrane or feces. This tube ensures a more equable distribution of the fluid introduced and is therefore of special value in topical applications or in introduction of food. The double recurrent tube or "needle douche" previously described will be found of special value when prolonged irrigation or lavage is desired. It has been found particularly useful in obstruction, from whatever cause by Herschell and others. For the same reason it is of value in appendicitis. The sprinkler at the end has proven useful in colon atony, or where hot or cold water is needed as a spray or needle douche. In some cases a tube capable of passing the sigmoid flexure may be needed. Most tubes now made pass only to this flexure but not beyond. The stiff tubes press upon and so bulge the walls as to give the false impression that the tube has passed through the flexure. The flexible tubes coil up and produce the same impression. My colonic sound and irrigator enables the physician to pass around the colon even as far as the cecum. It consists of a double curved metallic tube about sixteen inches in length, so made as to be passed through the sigmoid flexure. The tube not only serves as a channel for the return of fluids injected, but also as a sheath for the introduction of a flexible hollow metallic cable. The distal end of the cable is surmounted by an olive-shaped perforated head. This serves as a guide for passing the sound. As the cable is hollow it may be employed for colonic distention. This secured during the passage of the sound will ensure further introduction. The position of the cable tip may be determined by palpation, especially if the cable be rotated. Since the cable is metallic it can be employed as an electrode. Food by this instrument may be distributed over a wide area. Great objection frequently exists to the introduction of water, especially hot water, into the colon. The hot water produces depression, and even collapse at times. Warm water is particularly objectionable in this particular. Atony of the bowels from this cause, moreover, is very frequent. Distention of the bowels with water, subsequently withdrawn, would be of value in bowel gymnastics were it not for the fact that since the water is slow to return and is not compressible it causes undue distention.

In treatment of the colon the object is (1) when atony exists to secure heat; (2) distention; (3) contraction, and peristalsis producing gymnastic exercise. For these purposes air often answers better than water. If heat be desired the air can be heated by passing it from a compressed-air tank through a bottle of water heated to the required temperature before passing it into the colon. The method of treatment is useful in atony of the bowels, whether it exist alone or with obstruction or impaction. Compressed air is used with a double tube introduced into the colon. When the colon is distended, air is allowed to escape through the outlet tube. Air at 55° C. reaches as far as the colon. Nebulization of the colon may be thus employed, any of the nebulizing mixtures adapted to the colon being used.

Dr. William H. Howell made a Dean. — Dr. William H. Howell, professor of physiology, has been made dean of the Johns Hopkins Medical School, in place of Professor Osler, who has resigned. Dr. Henry M. Hurd continues as superintendent of the Johns Hopkins Hospital.

Medical Progress.

REPORT ON PROGRESS IN GYNECOLOGY.

BY EDWARD REYNOLDS, M.D., BOSTON.

INFLUENCE OF MENSTRUATION UPON THE AMOUNT OF HEMOGLOBIN AND THE CORPUSCLES IN THE BLOOD.

P. SFAMENI[1] pursued investigations on six normal individuals, four during one menstrual period only, and in two for four months. In each case he first ascertained the differences existing between the results of examinations made during the flow; he then divided the intermenstrual period into three, the first including the three days previous to the appearance of the menses, the second the three days following, and the third the remaining days. He obtained the following results:

	Hemoglobin.	Red blood corpuscles.	Leucocytes.
Average of results of examinations made during the menstrual period. . .	86.50	5,101,109	6,975
Average of results of examinations made before and after the menstrual period.	90.58	5,223,552	6,672
Difference in menstrual period . .	4.08	122,443	+303
Average of results of examinations made in the three days preceding the menses.	90.57	5,321,652	7,040
Difference in menstrual period . .	4 07	129,543	−65
Average in results obtained in the three days following the period . . .	90.09	5,220,749	6,507
Difference in menstrual period . .	−3.59	—119,640	+468
Average of results of examinations made during days remote from period . .	91.00	5,188,542	6,682
Difference in menstrual period . .	4.50	87,633	+293

These results show that the amount of hemoglobin contained in the blood is constantly diminished during the menstrual period, although to slight extent, being on an average about 4.5 per cent. The amount of diminution is in direct relation to the amount of blood lost during menstruation. The red corpuscles are fewer in number during menstruation than in the intermenstrual period. The leucocytes are increased in number during the flow.

TRANSPLANTATION OF OVARIES.

Dr. James F. McCone[2] reports four cases of experimental implantations of ovaries in rabbits, and founds upon them the following conclusions:

(1) Contact between ovary and tube is not essential for conception.

(2) Ovaries grafted from one part of an animal to another part of the same animal continue to grow, to functionate, and pregnancy can and does occur.

(3) An ovary grafted from one animal to another of the same species continues to functionate, and maintains the normal condition of tubes and uterus. Pregnancy can occur.

(4) Ovaries grafted from one species to another continue to functionate, and seem to prevent post-castration atrophy of tubes and uterus.

(5) Best results are obtained where the raw surface of the transplanted ovary is sewed to a denuded surface.

Practical value. — This paper suggests conservation of healthy ovarian tissue even on the opposite side from a patent tube. It indicates the possibility of grafting in the human species. It proves that successfully planted ovarian tissue prevents the post-castration atrophy of tubes and uterus. The normal condition of uterus and tubes was maintained even when ovaries were grafted from one species to another. The grafting of animal ovaries may, therefore, be used in the human species to prevent the atrophy and post-castration nervous symptoms. [*These statements are the author's.*]

In 1896, in the *Centralblatt für Gynäkologie*, Knauer reported having transplanted ovaries from one part of an animal to another part of the same animal. He had four cases, and demonstrated functionating ovarian tissue microscopically some months after operating. In 1897, in the same paper, Grigorieff reported pregnancy after ovarian transplantation. In 1897 M. F. Jayle promised the Anatomical Society of Paris a report on ovarian transplantation, but has thus far published no report. In 1898 Knauer reported successful pregnancy after ovarian transplantation. Morris, of New York, and Frank, in Germany, have reported transplantation in the human species.

CAUSES OF OVARIAN PAIN.

George Halley[3] says that patients often complain of excessive pain in the lower part of abdomen, which is not confined to the pelvis, but radiates upward and backward, following a line about two inches inside the crest of the ilium. Sometimes the pain is on the outside or back of the thigh; sometimes it is confined to the lower portion of the iliac fossa and upper two inches of the thigh. It is usually of a dull, aching, persistent character, increased by motions or pressure. It varies in its relation to the menstrual periods. The usual symptoms occurring with this condition are constipation, painful or difficult micturition, nervousness, sleeplessness and prostration. While cystic degeneration of the ovary is often the cause of this train of symptoms, in many cases it is due to a varicosed condition of the pampiniform plexus. The veins composing the plexus are sometimes as large as a lead pencil and tortuous, with the walls enormously thickened. This condition can usually be differentiated from cystic ovary. In the latter case the ovary is excessively tender and the pain is most severe during the menstrual period, while in the former condition the greatest freedom from pain is after the menstrual flow has been fully established and the ovary is free from tenderness. In cystic ovary menstruation is irregular, the periods being much further apart than normal, while in the varicosed condition of the plexus the flow often occurs twice in a month, though in both conditions there may be normal menstruation. Hot douches aggravate all the symptoms. The writer's treatment is to ligate both ends of the vein of this plexus with some good, strong material, and cut out, or ligate and cut out, veins, just as is done in most cases for the radical cure of varicocele. The ligation must be very thorough, as the artery will produce a hyperemic condition of the ovary and there is danger of hemorrhage from the ends of the cut vessels.

The reason that operations on the ovary often fail to relieve pain is owing to the fact that the plexus, and not the ovary, was diseased. Even where the ovary is cystic it is possible that ligation of the veins might be beneficial, if not curative, and the woman would still be sexually perfect.

THE MENSTRUAL FUNCTION AND HEMATOPOIESIS.

Giuseppe Poggi[4] says that the fact that menstruation may influence the hematopoietic function is not unknown, although there have not been many exhaustive researches into the subject. Isolated observations, however, made upon the blood during the menses show that there is an intimate relationship between the two processes. In order to ascertain the modifications which may occur in the blood during menstruation, Poggi instituted a series of experiments upon normal patients, determining the amount of hemoglobin daily with Fleischl's hemometer, during and after the menstrual flow for about a month. The charts show that the curve of hemoglobin is nearly always lowered for a few days before the appearance of the flow, just at the time when disturbances of various kinds are apt to occur. When the flow is established the hemoglobin reaches the first level. The author is unable to state whether the hemoglobin during the menstrual period is in proportion to the quality or to the intensity of the pain suffered by the patient, but he does state that it bears no relation to the amount of the blood lost. The anemia appearing, as it does, before the flow cannot be attributed to loss of blood, but must be due to more complicated and recondite causes. The transitory oligochromenia does not continue after the flow; moreover, the 200 cubic centimetres (about) of blood lost gradually throughout several days could scarcely account for a lowering of hemoglobin to 10° or 15°, which frequently occurs, and besides it is very quickly replaced by means of the functional activity of the hematopoietic organs. In such small hemorrhages the number of new cells produced may be two or three times greater than that lost. This may be the reason why the curve of hemoglobin, which was lowered during the premenstrual period, rises as soon as the flow is established. The author asks himself whether the diminution of hemoglobin often present during menstruation is not a certain symptom of anemia, since it may be produced by simple constriction of the cutaneous capillaries from vasomotor disturbances. The uterus and ovaries during menstruation especially become the seat of centripetal stimulation, and it is a well-known fact that stimulation of the genital tract may cause the greatest variations in the calibre of the blood-vessels. By experimentation Poggi found that the diminution in the hemoglobin, however, is real, and not dependent upon constriction of the peripheral veins or a displacement of the blood mass.

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[1] British Medical Journal, May 13, 1899.

[2] American Journal of Obstetrics, August, 1899.

[3] Journal of the American Medical Association, April 29, 1899.

[4] Arch. Ital. di Gin., February 28, 1899.

The lowering of the hemoglobin curve is in relation to the lessened consumption of albumin which occurs in menstruating patients, and is manifested by diminished elimination of nitrogen through the urine and feces, this diminution taking place a little before the appearance of the uterine hemorrhage, and at the same time as the descent in the hemoglobin curve. The processes of nutritive exchange are therefore retarded during menstruation. This function causes a depression in all the organic functions, the temperature is lowered, blood pressure is diminished, the nerves, especially the vasomotor nerves, are more torpid, respiration is less easily influenced by external stimuli, the mobility of the stomach is impaired, and muscular weakness usually occurs. Reasoning by analogy, Poggi believes that the diminution of the hemoglobin is due to a retardation in the production of blood. He holds that the nervous system plays an important part in this process, an impulse being transmitted from the cerebro-spinal centres to the ganglionic system of the generative organs, thence to the ovary, this organ being the medium for the special activity of the nerves. Still, it cannot be the only factor, since Goodman found a vaginal menstruation in the case of 27 women whose ovaries had been removed. Many other facts go to prove that the nervous system has a marked influence upon menstruation, as, for instance, that intense emotions may suppress or increase the flow. It is hard to say by what mechanism a diminution of hemoglobin occurs at each menstrual period. It might possibly be due to a vasomotor disturbance in the functioning bone marrow, such as occurs in osteomalacia, produced, according to Fehling, by a passive congestion of the bone tissue caused by stimulation arising in the ovaries. Under the influence of menstruation something similar to this might occur, the congested condition mentioned causing a stasis in the hematopoietic organs, and hence a clearing of the circulation, with consecutive diminution of hemoglobin. The latter would then be seen to depend upon a diminution in the number of red corpuscles, but Poggi has not been able to ascertain definitely whether this is the case on account of the uncertain action of the instruments at our disposal.

VAGINAL HYSTERECTOMY.

Dr. Pryor[5] describes his method of performing this operation as follows: He makes the usual vaginal incision, except that the incisions do not join at their lateral extremities, but leaves a strip of mucous membrane an eighth of an inch wide intact between them. He then separates the uterus from its attachments anteriorly and posteriorly by the fingers, and till the peritoneum is open, and further passes one finger up along the posterior surface of the uterus in the median line as high as he can reach, separating the adhesions, however, over a tract no wider than the finger, then draws the uterus down with traction forceps applied one at each side of the external os, and splits the anterior wall of the uterus as far as he can see, then attaching fresh traction forceps to the upper angle of this he draws the uterus down farther, rolling out the cut and continuing the incision in the median line through the anterior wall until the fundus comes into view. He then passes a large grooved director up along the uterus posteriorly in the tract laid bare by the finger, and brings it into view in front of fundus, then slits the uterus with a knife on the director so that it is separated into two lateral halves. A pair of traction forceps is then fastened into the fundus of each segment and another pair into each side of the cervix. The right half of the uterus is then shoved high up into the pelvis, the left is drawn down, the adhesions, the adnexa freed until this half of the uterus and broad ligaments is wholly clear. This is then shoved far back into the pelvis, the right half drawn down and the process repeated, except that great care is taken to avoid injuring the appendix in case it should be adherent to the appendages on the right side. When the right half of the uterus and the appendages are thoroughly freed the fundus of this side is drawn strongly downward and the ovarian artery is clasped with a pair of forceps slowly from above downward. The same process is repeated on the other side and the uterus is removed. The strips of mucous membrane left intact in the original incision prevent the broad ligaments from being torn during the annexing. The pelvis is then dried, inspected for hemorrhage, and packed with gauze.

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[5] American Journal of Obstetrics, May, 1899.

THE USE OF THE DOYEN CLAMP.

Dr. Henry P. Newman, of Chicago, Ill.,[6] figures his own modification of Thumin's modification of the Doyen clamp. He has extended the use of the instrument to the removal of the tubes and ovaries, or portions of the ovary, by the clamp instead of by the knife, or scissors and ligature. He reports six satisfactory cases without any objectionable features.

TUFFIER'S ANGIOTRIBE.

The angiotribe is a compressor of the same class with Doyen's clamp.

Dr. I. S. Stone,[7] of Washington, D. C., reports seven cases operated upon with this instrument. He considers the individual instrument an exceptionally clumsy and inconvenient one, but speaks very highly of its virtues. He summarizes his conclusions as follows:

Its field of usefulness. — In all cases where fairly healthy, firm tissue permits its use, the angiotribe as a compressor is nearly perfect in its action. In all necrotic tissues, or in myomatous or omental structures, its work has not been altogether satisfactory, and further study of its action is necessary. There is no reason why the ureters should be endangered by its use in supravaginal hysterectomy. Contrary to what has been predicted by many, the stump is not a mass of mangled and devitalized tissue, but a very small, neat, almost invisible line.

Pain. — The cases mentioned in this report have had almost no pain. The contrast between the suffering of patients treated by the wire clamp and after this method of performing hysterectomy is striking and convincing, and under no circumstances would the writer return to the clamp or wire, or even use *en masse* ligatures. It is not customary to witness severe pain after pelvic operations, where *en masse* ligatures are discarded, and we think patients subjected to supravaginal amputation should have as little pain as after a double salpingo-oöphorectomy.

It has been claimed by some that the angiotribe acts much in the same manner as the écraseur. Surely no one who has seen the work of the two instruments would make such a statement. The same may be said of torsion, which may do very well in amputations, but we would scarcely feel so secure should we use this method of hemostasis in abdominal work.

VAGINAL HYSTERECTOMY WITH DOYEN'S CLAMP.

Thumin[8] reports 31 successful operations in which the broad ligaments were temporarily compressed with an instrument devised by him on the principle of the angiotribe of Doyen and Tuffier. All the operations were bloodless, and the convalescence was uncomplicated. The effect of the great pressure maintained for two minutes before the removal of the clamp, as shown by microscopical examination, is to cause obliteration of the arteries by adhesion of the opposed endothelial surfaces, while the proximal and distal ends are plugged by thrombi — in short, the tissues are mummified but not necrosed.

PERITONEAL ABSORPTION.

Noetzel[9] concludes that the true significance of peritoneal absorption is the removal of part of the bacteria which are present. The peritoneal fluid is the principal agent in accomplishing the result, aided by the peristaltic movements of the intestines. Its bactericidal power is greater than that of any other serous fluids (Gewbssäfte). On the other hand, the peritoneum is exceedingly sensitive to irritation, whether mechanical, chemical or thermic, and in consequence loses its peculiar power of disposing of bacteria. Toxins in particular inhibit its germicidal action. The practical deductions are the importance of avoiding septic infection and mechanical injury to the peritoneum during operation and the withholding of opium in order to favor peristalsis.

ULTIMATE RESULTS OF MYOMECTOMY.

Abel[10] presents a complete record of the abdominal sections for uterine fibromyomata performed by Zweifel from 1887 to 1894. Seventy-one patients were repeatedly examined by the writer during a period of five years, so that he was able to state their exact condition. Many interesting facts were brought out, among them the behavior of the stump after supravaginal amputation (according to Zweifel's method). Contrary to the opinion of those who advocate total extirpation, in only nine cases did suppuration occur, the patients making a good recovery and presenting no local complications in subsequent examinations. Vesical symptoms were less marked than after hysterectomy. The patients were all able to perform their usual work within three months after operation. The question of vaginitis and contraction of the vagina after supravaginal amputation was carefully studied; the former appeared to be due to mechanical causes (difficult coitus) rather than an irritating discharge from the cervical canal. The danger of malignant degeneration of the cervix seems to be so small as to furnish no argument against the operation. According to the writer's observation it undergoes progressive atrophy. A careful study of the cases in which the ovaries were left after removal of the uterus led to the inference that the glands undergo a more or less rapid atrophy, which results in complete loss of their functions before the natural time of the climateric. Glaenecke's statement that atrophy of the external genitals is delayed when the ovaries are preserved was not borne out by the more extended observations of the writer. On the other hand, the phenomena observed resembled the normal rather than the artificial climacteric noted after castration of young women. The average persistence of the menstrual molimen when the uterus alone was removed was eighteen months. Three patients whose ovaries were not removed presented the interesting phenomena of more or less regular menstrvation after supravaginal amputation, persisting in one instance for five years. The writer concludes that it is better to preserve the ovaries whenever this is possible.

BLOOD EXAMINATION IN GYNECOLOGY.

Dr. Walter R. Griess[11] after some judicious observations on the value of the blood examination in cases of doubtful diagnosis, goes on to say:

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[6] American Gynecological and Obstetrical Journal, April, 1899.
[7] Loc. cit., July, 1899.
[8] Centralblatt für Gynäkologie, 1899, No. 5.
[9] Archiv für klin. Chirurgie, Band lvii, Heft 2.
[10] Archiv für Gynäkologie, Band lvii, Heft 2.
[11] American Journal of Obstetrics, August 18, 1899.

The relations of a normal or abnormal temperature to pus tubes and the relations of a leucocytosis to pus formation when a normal or abnormal temperature is present are equally interesting. Should a leucocyte count be made in a woman having an elevated temperature and acute symptoms, with pus tubes, we, as a rule, find a leucocytosis of 15,000 to 25,000 leucocytes to one cubic millimetre. As a temperature becomes normal and the general health improves, acute symptoms subsiding, the leucocyte count will diminish to from 10,000 to 15,000 cubic millimetres. A leucocytosis of 10,000 per cubic millimetre or more in a woman in pelvic pain, after all acute symptoms have subsided, is — eliminating diseased conditions of the blood (*per se*) or of other organs by a careful physical examination and by a careful consideration of the clinical history — indicative of suppuration of some of the pelvic organs. A leucocytosis in a woman with pelvic pain associated with fever of a septic or continuous type is of no great value in making a diagnosis of suppurative disease of the uterine appendages. A simple salpingitis (catarrhal), just as with a catarrhal appendicitis, will produce a marked leucocytosis, but after acute symptoms subside the leucocyte count will again become normal. In this condition a leucocyte count is of value, not as a means of determining the presence of suppuration, but as an aid in making a differential diagnosis. But should a leucocytosis continue after acute symptoms have subsided, then the presence of suppuration is almost certain. It not infrequently happens that the laparatomy is done for the relief of pain from an adherent retrodeviation, and upon opening the abdomen the malposition is found, but then only the true cause is revealed; some small pus tubes, probably thickened and bound down by adhesions, dragging the uterus from its normal position. It is necessary to remove these diseased appendages, but had a leucocyte count been made it might have saved an error in diagnosis. The differential diagnosis between typhoid fever and pus tubes in prostitutes, or in women where a history of some uterine infection exists, is at times extremely difficult, but the presence of the leucocytosis determines the latter and rules out the former.

Too much stress cannot be laid on the fact that all other conditions which might produce a leucocytosis must be considered — tuberculosis in many of its forms, abscess cavities in any other places, suppurative pyelitis, furunculosis. A leucocytosis in chronic Bright's disease is very common, and there are many infectious diseases where its presence is associated with definite clinical manifestations. There are cases with suppuration where no leucocytosis is present. Cases in which the general health and state of nutrition is very low have no leucocytosis as a rule. Cases of secondary anemia rarely show a leucocytosis. Colored women who have pus tubes or pelvic abscesses seem to be especially subject to menorrhagia and metrorrhagia, and in such cases the red count is often reduced to half and the leucocyte count to about one-half of what we would expect. In these cases, knowing the relation of the red and white count, we are not lost in making the diagnosis.

PEPTONURIA IN PELVIC ABSCESS.

Dr. W. Frank Haehnlen[12] states that Brüke's peptone is most frequently present in the urine in cases where there is an accumulation of or breaking up of leucocytes or pus corpuscles, as in stage of resolution of pneumonia, suppurative processes, etc. After enumerating the various conditions in other organs which should be eliminated as offering a reason for the presence of peptonuria, he goes on to report seven cases of pelvic abscess in which the test showed satisfactory results. He sums up by saying that it is interesting to note that in all the cases in which the peptone was found in the urine pus was found in the pelvis, and in only one pus case was there a discrepancy found in the urinalyses.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

J. BERGEN OGDEN, M.D., SECRETARY.

Regular meeting Wednesday, May 17, 1899. Dr. H. F. Vickery in the Chair.

Dr. Franklin W. White reported

A CASE OF TETANY.[1]

Dr. Vickery: If the Society approves we will defer discussion of Dr. White's case until Dr. Morse has shown a patient whom he has brought.

Dr. J. L. Morse reported

TWO CASES OF INFANTILE TETANY.

Myer I., Jew, an only child, when nine weeks old was put on a mixture of barley water and milk in addition to the breast. He did fairly well until the latter part of February, when he had an acute attack of vomiting and diarrhea. He was then put on a rough home modification of milk. I first saw him early in March, when he was seven months old. He had then been having attacks of what, from the history, were laryngospasm. At that time he was fairly developed and nourished, but pale. He had a large rosary and no teeth, but was otherwise normal. The diagnosis of rickets and laryngospasm was made, and he was given syrup ferri iodidi.

He did very well until April 20th. He took his food fairly well, had no vomiting to speak of, and the movements were normal. On that date his parents noted that he kept his hands clenched a good deal of the time, and that the backs of the hands and feet were swollen. On the 21st he had a convulsion. Examination on the 22d showed slight puffiness of the backs of the hands and feet. There was no tenderness over the nerve trunks. Neither Trousseau's nor Chvostek's symptoms could be elicited.

The spasms and convulsions continued and he was admitted to the Infants' Hospital on April 26. The examination on that date was as follows: Head rather large: parietal eminences large; slight craniotabes: anterior fontanelle large and full; no teeth. Marked rosary. Spleen palpable. Epiphyses at wrists large. Puffiness of the backs of both feet. Knee-jerks normal. Facial phenomenon absent. Trousseau's symptom present.

He remained in the hospital until May 8th. During his stay he was on modified milk. There was no vomiting, and the dejections were generally normal. He lost a little weight. The temperature was usually elevated, ranging between 100° and 101°. The urine was normal in color, highly acid, and contained no albumin. The greater part of the time he was completely relaxed, although at times he held his hands stiffly. Twice he had typical spasms, accompanied by evident pain. Trousseau's symptom was absent most of the time when there was no stiffness of the hands. The facial phenomenon was never obtained. Calomel and a diet of albumin water for twenty-four hours twice caused the complete disappearance of all symptoms. Sulphocarbolate of zinc had no apparent action.

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[12] American Gynecological and Obstetrical Journal, June, 1889.

[1] See page 439 of the Journal.

His hands were a little stiff when he was discharged. He was put on a careful and complete home modification of milk. Since then he has taken his food well and has not vomited, but has shown a tendency to constipation. Has been almost constantly rigid, however, and has had many painful spasms. Day before yesterday was his worst day, and when he was seen yesterday morning his hands and feet were strongly contracted in the typical position. He was given calomel, and to-day he is completely relaxed. I had him come here to-night, hoping that he would show the typical contractures. As you see, however, he is completely relaxed. Trousseau's symptom is obtainable feebly on the right but not on the left. The facial phenomenon is absent. [This child was seen again early in October and there had been no return of the symptoms.]

Within the last few days I have seen still another case of this rather unusual condition. Laura P., seven and a half months old, of Nova Scotia parentage, only child, born at full term after a normal labor, was brought to the Infants' Hospital May 12th. She was nursed for a month, then given condensed milk for three months, next cracker and milk for two months, and finally Mellin's food for the last month and a half. Her appetite has always been good, and she has never vomited. She has, however, been very costive. Has gained weight. Has been restless at night and head sweats profusely. She has had spells of noisy breathing for three months. These, judging from the description, were attacks of laryngospasm. She had a convulsion in March and two in April. Also had several on May 4th, 10th and 11th. As described by the mother there can be no doubt as to their being characteristic of tetany. Puffiness of the backs of the hands has been noted off and on for some time.

Physical examination showed a fairly well-developed and nourished child. The head was asymmetrical, the right half being anterior. There was no craniotabes. The anterior fontanelle was small. No teeth. Held head up feebly. Unable to sit alone. Moderate rosary. Slight retraction of the ribs at the insertion of the diaphragm. Knee-jerks feeble. No tenderness over the nerve trunks. Facial phenomenon absent. Trousseau's symptom easily brought out, but only feebly. No puffiness of hands or feet. There was a typical attack of laryngospasm during the examination.

Although I have never seen the typical paroxysmal contractures in this case I have no doubt from the history and the symptoms of increased neuromuscular excitability that the case is one of tetany.

DR. R. C. LARRABEE reported

A CASE OF GASTRIC TETANY.[2]

DR. LIEBMANN: I should like, in saying a few words about gastric tetany, to mention one case described by Professor Fleiner, in Heidelberg, and also another by Albu. Both authors claimed that the tetany in their cases originated, as the reader remarked, in organic dilatation of the stomach resulting from stenosis of the pylorus, either malignant or benign, but they claimed that the disease is not due to reflex action, but to auto-infection, or auto-intoxication, although neither was able to demonstrate a microbe. They do not make light of gastric tetany, and say it is a very dangerous, life-threatening sickness, and so much so that both their cases were operated. Fleiner's case did not survive, but Albu's case got well immediately after the patient recovered from the operation, and he claims that in such cases, where the diagnosis of stenosis of the pylorus can be made, an operation ought to be done. Albu says Fleiner was discouraged by the result of the operation, and would discourage my further attempt at operation in such cases, but wrongly so, he says, because Fleiner's case was not a fair specimen to prove that an operation would not be appropriate in such cases, because in Fleiner's case there was not only the stenosis of the pylorus present, but also disease of the kidney and liver. Of course such complications would contraindicate the operation, but in his case the spasms, which had been frequent and increasing in violence and frequency, and threatening the life of the patient, after the operation the symptoms stopped entirely and the patient got well. I suppose a resection of the pylorus was made; I am not quite sure whether it was a resection or gastro-enterostomy. He furthermore remarks that after the patient was so far advanced in recovery that a tube could be introduced without any danger, the functions of the stomach were examined, and it was found that the motility of the stomach was entirely normal again, but the chemical function of the stomach did not come around. There was in this case entire absence of hydrochloric acid and atrophy of the glands of the mucous membrane, but the motor function of the stomach was entirely restored by the operation.

DR. G. B. MAGRATH showed

PATHOLOGICAL SPECIMENS.

(1) Aorta present ng multiple atheromatous ulcers.
(2) Spindle-cell sarcoma of the vagina.

The first specimen is an aorta removed at autopsy several weeks ago and kept, as many of our specimens are at present for teaching purposes, at a temperature of two or three degrees centigrade. It showed in the fresh state multiple atheromatous ulcers, rather well marked, with a tendency to the formation of mural thrombi. The case was that of a man of sixty-five or seventy, who died of chronic endocarditis. The specimen I brought partly to show the method in which we at present handle these specimens. A good deal of the material we use in teaching pathological anatomy is kept from week to week in the cold-room. That is a very satisfactory method for most of the viscera, notably lungs, liver and kidneys, which preserve their natural color, form and consistency very well.

The second specimen is from a little girl of eight, who died at the Children's Hospital a number of weeks ago with sarcoma of the vagina. The case was in the hospital under observation some weeks, inoperable, and finally died. Histologically, the tumor is a spindle-cell sarcoma originating from the anterior and left wall of the vagina, which, extending downwards, protruded at the ostium vaginæ three or four centimetres, and extended upwards in such a way as to impinge on the bladder and urethra, and finally cause sloughing of the inferior wall of the urethra. There were no metastases in this case, which is quite in keeping with the histological character of the tumor, which tends to grow as a tolerably distinct tumor with far less tendency to metastases than the round-cell type. There was double ureter of the left kidney. The pelvis of the kidney was single.

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[2] See page 440 of the Journal.

I should like to speak briefly of two cases of sudden death which I examined, post mortem, quite recently. One was that of a man of thirty-one, who for some years had had a moderate stricture of the deep urethra. It had not given him much trouble, but latterly he was bothered with it somewhat, and went to a doctor in Boston. On a Monday afternoon a sound was passed and the patient went home. He was not feeling well that night and the next morning called in his family physician. The doctor found him somewhat feverish, but apparently not very seriously ill. He was well enough that (Tuesday) afternoon to walk about the parlor, but about the middle of the afternoon collapsed. The doctor was called in, but by the time he reached him the patient was dead. At the autopsy I found in the membranous portion of the urethra multiple slight lacerations and a false passage leading off into the right bulbocavernosus muscle for three centimetres. This wound was perfectly clean, nothing indicating inflammation, a few subendocardial punctate hemorrhages under the capsule of the liver, otherwise organs normal, no fatty degeneration of the heart or kidneys. Bacteriologically, the organs showed streptococcus in the liver, spleen and kidney. The organism could not be demonstrated in the heart's blood, nor was the culture made from the heart's blood positive. Of course, it was a very rapid death if it were the result of septicemia.

The other was that of a man of forty-one, school teacher, who in the early part of his life had been quite athletic. He had had some attacks resembling angina pectoris, precordial pain of considerable intensity, and enough to cause him to see a doctor about it. The advice was given him to lessen his work somewhat if he could, and he acted upon that advice. On Monday afternoon he had a very severe attack of pain, and later in the day a loss of muscular power in both legs, with loss of sensation. That, however, passed away during the night, so that the next day he had full power of both legs and return of sensation. On Tuesday he was feeling pretty well, and Tuesday night ate a hearty dinner; at midnight he was found dead in bed by his wife. The autopsy the following day showed hemopericardium and rupture of the left ventricle three or four centimetres from the apex, sclerosis of the descending branch of the left coronary artery, infarction of the wall of the left ventricle, softening and perforation, with formation of mural thrombi. There was, in addition, a hemorrhage into the cavity in the spinal canal, extending from the third dorsal to the third lumbar vertebra, which was of recent origin and circumscribed.

Dr. J. W. Courtney presented a paper which was entitled

A CASE OF ATAXIC PARAPLEGIA DEVELOPING UNDER CIRCUMSTANCES OF UNUSUAL INTEREST.[3]

Dr. Knapp: I should agree with Dr. Courtney in pronouncing this case to be not one of hysteria pure and simple. I do not think, however, he has established a diagnosis between multiple sclerosis and ataxic paraplegia. The woman is comparatively young for ataxic paraplegia, and in ataxic paraplegia the association with hysterical symptoms is on the whole rather less common than it is with multiple sclerosis. The slight tremor which he mentions in the hands, the beginning implication of speech, the unequal pupils, are all suggestive of a process invading the central nervous system more extensively, and, as he has said, of a pseudosystemic trouble rather than a true ataxic paraplegia. The case is of interest as showing, however, the not infrequent association of hysterical manifestations with structural disease, to which Séguin years ago called attention and which is very common. The distinction between hysteria and multiple sclerosis is often, as we all know, a matter of exceeding difficulty, and it is a thing to which the French authors, in their vivid and graphic descriptions of hysteria, pay little attention, slighting the work which has been done by Bastian, Buzzard, and other English observers, by the claim that they know nothing of hysteria, and the cases which they claim to be multiple sclerosis are merely hysterical.

I would also agree with Dr. Courtney, in the main, in his belief that genuine ankle clonus, as a rule, indicates structural disease of the lateral columns. I say "as a rule," because I recall certain conditions which Dr. Courtney has not spoken of. In the first place, there is the familiar fact, which was first noted by Hughlings, Jackson, and later by Beevor and others, and which I have myself had the opportunity of observing in a number of cases, that immediately after an epileptic seizure we may get a typical genuine ankle clonus. It may be as persistent a clonus as you ever see, persistent in the fact that the vibrations keep up so long as the foot is kept in the appropriate position, but not persistent in the sense that you can obtain it repeatedly after the convulsion is over: but it is a condition which may last for from fifteen minutes to a half-hour after the cessation of the epileptic seizure.

I say again "as a rule," because I remember a good many years ago, after I had been examining the reflexes, both superficial and deep in a long series of cases, I once saw a young man at the House of Correction who came up in line in the morning for treatment for some trifling disorder — I do not remember whether to have a tooth pulled or for slight sore throat, or to get a dose of salts or simply to get off work by coming up to see the doctor. I examined his reflexes at the time and found a typical and persistent ankle clonus. I then had him wait until I was through with the line, and made a very careful examination of him in all points, and went very carefully into his history without finding anything to explain the clonus. I ordered him to come up the next day. He came the next day and the clonus had disappeared. I may say that that experience has been wholly unique. I could not explain the cause of his clonus then, and I know no reason for it now. I have seen, so far as I remember, no similar case. I do not recall any case of genuine clonus in ordinary hysteria.

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[3] See page 441 of the Journal.

In looking over my notes of the cases of traumatic hysteria, I have found out of 100 cases four in which I had found clonus. In one of them, however, it was doubtful whether it was a genuine clonus. In the other two there were hysterical symptoms, but in one of them there were symptoms leading to a strong suspicion of spinal caries as well; in the second there was a strong probability that there had been either a slight hemorrhage in the cord (such as has been found by Bailey), and the man had also had syphilis, so that there was the possibility of slight spinal syphilis. The third case was one where I should be by no means ready to accept the diagnosis of hysteria, although the patient presented many striking hysterical symptoms. It was a young fellow about twenty-one, who came to the hospital with general weakness, headache, pain in the back and marked disturbances of sensibility, following a blow on the head. I showed him one day to the class, with a typical right hemianesthesia, with a field of vision contracted down to ten degrees. Two days later I showed him again, and much to my surprise I found he had left hemianesthesia. I thought I had made a mistake in my record of the previous day, but the young man himself and the various men at the clinic confirmed me in the note I had made that two days before it had been a right hemianesthesia. The young man said himself it had shifted. He had a field of vision which would vary from ten degrees to fifty, sixty or seventy degrees, but although those symptoms were strongly suggestive of hysteria, he had a steadily progressive optic atrophy, a pretty marked tremor, which — I think Dr. Courtney will correct me if I am mistaken — was of an intention character, and steadily progressive weakness of the legs, and, furthermore, when he was last under observation he had beginning disturbance of speech, all suggesting multiple sclerosis. In other words, I think that we cannot fully accept the French diagnostic rule, especially in these traumatic cases of which we see so many, presenting hemianesthesia, contracted field, etc., that the hemianesthesia and the contracted field are proof of hysteria. The more cases of alleged traumatic hysteria I see the more doubtful I am whether our diagnostic rules are as yet definite. But when there is a genuine and persistent ankle clonus, which this young man presented, I think that we can safely exclude hysteria unless we find the clonus immediately after a convulsive seizure. Whether it may occur after a hysterical convulsion I do not know, but unless we find the clonus immediately after a convulsion it seems to me to rule out hysteria in the diagnosis.

DR. PRINCE: I do not know that I can add anything to what Dr. Courtney and Dr. Knapp have said. I think that Dr. Courtney has well made out his case, certainly so far as the distinction between hysteria and organic disease is concerned. I should agree with him that this is not a case of hysteria. I do think that Dr. Knapp has argued rather strongly in favor of the possibility of its being multiple sclerosis; it may turn out to be such. The main point of the paper is whether it is or is not hysteria. As to this clonus business, as Dr. Courtney and Dr. Knapp have said, there is a great difference of opinion among neurologists, varying from Sternberg, with ankle clonus in 20 per cent. of cases of hysteria, to Gowers and Mills, who hold it to be very rare. Mills has well summed up the varying opinions of neurologists in the article referred to by the reader. In view of such divergence of opinion amongst trained neurologists, I think we cannot dogmatize in this matter, but even Gowers and Mills admit that ankle clonus does occur in hysteria, though exceptionally. For myself I must agree with Dr. Courtney and Dr. Knapp in the value of persistent clonus as a diagnostic sign of organic disease. I have been in the habit of regarding such a clonus as evidence against hysteria, and in this respect I am in accord with Mills. But Dr. Knapp has mentioned one exception, where it has occurred without organic disease, and if there be one exception there may be others. I have not looked up my cases, but I do not at this moment recall an example of well-marked clonus in a case of hysteria; but others have recorded them. Nevertheless when clonus is present I should want very definite corroborative evidence of hysteria before making that diagnosis.

Perhaps the reason for the differences in the observation of neurologists lies in what shall be considered clonus. Three different types of clonus are described, the "persistent," the "short-lived" and the "spurious." These are often confused in discussions, and I think the reader has not made them clear. There is a tendency with some to minimize the short-lived form, though there is no reason to suppose it is not due to the same increase of myotatic irritability, as is the pronounced persistent type. It is only a question of degree. Even Mills found ankle clonus present in three out of 30 cases of hysteria, but adds, as if to offset this, that it was of the "abortive or short-lived form." To say that this is not true ankle clonus is to beg the question. It is probably the presence of this mild form (which I have been in the habit of describing in my notes as a "tendency to clonus") which has led some to regard clonus as more common in hysteria. The "spurious form" is said to be due to a voluntary contraction of the muscles, but as it also is not persistent the distinction of persistence is given prominence as the distinguishing characteristic, and thus the spurious and short-lived forms are unconsciously confused.

As to the question of knee-jerk it seems to me that not enough distinction is made between the different varieties of hysteria. I think the time will come when we shall classify hysteria from the point of view of symptoms on the same plan by which we divide the organic diseases of the brain, that is, by the localization of the underlying process; but until we have an anatomico-physiological theory of hysteria it will be difficult to do so. At the bottom of hysteria there must be a physiological process of some kind, capable of being localized. We certainly get different types of hysteria according to the different parts of the brain affected, and it seems to me that the French school, in insisting that hysteria is only represented by paralysis, anesthesia and stigmata of that kind, have taken too narrow a view of the disease and have limited it to a special class of cases. I think there are many types of hysteria and some in which there are no stigmata of this kind whatsoever. We must believe that the difference depends on the localization of the process, whatever this process is, in the brain. To say, therefore, that in hysteria you must always have diminished or increased knee-jerks seems to me the same thing as saying that in organic disease of the brain you must always have increased or diminished knee-jerks, always have paralysis or anesthesia. That would depend entirely upon the localization as well as the nature of the process. So it seems to me it is with hysteria. I think the statistics of my cases would bear out those that Dr. Courtney mentioned, that in hysterical paralysis the knee-jerks are usually diminished on the paralyzed side — not increased as in organic paralysis. On the other hand, in other forms of hysteria where there is no paralysis, where possibly the frontal lobes or some portions of the brain which are not the motor centres are affected, we may have increased knee-jerks from lack of control. In the pure neurasthenic type the knee-jerks are certainly as a rule increased. But we are not yet prepared to say exactly what is the localization of the process in which we get increased or diminished reflexes in hysteria, but it will vary undoubtedly with the location of the process, as in organic disease. Hysteria must depend upon local processes in the brain and with the differentiation of these local processes we shall be able to say with what particular local seats we get increased or diminished knee-jerks. In hysterical hemiplegia we have, in my experience, diminished and not increased knee-jerks, which is in agreement with the statements of French writers.

Dr. Knapp: I should disagree with both Dr. Prince and Dr. Courtney in regard to the diminished or normal knee-jerk in hysteria. In the great majority of cases in my experience it is exaggerated.

Dr. Prince: In the monoplegias and hemiplegias?

Dr. Knapp: In the great majority of all cases of hysteria the knee-jerk is exaggerated, and it has been my experience as a rule that the knee-jerk is more exaggerated upon the paralyzed side in cases of hysterical hemiplegia. There are two opinions brought forward in regard to that, Charcot's and Weir Mitchell's: Charcot having found it as a rule exaggerated and Weir Mitchell in some cases diminished upon the paralyzed side. I have found both forms, but more frequently exaggeration than diminution upon the paralyzed side.

This whole question of the types of hysteria which Dr. Prince has brought forward has been worked out pretty thoroughly, as far as paralysis goes, by Bastian several years ago in his book on functional paralysis. Of course the whole thing is a question of degree. Following a suggestion made by a writer in the *Lancet* some years ago, the variations of the knee-jerk may be classified into four or five degrees: First, complete absence of the knee-jerk, due almost invariably to some structural disease causing a break in the reflex arc. The next degree is the knee-jerk which can be obtained only by reinforcement; then the ordinary knee-jerk; then, fourth, the first degree of exaggeration, associated with a symptom which I have been in the habit of speaking of as patellar twitch — a quick contraction of the quadriceps which seems to be the first stage of exaggeration. Front-tap contraction comes next, and in any case of lively knee-jerk you may also get the ankle phenomenon, which is not so constant a symptom in health. After a front-tap contraction you get a spurious clonus, which is easy to distinguish from the ordinary clonus by the fact that the spurious clonus stops after a dozen or fifteen vibrations, but the genuine clonus keeps on so long as you keep the foot extended. The highest degree is the genuine clonus. The two extremes in the scale I believe almost invariably point to some structural change in the reflex arc; in the case of loss of knee-jerk to a break in the peripheral neurons; in the case of the ankle clonus to a break in the central neuron of the pyramidal tract. Of course in many of the cases of ordinary hemiplegia we get only the exaggeration of the knee-jerk, not going on to a true clonus, and sometimes not even a spurious clonus. We may get the ankle phenomenon in these cases of ordinary hemiplegia, or patellar twitch, or front-tap contraction, with lively knee-jerk, but it is, I should say, rather the exception than the rule that the ordinary hemiplegia shows that degree of spasticity which is attended by a genuine and persistent clonus, and such cases are the bad ones which develop the late contracture. Fortunately the marked contractures in hemiplegia are less common.

Dr. Prince: I think Dr. Knapp must have misunderstood what I said about working out these types of hysteria on the basis of cerebral localization. I was talking about different types of *hysteria*, not of hysterical paralyses alone. These never have been worked out, because nobody knows anything about their localizations. The data do not exist upon which to work them out. From the point of view of cerebral localization, therefore, I think I am right in saying this work remains to be done, because nobody knows anything about it. Sollier has done more in this direction than any one else, but while I believe he is probably right in his view, which I have also advanced, as to the nature of the physiological process, namely, that it is of the same character as that of sleep, still his views of the localization of the process are open to question. The different types of paralysis are well known. They will be found described in any good text-book.

Dr. Courtney: There are one or two points I want to take up in conclusion. Dr. Knapp objects to the diagnosis of ataxic paraplegia and favors *scléroses en plaques* on the ground, first, of age, and, in the second place, of the disturbance of speech and the tremor. This case is thirty-six years of age, and as I remember the classical description of Gowers, he states that the disease is most common between the ages of thirty and forty. He also makes special mention of the fact that the speech may be a trifle slow; not exactly scanning, but approaching scansion. As for the tremor, I look upon that as another manifestation of the pseudosystemic character of the disease — an irregularity in distribution similar to that which accounts for the disturbance of the sensation present. As to the question of the ankle clonus, the spurious type, which has been cited in diseases other than organic, simply fulfils one of the requirements which, to my mind, go to make up a genuine clonus, that is to say, it is persistent at one time, but not at all times, and a clonus which may be persistent after an attack of epilepsy, for instance, certainly would not be present within a week or ten days of that attack. The question of the muscle tonus in cases of hysteria was interestingly brought out in the discussion of Dr. Mills's paper. Dr. Dana spoke of 25 cases he studied two or three years ago, and in the entire number he found the muscle tonus very low, the knee-jerks being diminished rather than increased. One final point not touched upon is this: It seems to me that a distinguishing feature between hysteria and neurasthenia is that in the latter the muscle tonus is apt to be very high and there I am never surprised to find not only patella-jerk and front-tap contraction but also spurious clonus, a condition more in line with our idea of the essential feature underlying the neurasthenic state, namely, an irritable weakness of the cord centres, especially the reflex centres, and such weakness is, in my opinion, foreign to hysteria.

Recent Literature.

The Gross and Minute Anatomy of the Central Nervous System. By H. C. GORDINIER, A.M., M.D. Pp. xxvi, 589. With 48 full-page plates and 213 other illustrations, many of which are printed in colors. Philadelphia: P. Blakiston, Son & Co. 1899.

It is a somewhat singular and by no means creditable fact that there is no good modern work on the anatomy of the nervous system in the English language, and that only one or two of the smaller foreign works have been translated. A few excellent monographs on special portions of nervous anatomy exist, but for the most part the English-speaking student has had to resort to the works on general anatomy, many of which, with a few notable exceptions, deal with the nervous system in a very unsatisfactory way. As there can be no accurate understanding of the diseases of the nervous system without a thorough knowledge of the anatomy, it is no wonder that the average practitioner is as ignorant of neurology as is unfortunately the case. The present volume is a praiseworthy attempt to remove the reproach that has thus far rested upon English and American neurology. It can hardly be regarded as an original work, but it gives a concise, tolerably clear and in the main fairly satisfactory account of the gross and minute anatomy of the central nervous system. The opening chapter, however, on the histologic (*sic*) elements of the nervous system, is disappointing. No note is taken of the recent histological researches of Apáthy, Bethe, Held and others, and the importance of the neurone as the anatomical unit in the nervous system is not emphasized; indeed, by the position of topics in the chapter and the faulty typographical arrangement, which gives to every topic an equal heading, the neurone is subordinate to its constituent parts. The subsequent chapters are better, although the same defect in typographical arrangement obtains throughout. Many of the illustrations are original, and the work of reproduction has been excellently well done. The selection of illustrations, however, has not always been fortunate. Although the student should be trained to study nature yet we believe that in the study of so complicated an organ as the brain reproductions of photographs of the convolutions and sections of the brain should be supplemented by diagrams, and the diagrams chosen for this purpose are insufficient in number and not well selected. In the study of the convolutions, for example, the distinction between fissures and sulci is not drawn and no reference is made to the exact location of Broca's convolution. In the horizontal sections the representation of the basal ganglia is not always clear, and the external capsule is unmentioned. No good diagram of a frontal section of the cerebrum is given. On the other hand, we have a profusion of microphotographs of cells stained by the Golgi method — excellent in themselves but certainly of little utility to the student. In certain diagrams, too, where color would add greatly to the clearness, as in the diagram of the cerebellar peduncles, on page 205, color is not used. For a text-book to aid the beginner in the study of the anatomy of the nervous system the author has failed to take advantage of two features in instruction which serve as a most excellent aid for the student. By emphasizing the importance of the neurone as the anatomical unit and by bringing into especial prominence the long conducting tracts for motion, sensation, etc., as made up of chains of neurones, the beginner is enormously aided in obtaining a general conception of the architecture of the central nervous system. These subjects are, of course, discussed in the volume before us, but they are not brought into sufficient prominence. The embryology of the nervous system, which throws so much light upon the anatomy, instead of introducing the subject, is put in a subordinate position at the end of the book. A needless chapter on localization and a concise account of the more important methods of technique conclude the book. The mechanical execution of the book is otherwise so good that we fear the author is responsible for the persistent misspelling of proper names, which proves a blemish, such as "Eskeridge," "Monk" and "Ramon y'Cajal." The author, too, is responsible for such mutilations of speech as "histologic" and "anatomic." In spite of certain defects in plan and execution which we have criticised at some length, the book remains a useful manual, good enough to cause us to regret that these defects exist which prevent its being better.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science. By leading authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D. In twenty volumes. Vol. XVI, "Infectious Diseases." New York: William Wood & Co. 1899.

Vol. XVII preceded Vol. XVI in this series. The present volume, XVI, treats of lobar pneumonia, cerebro-spinal meningitis, dysentery, fevers, inflammation, erysipelas, simple continued fever, relapsing fever, typhoid fever (etiology or general pathology), typhoid fever (symptomatology and treatment). This volume has 785 pages. The first article, on lobar pneumonia, by Dr. Andrew H. Smith, of New York, is a complete and valuable presentation of this very important subject. Dr. Netter, of Paris, deals with cerebro-spinal meningitis in the second article, of 82 pages. This writer has devoted much special study to this disease, especially to its bacteriology and pathogenesis, and more particularly as manifested in its sporadic form; his article also shows that he is well acquainted with the literature of his subject. He has among other memoirs had access to the important report of the Massachusetts Board of Health, by Councilman, Mallory and Wright. He confesses that many points in regard to the disease remain very obscure, and that bacteriology has still left more than one point unsolved. Netter does not agree with Jaegar and Heubner that the diplococcus intracellularis is the sole pathogenic agent in the epidemic cerebro-spinal meningitis, or that the pneumococcus has no influence in its production. Neither does he agree with Wentworth that pneumococcal meningitis is always fatal in contradistinction to the diplococcal meningitis. The etiology of this disease remains more obscure than its pathology or bacteriology.

The last articles of this volume are devoted to typhoid fever, and in correspondence with the importance of the subject occupy 200 pages. Dr. Thacher, of New York, pathologist to the Presbyterian Hospital, deals with its etiology and pathology, and Dr. Brannan, of New York, physician to Bellevue Hospital, discusses its symptomatology and treatment. Both departments of this subject have been entrusted to competent hands. In the pages concerning the history of the disease the labors and the influence of Louis in the elucidation of the especial characteristics of typhoid fever might perhaps have been emphasized a little more.

In a divided treatment of one subject some repetition, as in the pages on perforation, is perhaps inevitable, although a cross reference would avoid a duplication of tables. Brannan accepts the Widal test as in accord with the clinical diagnosis in about 95 per cent. of the cases. The pages on treatment are well up to date. Careful consideration is given to the eliminative treatment, which was practised in its antimonial form by our predecessors in the first third of the century, and of which the Woodbridge treatment is a recent example. Brannan has been rather favorably impressed by his investigations of this treatment, though he would apply it in a less complicated manner than set forth by Woodbridge. He thinks the percentage of mortality would compare favorably with that resulting from cold baths. Keen's conclusions as to operation after perforation are reproduced.

The article on dysentery is by Todré, of Rio de Janeiro; that on fevers by Nicholls, of Dominica; on inflammation, by Ziegler, of Freiburg; on erysipelas, by Kiliani, of New York. The article on relapsing fever is by Popoff, of St. Petersburg, and is very complete.

This volume, as a whole, is a valuable one, and is a distinct addition to the series.

The Diseases of the Nervous System. By Ludwig Hirt, M.D. Translated by August Hoch, M.D., and Frank R. Smith, A.M., M.D. Second edition. Pp. xvi, 716. With 181 illustrations. New York: D. Appleton & Co. 1899.

Although the present work was first presented to the American public in 1893, under high endorsement, it was by no means the best German treatise on nervous diseases that existed in 1889, the date of publication of the original work. At that time we recognized that it had certain merits. The present work, however, is thoroughly out of date. Although dated in 1899 it is a translation from the German edition of 1894, which in spite of the "many changes" announced by the author, was in reality only slightly changed from the first edition. The chapter on tumors of the brain, for example, was revised (!) by a reference to five individual cases and to one article, and the section on treatment is thoroughly inadequate, with scarcely a reference to operation. The chapter on syringomyelia ascribes the clinical discovery of the disease to Morvan (!). The chapter on tabes says nothing of gymnastic treatment. In fact, the deficiencies of the book throughout are so great as to render it an unsafe guide for the student or practitioner. It is to be regretted, with the large number of excellent works on nervous diseases still inaccessible to the English reader, that a second edition of a work so behind our present standpoint of knowledge should be published.

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HIGHER MEDICAL EDUCATION.

One of the most hopeful signs in medical education at the present time is the fact that other elements than the purely practical application of knowledge to the treatment of disease are entering more and more into the curriculum. This is highly beneficial, in the first place, because it will ultimately lead to more accurate and hence more successful methods of treatment, and in the second place, because it tends to elevate the standard of medical education to a level comparable with other branches of abstract knowledge. It is quite unnecessary to make any invidious distinction between practical and scientific, as is too often done nowadays; we desire merely to lay stress upon the fact that theoretical and experimental methods must always antedate practical application. It is only in this way that significant progress in medical knowledge and hence in medical practice is made, as may be seen by reference to the history of antisepsis in surgical procedures, or of antitoxin in the treatment of diphtheria. These are gains in knowledge which are permanent, because they rest upon principles capable of valid demonstration.

It is therefore desirable that a higher education in the true sense of the term should be cultivated in our progressive medical centres. Stimulus should be offered for research in the medical sciences, as it is, and has been for many years, in other departments of knowledge. The proposed plan of establishing a school of comparative medicine as one of the departments of Harvard University is a step in the right direction. One of the chief aims of such a school would be to promote and encourage original research of a high order in those sciences which belong in a broad way to medicine. In his address on "Knowledge and Practice" before the Yale Medical School, delivered last June, Prof. C. S. Minot bewailed the small opportunity given the student of medicine to perfect himself in subjects connected with the more theoretic aspects of his work. He writes as follows:

"We must provide post-graduate instruction, with courses thoroughly systematized and correlated, covering at least two years, to qualify men to become professional investigators in the comparative sciences of morphology, physiology, pathology, bacteriology, preventive medicine, etc. It is remarkable that these sciences have never reached a university standing. It ought now to be secured. If a young man wishes to make a scientific career, if his interest is chemistry, physics, botany or zoölogy, he is received at one of our universities, started upon a well planned course properly systematized, he gives for two or three years most of his strength to his main subject, but he follows probably two cognate subjects as minor studies, and at the end of his time, if successful in his work, he receives a degree, which attests his proficiency in his special science. Should the same young man elect to study one of the medical sciences, physiology, pathology or bacteriology, no university will give him corresponding recognition. The utmost he can find is opportunity for advanced work in his special subject, but with no university guidance, no plan of correlated studies, and he can look forward to no degree, nor even to a certificate from the university."

Prof. W. H. Howell, in a letter to *Science*, takes exception to this extreme statement of Professor Minot's and makes the following assertion: "In this University (John Hopkins) from its foundation in 1876, physiology has been given complete university standing. Its courses are co-ordinate in every way with those in chemistry, physics, botany or zoölogy, and many students have offered it, after three or more years of continuous study, as a major object for the degree of Doctor of Philosophy. The same may be said with regard to pathology and bacteriology. I speak only for the Johns Hopkins University, but there are other universities in this country in which physiology is also accorded every privilege in the philosophical faculty."

We think, too, that Professor Minot has gone rather far regarding Harvard University. Conservative as the University has been in this matter of encouraging research in the medical sciences by refraining to bestow the higher degree of Ph.D., there has manifested itself within the last few years a more liberal spirit, so that it is now possible for a properly prepared man to qualify for that degree in several at least of the departments of medicine included under the general head of biology. The previous requirement of residence in Cambridge for a part at least of the term of study has also been modified. Our feeling is, that had there been more demand on the part of medical men for this higher degree the University would before have made provision for it. The Johns Hopkins University has, however, been a pioneer in the recognition of the dignity of the medical sciences as worthy of a high academic degree.

The general fact nevertheless remains, as pointed out by Professor Minot, that universities in general have been exceedingly slow in establishing a standard for investigation in these sciences. There is, however, small question that that time is past, or at least is passing, and that the vigorous demand for academic recognition, through the bestowal of a higher degree, will hereafter meet with a ready response from university authorities. More than in most departments of work, we need in medicine broadly educated men, and we may hardly expect universal recognition as a learned profession until we have a large number of special students working for highest academic recognition. It is from the efforts of such men that real progress is to be expected.

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QUARANTINE REGULATIONS.

The question of quarantine is always one of interest. As our knowledge of infectious disease has grown there has been a certain tendency to exaggerate the dangers of transmission of such diseases to the detriment of the individual and the community. A good example of this over-scrupulousness is the recent attempt in California to lay down quarantine regulations regarding tuberculosis. Fortunately, this altogether unreasonable and unjust scheme has met with the defeat which it deserves. When, however, we come to the consideration of other diseases recognized as being more highly contagious or infectious, it is evident that the problem becomes a very complicated one, with respect to securing the maximum of safety with the minimum of interference with trade.

The details of the question have recently been discussed by Dr. H. R. Carter, of the Marine-Hospital Service, in a document submitted to the surgeon-general of that department, with regard to yellow fever, a disease which is likely to claim a considerable degree of our attention in the immediate future.

Prior to 1897 it had been customary to prohibit the shipment of all merchandise from a town infected with yellow fever, regardless of the nature or extent of the infection. Such a sweeping regulation was manifestly unjust and unnecessary, and in 1897 it was modified at New Orleans to permit of the shipment of certain varieties of freight from the infected town, thereby preventing a complete stagnation of trade. The general principles upon which such a provision is made are as follows: "That in deciding on the imposition of any quarantine measure a balance should be struck between the risk obviated by its adoption and the loss which the measure entails; that we must thus not only consider whether a measure obviates a risk, but whether it entails a loss, and the relation between the two; that in measures of quarantine we do not ask for absolute safety; that it is unattainable, and it will frequently happen that the measures necessary to obviate small risks entail a loss on the communities adopting them greater than the risks thus obviated justify. These restrictions are not in such cases to be imposed."

It is evidently a matter of great delicacy, and requiring a high degree of knowledge, to determine with fairness between risk to health and loss to trade. Health must always be first considered, but health is not always promoted by stringency; it has, for example, been suggested that very rigid quarantine restrictions, especially if continuing over a considerable time, are sure to involve greater risk to health by the amount of illegitimate communication to which it gives rise. On the other hand, looseness of quarantine regulation is a manifest menace to public health. The recognition of the two sides of the question has led to a careful study of the means of conveyance of infection, and it has been shown that yellow fever is most frequently conveyed from infected places by persons and personal effects, the latter already infected and the former having the fever in the stage of incubation. Articles of merchandise other than personal effects very rarely convey infection. The elements of danger in the shipment of merchandise are a combination of three factors: its exposure to infection; its ability to receive and convey infection, and the measures adopted to free it from infection if exposed. A proper weighing of these elements should in most cases lead to the proper precautionary measures. The classification of merchandise for shipment is now based on the following provisions:

"Articles of merchandise requiring more than superficial disinfection should, as a rule, be prohibited. Practically only superficial disinfection is undertaken. Articles of merchandise requiring more than this should, save in exceptional instances, be prohibited shipment. Not that they are not safe if disinfected, but that it is in general not commercially advisable.

"Articles should not be shipped from dwellings, nor from places contiguous to dwellings, nor from any place believed to be infected.

"All articles shall be new, clean, and dry.

"When fever exists in a sporadic form, merchandise under the above conditions can be shipped.

"The chance of any merchandise, except goods from the few infected residences, conveying infection is *nil*, and there need be no bar on any kind of merchandise fulfilling the above conditions.

"When fever is more than sporadic, but not general, merchandise of the above character may be shipped from the wholesale district of the city, except such as from its liability to infection would be especially apt to conserve it, such as fruit, vegetables in open crates, straw, sawdust, excelsior, and similar articles used for packing. These articles can be shipped only if they have been preserved from possible exposure to infection or have been disinfected. There is still no reasonable risk in merchandise shipped under the above conditions."

Investigations with practical conclusions of this sort are evidently of the greatest value. One's experience need not be extensive to recall instances of the greatest discomfort and annoyance, resulting from over-stringent and quite unnecessary quarantine regulations. Anything which can reduce this source both of personal and commercial annoyance to a minimum demands encouragement, and such work as this of Dr. Carter's will no doubt help greatly toward a rational treatment of the whole quarantine problem.

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PROTECTIVE INOCULATION AGAINST TYPHOID.

SURGEON-GENERAL STERNBERG has recently been approached with reference to adopting the system of protective inoculation against typhoid fever now being carried on with British soldiers prior to their embarkation for South Africa and India, as well as among those already in the latter country. The results in the British service are reported as being very satisfactory, although as yet sufficient data for scientific conclusions are not available. As one instance quoted, it is said that of 200 attendants at the Maidstone Asylum during the recent outbreak at that place 95 were inoculated. Of these none contracted the fever, while of the remaining 105 there were 19 so affected.

The inoculation in the British service is not compulsory, but company commanders are urged to endeavor to induce the men to permit themselves to be inoculated and a large proportion have submitted to the operation. The percentage of enteric fever in the British service will be watched for with interest by all military sanitarians and should it turn out to be unexpectedly small in the present war with the Boers, it is more than likely that other countries sending their troops to regions where typhoid fever is unusually prevalent will follow the example set in the British service. In our own army, as yet, no definite steps have been taken, but the question is undergoing careful investigation.

MEDICAL NOTES.

QUININE FOR THE ARMY.— It is said that the Government has recently ordered from a wholesale drughouse 7,500,000 grains of quinine for the use of the United States Army.

MEDICAL OPPORTUNITIES IN THE NAVY. — It is stated that there is at present a good opportunity for doctors desiring to enter the naval service. There are a number of vacancies for the grade of assistant surgeon.

ANNUAL LECTURE OF THE CHICAGO SOCIETY OF INTERNAL MEDICINE. — The annual lecture before a joint meeting of the Chicago Society of Internal Medicine and the Chicago Medical Society will be delivered by Dr. J. G. Adami, of Montreal, November 29th.

CALIFORNIA NOT TO BAR CONSUMPTIVES. — The State Board of Health has decided not to quarantine California against the consumptives of other States. It has adopted a resolution, however, recommending that in all State institutions those afflicted with tuberculosis be separated from the other inmates. This is a very sensible modification of the radical measures of absolute exclusion of all consumptives at first proposed. While tuberculosis is undoubtedly contagious, it is not so to such a degree as to make quarantine regulations advisable. We are quite in accord with the *Medical News*, from which we quote the above statement, in the opinion therein expressed.

Hospitals for Consumptives not a Source of Danger. — The following resolution, signed by Sir William Broadbent, has been passed by the Council of the National Association for the Prevention of Consumption: "Having understood that apprehension is entertained as to the spread of consumption from sanatoria established for the treatment of this disease, the Council of the National Association for the Prevention of Consumption desire to express their opinion that there is no danger of communication from any well-conducted hospital for consumption, or from any sanatorium where the open-air treatment for this disease is properly carried out; and, further, that the inhabitants of houses in the immediate neighborhood of such institutions are perfectly safe from local propagation from this source." — *Lancet.*

Indigent Consumptives in Colorado. — Active measures are being taken by the Charity Organization Society of Denver, says the *Medical Record*, to lessen the practice of sending indigent consumptives to Colorado. It is charged that physicians in the East advise the removal of patients having no reasonable expectation of benefit from the climate of Colorado, or who have no means to support themselves while getting something to do. These people without money soon become a burden to the charitable societies, and must be supported or returned to their homes at public expense.

Sir William MacCormac and Mr. Frederick Treves. — Sir William MacCormac and Mr. Frederick Treves have offered their valuable services to the British Government in South Africa and their offers have been accepted. Sir William represents the National Society for Aid to Sick and Wounded in War.

Death of the Bishop of Bloemfontein. — Bishop Hicks, of Bloemfontein, Orange Free State, died there October 11th, on the eve of the opening of hostilities with England. He originally graduated in medicine in London. He did not enter the church until 1871, when he was thirty-one years old.

Hospital Ship for Use in South Africa. — It is said that certain American women residing in London, under the leadership of Lady Randolph Churchill, have organized for the purpose of purchasing and equipping a hospital ship for use in the war in South Africa.

Anti-British Feeling at Continental Health Resorts. — The *Lancet* comments editorially upon the marked access of bitter feeling against the British which the Transvaal War has aroused on the Continent — especially among the French, Swiss and Italians — and characterizes it as incredible. Comparison is made with the similar scarce suspected avalanche of jealousy and uncharitableness which the Fashoda incident and our war with Spain seemed to draw down upon the Anglo-Saxon in general. The conclusion is that "It will be no loss to Great Britain, heavy as it may be to the hotel interests abroad, if this renewed and aggravated outburst of anti-British feeling in the Sunny South conduces to a trial of health resorts at home, followed by an appreciation and a development of them which have for far too long been withheld."

Alvarenga Prize of the College of Physicians of Philadelphia. — The College of Physicians of Philadelphia, through its secretary, Thomas R. Neilson, M.D., announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about $180, will be made on July 14, 1900, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the secretary of the college on or before May 1, 1900. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1899 has been awarded to Dr. Robert L. Randolph, of Baltimore, Md., for his essay entitled "The Regeneration of the Crystalline Lens — An Experimental Study."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, November 1, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 59, scarlatina 26, measles 4, typhoid fever 24.

Thomas L. Jenks, M.D. — Dr. Thomas L. Jenks, well known for many years in public affairs in Boston, died suddenly October 31st. He was born in Conway, N. H., in 1830, and was graduated from the Harvard Medical School in 1854. During the Mexican War he was hospital steward in the navy. He was a member of the Boston Common Council; was in the Legislature as a member of the House in 1870 and 1876. Subsequently he was elected trustee of the City Hospital for five years. He was chairman of the Board of Police Commissioners from 1882 to 1885. He had been president of the College of Pharmacy and was president of the North End Savings Bank of Boston at the time of his death. In 1889 he was appointed chairman of the Board of Commissioners of Public Institutions, and resigned in 1893. During his administration many improvements were instituted. He was a laborious, faithful and economical administrator of the trusts which he assumed.

Meeting of Massachusetts Boards of Health. — The quarterly meeting of the Association of Boards of Health of Massachusetts was held at Leominister, October 26th. Two papers were read, one by Dr. H. W. Hill, of Boston, on "Rapid Diagnosis in Diphtheria by Swab Examinations," and one by Dr. F. L. Morse, of Worcester, on "Infection of Milk and other Articles of Food by Typhoid Bacilli."

Resignation of Dr. J. C. Warren. — At the annual meeting of the Corporation and Board of Managers of the Massachusetts Charitable Eye and Ear Infirmary, Dr. J. Collins Warren, President of the Board, resigned, and Dr. John Homans, 2d, was elected to fill the vacancy.

Small-Pox in Chelsea, Mass. — Three deaths from small-pox have been reported from Chelsea. There have been more than a dozen cases during the present appearance of the disease. Rigid quarantine precautions are being enforced, and free vaccination has been instituted.

Cambridge Schools not to be Closed. — It has been rumored that, owing to the prevalence of diphtheria in Cambridge, it would be necessary to close the schools temporarily. The rumor is without foundation. Special precautions are, however, being taken to insure against a possible spread of the disease.

Cambridge Homes for Aged People. — The new building of the Cambridge Homes for Aged People on Mt. Auburn Street, Cambridge, was dedicated last week. Addresses were made by the Hon. Jabez Fox, Chairman of the Board of Directors; Mayor Champlin, Judge John W. Hammond and President Eliot, of Harvard, also spoke.

The Free Hospital for Women. — The past year, as announced at the annual meeting of the corporation of the hospital, has been one of the most prosperous in its history. From October 1, 1898, to October 1, 1899, 236 patients have been treated; seven nurses have been graduated from the training school. Dr. F. H. Davenport has been retired at his own request from the active work of the hospital, and has been appointed consulting surgeon.

NEW YORK.

New York State Medical Association. — The following officers were elected for the ensuing year: President, Dr. E. D. Ferguson, of Troy; Vice-Presidents, Drs. Charles H. Glidden, of Little Falls, J. M. Farrington, of Binghamton, and J. C. Bierwith, of New York; Treasurer, Dr. E. H. Squibb, of New York; Members of the Council, Drs. W. L. Ayer, Douglas Ayer, E. M. Lyon, Charles Munger, M. W. Townsend and F. H. Wiggin.

Recent Bequests to Medical Institutions. — The following bequests have recently been made to medical institutions in New York: By the will of the late Cornelius Vanderbilt, $50,000 to St. Luke's Hospital; by the will of the late Judge Charles P. Daly, $5,000 to the Northern Dispensary; by the will of the late John O'Brien, the banker, $2,000 each to St. Vincent's Hospital and the New York Foundling Asylum.

Increase of Tuberculosis among Hebrews. — At the twenty-fifth anniversary of the United Hebrew Charities, held on October 25th, Dr. L. K Frankell, general manager of the association, dwelt in his report on the alarming increase of tuberculosis among the Hebrews of the crowded tenement districts, and stated that owing to inadequate sanitation and the absence of proper interference on the part of the authorities looking to the isolation of subjects of the disease, all attempts of the society to alleviate suffering caused by consumption had been practically futile.

An Unfortunate Mistake. — Michael Hatal, a Hungarian magician, was mortally wounded in the chest while giving a performance in an East Side hall, on October 28th. He was doing the trick of apparently catching in his hands a rifle ball fired at him, and by a blunder the rifle used was loaded with a ball cartridge instead of a blank one.

A New Dam and Reservoir for Jersey City. — On the recommendation of the engineer for the Board, the Street and Water Board of Jersey City has concluded a contract for the construction of a dam and reservoir for supplying the city, to be situated on Rockaway River, near Boonton, N. J. The reservoir will have a capacity of 50,000,000 gallons daily, which can be increased to 75,000,000 when necessary. The tributary water-shed has an area of about 121 miles. The dam will have a height to full-water level above the present bed of the river of 100 feet, or 302.42 feet above high-water mark at Jersey City, and to increase the capacity of the reservoir to 75,000,000 daily it will only be necessary to raise the elevation of the dam to 320 98 feet.

Closing of Schools at Princeton. — The public schools of Princeton, N. J., have been closed for two weeks on account of the appearance of diphtheria in several parts of the town. Professor Brackett, Chairman of the State Board of Health, is authority for the statement that the disease is of a mild type and that it is not believed that many more cases will develop; but it was thought best to close the schools temporarily, as there was reason to suppose that the disease had been diffused by the children attending them.

Miscellany.

FLEAS AND THE TRANSMISSION OF PLAGUE INFECTION.

The rat, as stated in the *Medical Press*, according to Hankin, is the animal by which plague infection is conveyed. But the question which has for some time exercised the minds of the plague authorities is: How is the disease transmitted from the rat to man? A good deal of evidence has lately been collected showing that the agent of infection is the flea. Fleas are said to infest rats which are dying of plague, and bacilli, corresponding to the plague bacillus, have been discovered in the intestinal contents of fleas obtained from such rats. Again, fleas from plague-afflicted rats have been made the means of communicating the disease to healthy rats; all the experiments, then, undertaken to test this flea hypothesis, have tended to show, almost without doubt, that the flea plays a most important rôle in the dissemination of plague.

THE PATIENT STOMACH.

UNDER this heading the *Medical Press and Circular* makes the following feeling remarks. It is a comfort to realize that we are not all so indiscreet as here depicted:

"The rush of modern civilization leaves little time for the average man to think of anything outside the immediate tether of his own absorbing pursuits. He is content to eat, drink, sleep, and take his pleasures as they come, without encroaching upon the period of his scant recreations by such solid labor as that involved in consecutive thinking. In this way eating and drinking are regarded much as breathing or the complex nervous and muscular acts that take place in walking or talking; all are accepted as matters of course. Indeed, it is just this easy way of treating vital functions that only too often leads to their abuse. Let the reader pause for a few moments and think how he treats, and has been in the habit of treating, his own patient stomach. Does he begin the day with a heavy breakfast, including several cups of strong tea? Does he take a meat luncheon, with wine or other alcoholic drink? Does he indulge in afternoon tea and wind up with a dinner of half a dozen courses, tempered with more alcohol? If a man, does he distribute odd alcoholic drinks over the whole day's programme? If of either sex, is tobacco included in the daily trials of the stomach? A steady course of public dinners would, in time, ruin the digestion of a rhinoceros or an ostrich. The three square meals a day of the average country house quickly upset the digestion of the visitor, who is used to think highly and live plainly. Indeed, no great intellectual activity can be permanently associated with gluttony. The amount of abuse the modern civilized stomach can withstand is an eternal monument to the perfecting powers of the evolutional survival of the fittest."

THE CYCLE AS AN INSTRUMENT OF DIAGNOSIS.

IN a recent issue the *British Medical Journal* publishes the following protest, to which we would most heartily assent:

"We believe that there is a law against scattering poison broadcast, even though the excuse may be that it is only meant for rats. So far, indeed, has the general doctrine that it is illegal to do even a legal act if it is likely to do injury been carried that the scattering of tin tacks on the high road has become a punishable offence, lest, perchance, some cycle tyre may thereby be pricked; and we cannot but feel that if the same principle could be put into operation against those reckless persons who give advice on medical topics, absolutely destructive and poisonous advice, in the lay press, much good would be done. The following pernicious bit of advice seems to have originated in a periodical called *Wheeling*. It was then copied into the *Wheelman*, from which we take it, and no doubt by this time has been reproduced in every cycling journal all round the world. All sorts of people are anxious about their hearts. To anemic girls and bashful youths, to atheromatous old gentlemen and flatulent ladies, to the foolish and the wise, the question not infrequently arises, Is my heart sound? and this is the way in which *Wheeling* would have them solve the question:

> The cyclist who has doubts as to the strength of his heart may easily put the matter to the test by riding up a steep hill as far as possible, and if there is any heart weakness a sharp pain will strike him in the back, between the shoulders. If the pain does not appear, the cyclist may take it that his heart is practically sound.

"Could anything be more absurd? and could anything be more dangerous? The occurrence of such a pain would not be the slightest proof of the existence of either disease or "weakness" of the heart, and if it sent a few anxious anemics and dyspeptics to the doctors no harm would be done. But when there is reason to suspect 'heart weakness' — which means heart disease if it means anything — to test it 'by riding up a steep hill as far as possible,' and by the endeavor to produce a symptom which, if cardiac at all, can only mean strain and probably permanent injury to the heart muscle, would be absolutely suicidal. And all for nothing; for there are fifty ways in which a man, even though suffering from heart disease, may be pulled up without the production of this wonderful sign; so that he may go away rejoicing that he is 'practically sound,' although he may be actually diseased. When one considers the care which has to be exercised by even the most skilful physician to ascertain the soundness of the heart, and when one remembers that in cases where the heart is not quite right, although fully capable of doing good work for years with reasonable care, such an experiment as is suggested by *Wheeling* would be likely to set up a dilatation never to be recovered from, and to bring on all the miseries of premature heart failure, we find it difficult to discover fitting words to describe the wrong done to thoughtless people by the reckless dissemination of such advice."

MILITARY SANITATION IN PUERTO RICO.

GENERAL Orders No 151, dated San Juan, Puerto Rico, September 27, 1899, makes a distinct advance in military sanitation, and contains many provisions which might with advantage be adopted in our own supposedly more enlightened communities.

The value of the requirements noted below concerning the maintenance of proper cleanliness in all stores where food is offered for sale will be at once appreciated by all persons familiar with the conditions obtaining in Spanish-American countries. Milk is probably not adulterated to any great extent, and even in towns as large as Ponce the cows are driven to the residence of the customer and then milked. It is said, however, that in the past an occasional clever rascal has been known to secrete in his sleeve a conveniently shaped rubber bulb containing water, and thus dilute the milk during the operation of milking, undetected except by the closest scrutiny. The requirement that all secret or proprietary preparations must bear upon each bottle the exact formula used in their manufacture will be a severe blow to the patent medicine manufacturers of the United States, who have hitherto held a lucrative trade in Puerto Rico, and will undoubtedly excite their active hostility. As in this country, pharmacists in Puerto Rico are universally prescribers, and as they are largely men of no great education, it is with probable detriment to the general health. The provisions of the order are as follow:

(1) Foods and drinks in the meaning of this order are all articles used for food or drink by man, whether simple or compound. The term "drug" includes all medicines used by man, whether for internal or external use.

(2) No adulterated article of food or drink shall be made or sold in Puerto Rico; articles ordinarily recognized as food, which are really mixtures, may be sold if marked with the word "mixture" or "compound." No diseased, decomposed, offensive or unclean article shall be used in the manufacture of any food, drink or medicine.

(3) No person shall sell in Puerto Rico any impure, diseased, decayed or unwholesome provisions, or any adulterated bread, or any food substance mixed with poisonous substance.

(4) No person, whether owner, manager, keeper or agent, bartender or clerk, in any saloon, restaurant, boarding or eating house in Puerto Rico, shall offer for sale any food or drink containing anything poisonous or unwholesome.

(5) No person owning, renting or leasing any stall, room or stand where milk, meat, vegetables or groceries are sold as food shall fail to keep said room, stall or stand in a cleanly condition, nor shall such persons allow such milk, meats, vegetables or groceries to become poisonous or infected or unfit for food by reason of uncleanly condition of such stall, room or stand.

(6) No person shall offer for sale in Puerto Rico any unwholesome, watered or adulterated milk, or milk produced from cows which are visibly diseased, or are kept upon and fed on garbage, swill or other deleterious substance.

(7) No person shall sell any article of food or drug which is not of the nature, substance and quality of the substance demanded by any purchaser. And no person shall sell any compound food or drug which is not composed of ingredients in accordance with the demand of the purchaser.

(8) No person in Puerto Rico shall subtract from any article of food any part of it, so as to affect injuriously its quality, substance or nature; and no person shall sell any article so altered without making disclosure of the alteration.

(9) All drugs sold must be of the standard quality and strength prescribed in the Spanish or United States pharmacopeias.

(10) All compound, proprietary, patent or secret remedies sold in Puerto Rico shall bear upon the bottle, box or package an exact formula, stating the constituents of the medicine or remedy.

(11) No pharmacist not a legally qualified physician shall prescribe remedies for the sick. Every bottle, box or package containing any medicine or drug shall be labelled with the name of the same, and with the name of the physician who wrote the prescription. Pharmacists shall not sell arsenic or strychnine, or their compounds, or other drugs commonly known as deadly poisons, except upon the prescription of legally qualified physicians. Before such sale is made the name of the drug and the quantity, the name of the physician prescribing, and also the name of the purchaser, shall be entered in a book especially kept for this purpose. The purchaser shall sign his name in a book below the entry made by the druggist. Every bottle, box or package containing a dangerous drug shall be distinctly labelled "Poison," and the person shall be warned of the nature of the article.

Correspondence.

WARNING.

Mr. Editor: — An elderly man of respectable appearance, calling himself Dr. T. F. Allen, is visiting physicians and others, seeking aid under false representations. He states that he is a physician from St. Louis, who has lost his money, and often only wishes the means to telegraph to his home for necessary funds to proceed upon his journey. He is a tall man, with white chin whiskers, shaved upon the cheeks and has a rather suspiciously florid countenance.

He claims to be a Freemason, a member of Keystone Lodge, No. 243, at St. Louis, Mo., and on asking the Grand Secretary of the Massachusetts Grand Lodge in regard to such an individual, I was shown a printed description of the same man, who was pronounced an *imposter* in a circular published by a Masonic Bureau, dating over two years ago.

Another dangerous imposter is a young man of dapper appearance and good address who professes to be from Baltimore, and that he is momentarily "strapped." He only wishes a temporary loan which he will repay in a few days. I should not think it necessary to call attention to this man had he not succeeded in deluding some of our profession into giving him money.

Albert N. Blodgett, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, October 21, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,550,053	1109	375	9.36	15.57	2.61	1.98	3.06
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,266,832	—	—	—	—	—	—	—
St. Louis . . .	623,000	—	—	—	—	—	—	—
Boston . . .	539,416	163	48	11.54	14.64	1.22	4.88	3.66
Baltimore . .	506,389	168	51	12.00	8.40	4.20	4 20	2.40
Cincinnati . .	405,000	93	—	16.20	10.80	5.40	4.32	5.40
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	305,000	87	26	16.10	16.10	8.00	6 90	—
Washington .	277,000	83	33	13.20	12.00	3.60	2.40	3.60
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	51	17	12.95	7.40	9 25	—	1.85
Nashville . .	87,754	28	4	17.85	7.14	3.57	3.57	10.71
Charleston . .	65,165	28	10	3.57	—	—	3.57	—
Worcester . .	111,732	33	16	6.06	9.09	—	6.06	—
Fall River . .	103,142	24	11	12.48	12 48	8.32	4.16	—
Cambridge . .	92,520	—	—	—	—	—	—	—
Lowell . . .	90,114	25	3	8.00	16.00	—	4.00	4.00
New Bedford .	70,511	20	4	5.00	5.00	5.00	–	—
Lynn	68 218	12	4	25.00	—	—	16.66	8.33
Somerville . .	64,394	15	2	—	20.00	—	—	—
Lawrence . .	59,072	25	13	24.00	4.00	8.00	4.00	8.00
Springfield . .	58,266	17	5	41.16	—	—	—	—
Holyoke . . .	44,510	14	8	14.28	7.14	7.14	—	—
Brockton . .	38,759	8	—	—	12.50	—	—	—
Salem	37,723	16	4	18.75	–	—	6.25	12.50
Malden . . .	36,421	7	—	14.28	14.28	—	—	—
Chelsea . . .	34,235	5	1	—	—	—	—	—
Haverhill . .	32,651	9	2	—	—	—	—	—
Gloucester . .	31,426	3	3	—	—	—	—	—
Fitchburg . .	30,523	12	8	—	16 66	—	—	—
Newton . . .	30,461	10	3	10.00	—	—	—	—
Taunton . . .	28,527	6	1	16.66	33.33	16.66	—	—
Everett . . .	28,102	6	3	16.66	—	16.66	—	—
Quincy . . .	24,578	4	1	25.00	50.00	—	—	—
Pittsfield . .	23,421	2	—		50.00	—	—	—
Waltham . .	22,791	4	—	50.00	—	—	50.00	—
North Adams .	21,583	8	2	—	—	–	—	—
Chicopee . .	18,316	4	1	25.00	—	25.00	—	—
Medford . . .	17,190	1	1	—	—	—	—	—
Newburyport .	15,036	5	2	—	—	—	—	—
Melrose . . .	14,721	3	—	—	—	—	—	—

Deaths reported 2,018; under five years of age 663; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 230, acute lung diseases 230, consumption 226, diphtheria and croup 70, diarrheal diseases 69, typhoid fever 61, cerebro-spinal meningitis 7, scarlet fever 15, measles 4, erysipelas and whooping-cough 2 each.

From scarlet fever New York 6, Boston, Baltimore, Cincinnati, Washington, Providence, Springfield, Holyoke, Newton and Everett 1 each. From cerebro-spinal meningitis New York, Boston and Washington 2 each, Malden 1. From measles New York 3, Pittsburg 1. From erysipelas New York and Pittsburg 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending October 14th, the death-rate was 18.7. Deaths reported 4,080: acute diseases of the respiratory organs (London) 275, diarrhea 137, diphtheria 101, fever 69, measles 49, whooping-cough 41, scarlet fever 36, small-pox (Hull) 4.

The death-rates ranged from 11.5 in Norwich to 25.5 in Liverpool; Birmingham 17.2, Bradford 18.1, Cardiff 15.2, Gateshead 18.1, Hull 20.9, Leeds 16.0, London 18.8, Newcastle-on-Tyne 16.6, Nottingham 20.5, Sheffield 19.6, West Ham 13.5.

METEOROLOGICAL RECORD

For the week ending October 21st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...15	30.29	64	73	55	85	86	86	W.	E.	10	3	O.	C.	
M..16	30.39	56	58	53	93	88	90	N.E.	S.E.	12	8	O.	C.	
T...17	30.16	57	65	49	92	86	89	N.W.	S.	1	7	O.	O.	
W..18	29.89	66	72	61	90	96	93	S.	W.	6	6	O.	O.	.40
T...19	30.09	64	72	56	76	48	62	N.W.	W.	14	6	C.	C.	
F...20	30.23	46	56	37	90	62	76	N.	N.W.	10	11	R.	C.	.09
S...21	30.41	40	46	34	66	54	60	W.	N.W.	15	12	F.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 27, 1899.

M. C. DRENNAN, assistant medical director, promoted to medical director.

J. C. WISE, medical inspector, ordered to duty as member of the Naval Examining Board, Washington, D. C., November 1st.

W. A. MCCLURG, surgeon, detached from duty as member of the Naval Examining Board, Washington, D. C., November 1st, and ordered home and to be ready for orders for sea service.

C. E. RIGGS, passed assistant surgeon, ordered to the Marine Recruiting Rendezvous, New York, November 1st.

M. C. DRENNAN, medical director, retired October 24th; Section 1453, Revised Statutes and Section 11, Navy Personnel Law.

C. J. CLEBORNE, medical director, detached from duty in charge of the Naval Hospital, Philadelphia, Pa., November 1st, and ordered to Washington, D. C., November 2d, for examination for retirement and then home to wait orders.

R. A. MARMION, medical inspector, ordered to duty in charge of Naval Hospital, Philadelphia, Pa., November 1st.

C. H. T. LOWNDES, passed assistant surgeon, detached from the "Princeton" and ordered home by the first public conveyance.

O. M. EAKINS, assistant surgeon, appointed from October 21st.

J. C. BOYD, assistant medical inspector, promoted to medical inspector.

R. C. HOLCOMB, assistant surgeon, detached from duty at the Naval Academy, Annapolis, Md., and ordered to "Solace," November 9th, for duty in connection with battalion of marines for Manila.

R. SPEAR, assistant surgeon, detached from "New York," home and sick leave two months.

(CHANGES FROM ASIATIC STATION BY CABLEGRAM.)

M. V. STONE, assistant surgeon, detached from "Brutus" and ordered to the Island of Guam.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING OCTOBER 26, 1899.

IRWIN, FAIRFAX, surgeon. To report at Washington, D. C., for special temporary duty. October 25, 1899.

BANKS, C. E., surgeon. Granted leave of absence for four days. October 25, 1899.

KINYOUN, J. J., surgeon. To inspect unserviceable property at San Francisco, Cal. October 21, 1899.

GUITERAS, G. M., passed assistant surgeon. Detailed as temporary quarantine officer at Havana, Cuba. October 23, 1899.

YOUNG, G. B., passed assistant surgeon. To proceed to Baltimore, Md., for special temporary duty. October 20, 1899.

ROSENAU, M. J., passed assistant surgeon. To rejoin station at Washington, D. C. October 20, 1899.

SPRAGUE, E. K., passed assistant surgeon. Detailed to represent Service as technical delegate at meeting of American Public Health Association (Laboratory Committee), at Minneapolis, Minn., October 30 to November 3 (inclusive), 1899. October 24, 1899.

COFER, L. E., assistant surgeon. Relieved from temporary duty at Mexico, Mex., to take effect on or about November 15, 1899, and to rejoin station at San Diego, Cal., transferring command thereof to Assistant Surgeon C. E. DECKER, then to proceed to San Pedro, Cal., and assume command of the Service. October 26, 1899.

MCMULLEN, JOHN, assistant surgeon. To rejoin station at Louisville, Ky. October 20, 1899.

FOSTER, M. H., assistant surgeon. To inspect unserviceable property at Port Townsend, Washington. October 21, 1899.

HEISER, V. G., assistant surgeon. To proceed to Alexandria and Cairo, Egypt, for special temporary duty. October 23, 1899.

HALLET, E. B., acting assistant surgeon. Granted leave of absence for four days. October 23, 1899. Granted extension of leave of absence for two days. October 24, 1899.

RICHARDSON, S. W., hospital steward. Granted leave of absence for ten days from November 14, 1899. October 24, 1899.

PECK, F. H., hospital steward. To proceed to Miami, Fla., for special temporary duty. October 25, 1899.

APPOINTMENT.

EUGENE A. DARLING, M.D., has been appointed bacteriologist of the Cambridge Board of Health.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, November 6th, at 8 o'clock.

Dr. Benj. Tenney will report an "Unusual Case of Appendicitis."

Dr. F. C. Cobb will read a paper upon "Epistaxis." Discussion by Dr. Farlow, Dr. DeBlois and others.

A. K. STONE, M.D., *Secretary*, 657 Boylston St.

RECENT DEATHS.

THOMAS LEIGHTON JENKS, M.D., M.M.S.S., died in Boston, October 31, 1899, aged sixty-nine years.

PHILIP SCHEER, M.D., of New York, died on October 21st, of acute cerebral inflammation. He was forty-one years old and was born in New York City. He was graduated from the Medical Department of Columbia University in 1884.

BOOKS AND PAMPHLETS RECEIVED.

A Compend of Gynecology. By William H. Wells, M.D., Adjunct Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic. With illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

The Bacteriology of the Accessory Sinuses of the Nose in Diphtheria and Scarlet Fever. Scarlet Fever: Its Bacteriology and Gross and Minute Anatomy. By Richard Mills Pearce, M.D., Boston. Reprints. 1899.

A Text-book of Physiology. By Winfield S. Hall, Ph.D. (Leipzig), M.D. (Leipzig), Professor of Physiology, Northwestern University Medical School, Chicago. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1899.

Empyema of the Gall-Bladder. Rubber Gloves or Gauntlets: Their Use by Physicians and Surgeons. Nephro-ureterectomy for Traumatic Hæmato-hydro-nephro-ureterosis. By John E. Summers, Jr., M.D., Omaha, Neb. Reprints. 1899.

True Conservatism in Gynecology. Operations during Pregnancy. Alexander's Operation. The History of the Early Operations for Fibroid Tumors. Progress in Gynecology. By Charles P. Noble, M.D., of Philadelphia, Pa. Reprints. 1899.

General Pathology, or the Science of the Causes, Nature and Course of the Pathological Disturbances which Occur in the Living Subject. By Dr. Ernst Ziegler. Translated from the ninth revised German edition by Drs. Theodore Dunham, Edward M. Foote, Philip H. Hiss, Jr., and others. Editor, Dr Albert H. Buck, New York. New York: Wm. Wood & Co 1899.

Original Articles.

CRIMINAL ABORTION, WITH A "DYING DECLARATION."[1]

BY F. W. DRAPER, M.D., BOSTON,
Medical Examiner.

THE credibility of the statements made under a sense of impending death by the victims of homicidal violence has been recognized and admitted by the courts for many years. Properly authenticated by testimony, these "dying declarations," as they are called, have all the force of sworn depositions and are regarded as equally good evidence. Though made out of the presence of the persons accused, they are held to be admissible and are an exception to the legal rules governing hearsay testimony.

The principle on which the validity of this kind of evidence rests is a very ancient one and was derived from the Roman law. It is based on the fact that these declarations are made when the person making them is about to die, when every motive to falsehood is silenced, when the opportunity for personal advantage is slipping away momentarily and the mind is induced by the most powerful and solemn considerations to state the truth. Shakespeare well expresses the situation in these words:[2]

> "Have I not hideous death within my view?
> What in the world should make me now deceive,
> Since I must lose the use of all deceit?"

A situation of such a character is considered in law as creating an obligation to be truthful to which an oath cannot give any additional force.

But in order that the statements of the dying patient, the victim of unlawful violence, shall have the desired effect and validity, the conditions prerequisite are very exacting. Unless these conditions are fulfilled and are so made to appear very clearly, the court will exclude the dying declaration as incompetent. I cannot do better in this connection than to quote a few words from Greenleaf, whose work on the "Law of Evidence" is a leading authority. He says:[3] "It is essential to the admissibility of these declarations, and is a preliminary fact to be proved by the party offering them in evidence, that they were made under a sense of impending death, but it is not necessary that they should be stated at the time to be so made. It is enough if it satisfactorily appears in any mode that they were made under that sanction, whether it be directly proved by the express language of the declarant, or be inferred from his evident danger, or the opinions of the medical or other attendants, stated to him, or from his conduct, or other circumstances of the case, all of which are resorted to in order to ascertain the state of the declarant's mind. The length of time which elapsed between the declaration and the death of the declarant furnishes no rule for the admission or rejection of the evidence. . . . It is the *impression* of almost immediate dissolution, and not the rapid succession of death, in point of fact, that makes the testimony admissible. Therefore, when it appears that the deceased, at the time of the declaration, had any expectation or hope of recovery, however slight it may have been, and though death actually ensued an hour afterward, the declaration is inadmissible. On the other hand, a belief that he will not recover is not in itself sufficient unless there be also a prospect of 'almost immediate dissolution.'"

And Chief Justice Shaw, in instructing a jury in a leading case,[4] used these words: "Where a person has been injured in such a way that his testimony cannot be had in the customary way, the usual and ordinary rules of evidence must, from the necessity of the case, be departed from. The point first to be established is that the person whose dying declarations are sought to be admitted was conscious that he was near his end at the time of making them, for this is supposed to create a solemnity equivalent to an oath. If this fact be satisfactorily established, and if the declarations are made freely and voluntarily and without coercion, they may be admitted as competent evidence."

In 1889 the Legislature of Massachusetts extended the scope of this variety of evidence, so that, in addition to its admissibility in trials for homicide, it is now available in the prosecution of indictments for criminal abortion. With commendable sagacity and under an appreciation of the very great difficulties which beset the proof of culpability in abortion cases, the General Court has very materially helped in securing the conviction of offenders of this class, by enacting that the dying declarations of those who have submitted themselves to criminal procedures for inducing miscarriage may be received as evidence.

It is obvious from what has preceded that the relation of medical men to this kind of evidence is at once delicate and responsible in the highest degree. Physicians have it largely in their power to render dying declarations fruitful and of great service; and it is, on the other hand, quite possible, through their carelessness or their ignorance of the essential and exacting conditions involved, to make what otherwise would be useful entirely sterile and valueless. As the medical attendant of the dying victim of an abortion stands at her bedside, perhaps at his very first visit after the abortionist's performances within her pelvis, he has it under his control to do then and there, in the fleeting moments of the end of her life, that which will secure the prompt conviction of the offender. He sees that his patient is about to die. He observes her mental condition. He takes note that her answers, though slow and difficult, are intelligible and rational; she is neither delirious nor irresponsive. From his lips comes now to her the inexorable word which, difficult for him to utter and hard for her to hear, takes away from her any hope of recovery. He awaits her first utterance after this fateful announcement. If that utterance expresses a realization and belief that expectation of living is abandoned, then the statements that follow are a "dying declaration," and the physician is the one who receives them, records them as they are made and repeats them later in court.

It is he, then, who makes clear at the trial the exact circumstances under which the dying patient made her statement; it is he who represents her in the evidence as though she herself were on the witness-stand; it is he who repeats her words; it is he who defines with precision the mental and physical condition of the patient when those words were spoken.

In this connection, certain negative considerations relating to dying statements may be usefully remembered.

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[1] Read before the Massachusetts Medico-Legal Society, June 13, 1899.

[2] Richard II.

[3] Law of Evidence, Section 158.

[4] Commonwealth *vs.* Casey, 11 Cushing, page 417.

For example, it is not essential to their validity that they should be reduced to writing or that they should be signed by the declarant; but it is obvious that their value is very greatly increased by this precaution and the comfort and effectiveness of the medical witness who has received them and authenticates them on the witness-stand is immensely aided by the notes which he has made on the spot and by his carefully written record of the very words which the deceased person used.

Again, it is not the State which is the sole beneficiary of dying declarations; such declarations are equally competent and forceful when they help an accused defendant as when they help the prosecution, and the person to whom the declaration was made cannot exercise discretion as to omitting any part of it from his testimony. The "whole truth" is required.

"It is not an objection to the admissibility of dying declarations that they were made in answer to leading questions or obtained by pressing and earnest solicitation."[5] But the medical man who consults his personal well-being and looks into the future far enough to see himself on the witness-stand will avoid the methods of cross-examination, will resist temptation to exhaustive questioning, and will receive as an almost passive recorder whatever is imparted; for his zeal to get all the truth possible, and to obtain from the dying patient, before it is too late, all the facts, will surely be misinterpreted and made to appear to his disadvantage as a medical advocate.

Finally, it is not essential that the dying declarant should express his replies in words. The courts have admitted statements in which a pressure of the hand, a movement of the head, or any similar mode of communication took the place of spoken words.

After this too lengthy introduction, I am glad to report to the Society a recent case of criminal abortion which was tried in this county. My satisfaction in making this report is the greater for two reasons: the abortionists were found guilty, and their conviction was very largely due to the altogether admirable and acceptable manner in which the victim's dying declaration was obtained, and was later laid before the jury. The case is an object lesson and deserves sympathetic recognition by medical men.

Late in the afternoon of Thursday, March 16th of the current year, a married woman of 26 was admitted as a patient at the Boston City Hospital, the information accompanying her being to the effect that she was suffering from the consequences of a miscarriage unlawfully induced. She was brought in an ambulance, and on her assignment to a bed was seen in a few minutes by Dr. Mackay, the house physician. He appreciated immediately that her condition was alarming and that her death was imminent. She was very weak, was inclined to sink into a drowsy torpor, from which she was readily aroused, presented a cold surface, and had a temperature of 99.6° and a thready pulse of 120. There was pelvic tenderness and a foul vaginal discharge.

Here, then, was a medico-legal emergency requiring prompt action, tact and an intelligent appreciation of the exacting precautions requisite, under the law, to make this woman's statements of any use as evidence. Fortunately, the attendant possessed all three of these qualifications, and he managed the crisis with commendable success. His first act was to call to his aid from the administration office of the hospital Dr. Charles B. Knight, the first executive assistant. To Dr. Knight the patient's condition was manifestly desperate, and he agreed with Dr. Mackay that if a dying declaration was to be had at all, this was the time, without further delay. Dr. Knight then said to the patient, "You are a very sick woman. There is no chance of your recovery." She replied in low tones, scarcely audible, "I realize it." She was then asked if she wished to make a statement of the circumstances of her sickness, and she assented and gave her story, partly in answer to questions and partly without such aid, her answers being noted as they were spoken. These notes were then written out in proper form on the spot, and were read to her. She said she did not wish to change a word of the statement and added her signature to it. This declaration was as follows, including, without change, its crudities of expression and some obvious inaccuracies.

Boston City Hospital, March 16, 1899.

I, Frances Adams, twenty-six years old, married seven years, believing that this is my last and most truthful statement, do assert that a week ago yesterday, that is, Wednesday, I went to Mrs. B. F. Barrows or Mrs. F. B. Barrows, 339 Washington St. She was a small-sized woman, dark complected, about thirty-eight years old, with dark hair. I waited a few moments, and then she took me upstairs to her private bedroom. (I was recommended to her once before, about seven months ago. She did not do anything for me at that time, because I did not have enough money.) She told me I could take my clothes off or leave them on, and to lay down upon the bed on my side. She passed an instrument with a wire in it up as far as she could and it remained until the blood and pains came. The hard pains began at Thursday noon and continued till Friday at 6 o'clock, and then the child, clots and afterbirth came away. I remained at her house till the ambulance called for me to-day, bringing me here. My husband got Dr. D. F. or F. D. Simmons and sneaked him into the house, and Dr. Simmons called the ambulance.

Information of this affair was at once sent by telephone to the police, and in less than two hours the woman Barrows was standing by the patient's bedside at the hospital, under the escort of a patrolman. The patient's identification of the offender was complete. The latter's only comment was, "There must be some mistake. This is a poor way to repay an act of neighborly kindness."

In the interval between the completion of the dying declaration and the arrival of the alleged culprit named therein, the patient reinforced and enlarged the information previously given. She said, among other things, that before Mrs. Barrows passed the instrument into her womb and left it there, her husband, Barrows, had tried to do the same thing but his attempts were ineffectual, and he handed the catheter to his partner-in-mischief to accomplish what he had failed to do. As the immediate result of this later statement, Barrows was at once arrested and made co-defendant with his wife, as he was just before her partner in felony.

The rest of the story is soon told. Though there was some temporary improvement in the condition of the Adams woman as the effect of judicious treatment, wise stimulation and skilful nursing, aided by the mental relief that comes from an unburdened conscience, septicemia was persistently doing its deadly work. On the last day of March, fifteen days after her admission to the hospital and twenty-three days after the criminal operation, she died.

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[5] Greenleaf: Law of Evidence.

The medical examiner's relations to this case, which now for the first time demanded his notice, were really of secondary consequence. The lapse of time, thorough curetting of the interior of the womb, persistent aseptic douching and reparative processes had obliterated the initial lesions, if any such existed, which the passage of the catheter into and through the os uteri had left, so that the autopsy added little in the way of evidence to what was already known through clinical and detective observation. The pathological features may be summarized thus: Sallow skin, with numerous petechiæ about the neck and upper thoracic region; milk in the breasts, with marked dark-brown areolar pigmentation and swollen sebaceous glands; many punctate subpericardial hemorrhages and a single small pyemic centre in the left ventricle; thickening, reddening and fraying at the edge of the anterior cusp of the aortic valve; septic foci in the back of the right lung and back of the left lung; well-marked infarction of the spleen; septic inflammation of both kidneys, with some minute pyemic or embolic foci; a thrombus in the lower part of the vena cava inferior, nearly obliterating its lumen and forming an obstruction an inch long, with firm periphery adherent, except at its posterior surface, to the vessel's walls. The pathogenic micro-organism was the streptococcus.

The peritoneum was normal. The womb was enlarged to a length of four and a half inches and a breadth of three and a half inches; its interior was dry, smooth, and only moderately reddened; at its fundus posteriorly was the clearly defined remnant of a placenta; the right ovary contained a corpus luteum, small in size but typical in structure and aspect. The brain was moist and pale.

The conclusions which the autopsy indicated were: (1) that the woman had recently been pregnant; (2) that she had recently miscarried, and (3) that the cause of her death was septic infection and inflammation consequent upon the miscarriage. The medical examiner could not say and did not attempt to say, that his observations, independently of any other proof, gave any evidence that the abortion was due to instrumental and unlawful interference with the pregnancy; he admitted that, so far as the anatomical appearances were concerned, the miscarriage might have been a purely accidental one. But on the other hand, it was clearly his belief that all the lesions which he found were consistent with the view that the initial cause of the woman's miscarriage and death was the introduction of a dirty catheter, held in dirty hands, into her pregnant womb, with lack of proper care immediately after.

The usual judicial processes followed in due form and resulted in an indictment in which both the man and woman, Barrows and his wife, were named as defendants. Their trial came in less than two months after the act of which they were accused. Justice, for once, was speedy. The interest of the trial centred almost wholly about the dying declaration of the victim of the crime and the circumstances under which it was sought and obtained. It was useless to assail it or to question its credibility. Even the pathetic denial of the Barrows woman on the witness-stand that she was guilty of the charge, or that she knew anything of the miscarriage or its cause before she was called to give some neighborly service after it was all over, did not avail to contradict the solemn assertions from lips now dead and sealed. The jury's conclusions were aided and reinforced by testimony as to the character and pretensions of the two defendants. To everybody except "ladies in trouble," Barrows was a house painter; his wife worked in a jeweller's shop. But their activities were not limited to these commonplace vocations. Printed cards found in their trunk stated that "magnetic and electric treatments for all female weaknesses, leucorrhea, suppressions, cancer, tumor, etc.," were to be had at their place of business, and that "female irregularities" were "a specialty." So far as appeared, the pharmacological knowledge of this altruistic pair lay concealed in one list of drugs in a memorandum found with the cards; this list contained pennyroyal, ergot, cotton root and tansy in suggestive association and bearing the label "emmenagogue." The jury's deliberations were brief and the verdict was soon reached, both defendants being found guilty. The man was sentenced to State prison for seven or nine years and the woman is in Sherborn Reformatory for five years.

It has seemed to me desirable that this case should have a place in the records of this Society because of its unusual features. It was unusual because justice was done so quickly and unerringly, all the processes of the law being swift and sure from start to finish, thus making the affair an exceptional one in its class. It was unusual, also, because of the discreet and faithful manner in which the dying declaration was obtained, and it is especially for the purpose of presenting this conspicuous example of successful medico-legal practice in a trying situation that this paper is offered.

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A CASE OF PTOMAINE POISONING.[1]

BY H. G. BLAKE, M.D., WOBURN, MASS.,
Medical Examiner.

CASES of ptomaine poisoning are reported from time to time in the medical journals and elsewhere, and may become of practical interest to the medical examiner. Most of those cases are mild and escape his attention, but a considerable proportion are fatal, and these are of great interest to him on account of the obscurity that has hitherto involved this subject. Gradually this obscurity is being dispelled, but enough uncertainty still exists to make a record of such cases of great value. The following case suggesting ptomaine poisoning came to my notice as part of my regular work as medical examiner and I will give a brief description of it, as the circumstances under which it occurred are peculiar.

I was summoned by Dr. K., of Woburn, who had been called in the absence of the regular attending physician, October 17, 1898; also, in a short time, by the undertaker through Officer Walsh. I saw the body at 2.30 A. M., Monday, October 7, 1898. A patient of Dr. C., of Woburn, Mary M., thirty-six years of age. There was nothing remarkable about the external appearance of the body. It was lying on a bed, with the head toward the foot. On the same bed was a sister, Kate, lying sick in the natural position with her head on the pillow. She was conscious, in no distress, but weak. Several men, said to be brothers, were in an adjoining room; a married sister and one or two women were in the sick-room.

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[1] Read before the Massachusetts Medico-Legal Society, June 13, 1899.

The statement of the married sister, who was taking care of the girl, was that both were taken sick Saturday evening, October 8th, after a visit to Boston. Their dinner, bought in Boston, and eaten at home about 4 P. M., consisted of one and one-half pounds of raw Bologna sausage, which the girls prepared themselves and ate alone, the rest of the family being absent. They began to have nausea and vomiting some time that evening (the exact time could not be determined). There was vomiting, no diarrhea, not much pain; later contraction of the hands and feet, vertigo and general depression. They continued sick until Wednesday, October 12th, when Dr. C. was summoned. He considered them seriously sick and made several visits, but found them apparently much better the day before the death of the younger. They were taken worse at night, October 16th, and the younger died at 10 P. M. the same night. The vomitus, which had not been saved, the vomiting having ceased a day or two before death, was said to have been green bile. The clothing had been stained, but was in the wash. None of the original food could be obtained. Nothing was seen that was thought suitable for analysis.

Dr. K. stated that he did not know hardly whether it was a case for the medical examiner or not, but that he decided to inform me of the case.

In the morning Dr. C. said that he did not think it a case for me, that the case was one of simple gastritis. He had attended the family for fifteen years. The two girls were highly hysterical. They were always together, one never being seen on the street alone. If one was sick the other immediately came down with similar symptoms. When one began to menstruate the other usually came around too. He had repeatedly treated them for nervous symptoms at these periods. They both began to flow the day they were taken sick this time. He had prescribed "pancrobismuth," cream-of-tartar water for the constipation, and for the last few days one-tenth-grain doses of morphine. He had told the oldest (married) sister that he did not like to give morphine, but he finally decided to do so. He had no idea that there was any question of poisoning, and thought I ought not to have been summoned.

The chief of police said the next morning that the girls were peculiar, and were undoubtedly a little unsound mentally. When he heard of the case he said that he had made up his mind at once that they had committed suicide. There was an eccentric strain in most of the family. One unmarried brother was especially peculiar. The chief did not think he was capable of poisoning his sisters. He had no suspicion of any criminal poisoning.

The undertaker was anxious to embalm the body, and I finally gave him permission to do so. The cause of death was given as "probably accidental, due to ptomaine poisoning induced by eating diseased meat."

At 5.30 that night (October 17th) Dr. C. called at my office and told me that the other girl was dead. I went at once to the undertaker's, having decided to perform an autopsy upon this body. To my surprise I found that the girl had died at 2 P. M. and that the body had already been injected. A later interview with the undertaker developed the fact that the embalming fluid contained arsenic and other things not known to him. I decided it to be useless to make the examination under these circumstances.

The mother and father of the girls are dead. They lived with their brothers. A married sister lives in Boston. It was learned that Mary, the younger girl, was to have been married the Wednesday before death to a young man of a different religious faith. There was no property in the family and neither girl had any life insurance.

In considering this case, which I realize is not complete, and which I have reported more as a curiosity and to bring up the subject of food poisoning than to throw any light on an obscure medical subject, several things strike us as being possible: ptomaine poisoning, trichinosis, arsenical poisoning, and morphine poisoning. The failure to perform an autopsy in the first case was due to the statements of the family physician and of the chief of police, and to the fact that the girl had been seriously sick a few years before with an obscure disease, which seemed to show that she might be the subject of some chronic disease which an acute gastritis might cause to be fatal. In the second case the fault lies with the undertaker, who injected the body before I had been notified.

The facts against arsenical poisoning are the lack of pain and diarrhea, and the long time that elapsed before death. The brother upon whom the most suspicion rested is a person of dull mental power, and it did not seem to any one who knew him that he was capable of such a case of criminal poisoning.

There were no muscular symptoms that would suggest trichinosis.

I was unable to ascertain how much morphine had been taken. This drug undoubtedly influenced the late course of the disease, as the vomiting ceased a day or two before death. The girls were sick four days before they had any morphine at all. The elder girl was conscious of my visit and did not seem to have any of the symptoms of morphine poisoning.

Ptomaine poisoning seems to me the most probable cause of death, and I so stated.

It is not a well-known fact that in the growth of many, if not all, species of bacteria there are developed certain substances called ptomaines, some of which are harmless to the human organism, while others are highly poisonous. These substances may be an excretion of the germ itself, or they may be due to some metamorphosis produced by the germ in the albuminous substance in which it is growing. Be that as it may, the result is the formation of the various forms of toxalbumins known as ptomaine. These are the agents at work in most of the mysterious cases of poisoning by food that are reported from time to time, although we must exclude cases of the disease trichinosis, which has symptoms peculiar to itself but which might lead to confusion.

A scientific classification of these bodies is perhaps impossible with our present imperfect knowledge. According to their physiological action we have the coniine group, the morphine group, the colchicine group, the digitalin group, etc.; or we have a group containing oxygen, produced by known species of bacteria; another produced by unknown species.

Perhaps one of the best known of all the ptomaines is tyrotoxicon, which was first isolated by Professor Vaughan, of Ann Arbor, Michigan. This has been found, in certain conditions, in ice-cream, cheese and milk, and is the cause of many cases of poisoning from eating those foods. It causes retching, vomiting, purging, dilated pupils, rapid breathing, weak pulse and depressed temperature. It is not known by what bacteria it is developed, and its exact chemical composition has not been determined, although it can be obtained in small quantity in crystalline forms by exhaustion with either of the preparations, previously made alkaline, and the spontaneous evaporation of the ether. It is exceedingly poisonous.

Neuridin, cadaverine, and putrescine are well-known substances commonly found in decaying animal tissue, the first being non-poisonous the last two moderately so. Cadaverine is identical with the so-called animal coniine and coniine-like ptomaine. Its chemical name is pentamethylenediamine and it can be prepared synthetically. It is closely related to putrescine, which is tetramethylenediamine.

Neurin, choline, and muscarine constitute another group of ptomaines that have been obtained from putrid meat, mushrooms, etc. They are all very toxic and are closely related chemically.

Other poisonous principles have been isolated from cultures of the typhoid and tetanus germs. Allied to these ptomaines are the various snake venoms and certain vegetable toxalbumins, such as abrin and resin, the latter from the castor-oil bean.

The chief interest of these poisons to the medical examiner is the fact that such poisons exist in food under certain conditions, and that they give rise to symptoms resembling those caused by some of the well-known mineral poisons. Therefore it is impossible to say merely from the symptoms that we have to do with such and such a poison, but the autopsy and the chemical examination alone can give us the proof that we desire. Thus, in the case I have given the failure to make an autopsy leaves us uncertain and makes the case incomplete; and the point I wish to bring out (a point that has been emphasized before this Society) is the desirability of performing an autopsy in all cases of suspected poisoning, however slight may be our suspicion.

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A REPORT OF MEDICO-LEGAL AUTOPSIES.[1]

BY FREDERICK H. BAKER, M.D.,
Medical Examiner, Worcester.

THESE autopsies are reported to the Society not with the idea that they are unique or rare, but rather as excellent types of cases that medical examiners are called upon to investigate.

CASE I. *Acute alcohol poisoning.* — Male, twenty-five years of age, laborer, accustomed to moderate drinking, while apparently in perfect health drove with a friend about four miles to a neighboring town, entered a saloon where he made a wager that he could drink a pint of whiskey within ten minutes. About one and one-half pints of presumably cheap whiskey was brought to him in six glasses. He drank the amount in less than five minutes and soon after started for home. On the way he became unconscious, vomited, and was in a comatose condition upon his arrival. He had four or five convulsions, his face was livid, he breathed heavily, and died in six hours without regaining consciousness.

His parents and brothers claimed that he was the victim of "knock-out drops," and demanded an investigation. The case occurred out of my district, but I was called in by Dr. L. White, associate medical examiner, of Uxbridge, to perform the autopsy.

Autopsy. — Thirty-six hours after death. The body showed no evidence of decomposition. It has been observed that decomposition sets in slowly in cases of alcohol poisoning. He was exceedingly muscular, of medium height, and weighed about one hundred and sixty-five pounds. Rigor mortis, with very extensive post-mortem mottling and discoloration, was present. The pupils were dilated five millimetres and equal. There were no marks of violence upon the body. There was much engorgement of the sinuses and of the pia, the puncta cruenta were very prominent and the whole brain was edematous. There were about 50 cubic centimetres of a slightly reddish serum in each pleural cavity.

Both lungs were distended, markedly engorged, and exceedingly edematous, with their lower portions dotted with numerous pleural ecchymoses, such as are seen in death from suffocation. The trachea, larynx and bronchi were injected. The pericardium contained about 100 cubic centimetres of yellow serous fluid. There was nothing remarkable about the heart or the appearance of the blood. The esophagus was of normal appearance.

The stomach contained 237 grammes of brownish-black, faintly acid, liquid contents, which had a slightly alcoholic odor. In it were partially digested bits of baked beans, potatoes, and particles of fat, etc. The wall of the stomach was slightly swollen, with the mucosa only moderately reddened, with small, dark hemorrhagic areas here and there. The upper part of the small intestines was slightly reddened but not remarkably so. The liver, kidneys and spleen were engorged, but otherwise of normal appearance. The bladder contained a considerable amount of urine, which contained a small amount of blood.

Cultures on blood serum taken from the heart's blood, liver, spleen and kidneys remained sterile, as would be expected. The stomach with its contents, the liver, spleen and kidneys, and a portion of the brain, sealed and in separate jars, were taken to Prof. L. P. Kinnicutt, of the Worcester Polytechnic Institute, for examination. He reported that "the stomach was found to contain 14½ cubic centimetres of absolute alcohol, and in the portion of liver examined an amount that would give for the whole liver 3½ cubic centimetres. No other poisons were found in the stomach contents or organs. Microscopical sections of all the organs were made and each one found normal in appearance."

This is a case where to my mind, after hearing the circumstances, the diagnosis was clearly alcohol poisoning, yet so strong was the feeling of the family and the town authorities that an autopsy was deemed right and proper.

CASE II. *Suicide; prussic acid poisoning.* — Female, twenty-one years of age, attendant at Worcester Insane Hospital, was accused by the hospital authorities of having stolen clothing from the institution. She was given over night to make a confession of what she had stolen, and where she had disposed of it. In the morning she made a partial confession, and it was decided to search her trunk. While this was being done in her presence, she suddenly poured the contents of a small bottle into a small tin box and drank it all. She made one exclamation and almost instantly fell to the floor, and became unconscious at once. She had very severe tetanic convulsions, her face became dusky, and she died in about twelve minutes, notwithstanding medical attendance was immediately at hand and her stomach was washed out. From certain peculiarities attending the case, the district attorney decided that an autopsy should be performed.

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[1] Read before the Massachusetts Medico-Legal Society, June 13, 1899.

Autopsy. — One hour after death. She was well developed and nourished. Face slightly cyanosed, moderate post-mortem discoloration. The lips, tongue, and mouth were slightly eroded and a very faint odor of prussic acid could be obtained. The pupils were widely dilated. The mouth and nostrils were frothy. When the cranial, thoracic and abdominal cavities were opened, a distinct odor of prussic acid was noticeable.

The mucous membrane of the stomach and the upper part of the small intestines were bright red in color, swollen, intensely injected; the lower part of the small intestines was not remarkable. There was a moderate engorgement of the brain, liver, kidneys and spleen. The lungs were much engorged and edematous and there were numerous subpleural ecchymoses. The heart was not remarkable. The blood was everywhere very fluid and a striking characteristic of it was its cherry-red color and marked odor of prussic acid; a few cubic centimetres of it in a stoppered bottle retained this color perfectly for several months.

The stomach contents were examined by Professor Kinnicutt and prussic acid was found. The blood gave the reactions also for prussic acid. The spectroscopic examination gave only the absorption bands of oxyhemoglobin.

Case III. *Acute hemorrhagic pancreatitis.* — Male, laborer, twenty-nine years of age, drove into Worcester from a neighboring town with a friend and both drank heavily during the afternoon. When returning in the evening the deceased fell out of the wagon and was left behind by the roadside. An acquaintance found him and picked him up. He supposed that he was "dead drunk," and when he reached his home, left him in the wagon in a shed, as it was warm weather. He found him dead in the morning.

The autopsy showed him to be a well-built man. There were a few abrasions on the forehead and both cheeks and nose, presumably caused by his fall. No marks upon the rest of the body. The interesting condition was found in the pancreas. Upon opening the lesser omental cavity, there appeared an extensive blood clot occupying the site of the pancreas. It wholly covered and infiltrated it, and here and there were seen areas of fat necrosis. There was clotted blood in the pancreatic duct. No ruptured vessel could be found, nor was there any rupture of any muscle or other organs. All the organs of the body were normal, though slightly engorged. The stomach showed a considerable degree of injection, as did the small intestines. There was a moderate degree of atheroma of the large blood-vessels.

Whether this pancreatic hemorrhage was due to alcohol or trauma, or both, I am undecided. Possibly neither. It is an interesting pathological condition as a factor in sudden deaths.

Case IV. *Peculiar death from a blow upon the head.* — Male, fourteen years of age, was struck on the back of the head near the occipital protuberance by the wheel of a boy's express cart, thrown at him in anger by an older boy. He received a horizontal scalp wound about one inch in length, but was not rendered unconscious. He was out of doors during the greater part of the next three days, but did not feel well. He vomited several times and the evening of the fourth day became suddenly ill and delirious, dying the following morning.

The autopsy showed an infected scalp wound, a considerable diffused hemorrhage over the surfaces of the lobes of the cerebellum, with infiltration into it, and an acute purulent meningitis. There was no fracture of the skull. The meningitis was caused by the streptococcus pyogenes and staphylococcus aureus.

This case shows how symptoms may be delayed in a fatal head injury. His assailant was indicted for manslaughter, but he was put on probation by the court.

Case V. *Death from an unknown cause.* — Male, thirty-five years of age, farm laborer, came into Worcester and had a few drinks of beer. A few hours later he was found dead on the floor in a bath-room in a house of questionable reputation. They stated that as he was passing along the street he was taken with severe abdominal pain, vomiting and diarrhea; he was taken in and died a few moments later. He certainly vomited all over the bath-room.

The autopsy was made two hours later. He was of unusual muscular development. Aside from a slight hyperemia of the lining membrane of the stomach and small intestines and the abdominal viscera, everything was normal in appearance. All the organs and stomach contents were subjected to a chemical examination by Professor Kinnicutt. Everything that could be thought of was searched for, but with the exception of a slight trace of alcohol, nothing was found. The only possible reason for death that could be given was that in some way the Brazil nuts which he had been eating were the cause. Particles of these nuts were found partially digested in the stomach, but chemical examination threw no light upon it. Careful cultures and microscopical sections were made from every organ, and from the nervous system, but the results were negative. The autopsy was done in a well-equipped hospital morgue; every possible pains was taken with it, as its puzzling character was realized at the time. The spinal cord was removed, the pulmonary artery examined *in situ*, the arteries of the brain examined carefully. The alimentary tract was examined from the tongue to the anus, but no lesions were found.

It is decidedly interesting for the strong negative character which it has; yet interesting and instructive as it may be, it is of such a kind that one is better than many as far as our medico-legal pride is concerned. This case certainly had the appearance and history of that of a strong irritant poison.

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AN ANALYSIS OF THE CASES OF ECLAMPSIA OCCURRING AT THE BOSTON LYING-IN HOSPITAL DURING THE LAST FIFTEEN YEARS.[1]

BY F. S. NEWELL, M.D., BOSTON.

During the period since 1885 there have been admitted to the Boston Lying-in Hospital 90 cases of so-called eclampsia. I say so-called advisedly, because in 11 of the cases no convulsions occurred, and as the synonym for eclampsia is "puerperal convulsions," it is evident that, although the picture is in other respects typical, they must be placed in another class, and I shall consider them later as cases of threatened or aborted eclampsia.

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[1] Read by invitation at a meeting of the Obstetrical Society of Boston, May 17, 1899.

In all, then, we have 79 cases of true eclampsia treated in the hospital during a period in which 6,700 deliveries took place, an average of 11.7 to the thousand. These figures do not show the true relative frequency of the disease, as is shown by the statistics reported by Knapp from the Prague clinic, which give 22 cases in 4,480 deliveries, or 4.9 to the thousand. This is to be explained by the fact that many cases are received in the hospital for treatment after treatment outside has proved of no avail, and also that the majority of cases seen in the Out-patient Department are referred to the hospital for treatment.

Of the 79 cases 57 or 72.2 per cent. were primiparæ, and 22 or 27.8 per cent. multiparæ. This corresponds very closely with other observations, Knapp's figures being 72.7 per cent. primiparæ, and 27.3 per cent. multiparæ, while Schreiber's statistics, taken from the Vienna clinic, show 79.5 per cent. primiparæ and 20.5 per cent. multiparæ.

Cases of eclampsia are divided into three classes: ante-, inter- and post-partum. There is marked discrepancy between the statistics of different observers as to the relative frequency of the three forms. For instance, Lohlein gives the relative frequency of ante-partum eclampsia as 4.7 per cent, while Olhausen, on the other hand, found it to be 40 per cent. In our series 32, or 40.5 per cent., had convulsions before the advent of labor. In 22, or 27.8 per cent., the convulsions began during labor, while in 25, or 31.7 per cent., the convulsions came on after labor was completed. This is interesting in the light of Maygrier's observation that "even in rare cases convulsive attacks may appear for the first time after delivery is completed"; while in our series nearly one-third of the cases had no convulsions until after delivery. This shows how misleading conclusions based on a comparatively small number of cases are apt to be.

Etiology. — The etiology of eclampsia is at present only conjectured. From time to time the discovery of a specific organism has been reported, but later investigations have failed to substantiate the discoveries.

The cases of general infection, in which organisms have been cultivated from the blood and organs must be merely coincidental, or else we must believe that eclampsia is a symptom complex and not a definite disease, and that it may be caused by several organisms, as observers generally differ as to the organism found. For example, Councilman reports a case in which there was a general pneumococcus infection, while the organism described by Gerdes was a bacillus. The modern idea is that eclampsia is the result of a toxemia, arising from some cause at present unknown, which by the inflammation it produces causes deficient excretion and a consequent accumulation of toxins in the blood. All the excretory organs are affected and not the kidneys only, as was formerly thought.

The failure of excretion is most evident in the kidneys and it is only natural that for a long time they should have been regarded as the cause of the disease, but the lesions found in them at autopsy are slighter than those found in the liver, and apparently of later date, consisting of cloudy swelling, and a more or less marked glomerulo-nephritis, while in the liver are seen numerous areas of coagulation necrosis, into which hemorrhage has taken place. These changes in the liver are considered by Schmorl, who has done the latest and most thorough work on the pathology of the disease, as pathognomonic of eclampsia.

Of our series three cases came to autopsy, and the results are in perfect accord with what Schmorl found, but they give us no clew to the cause of the disease beyond the fact that they correspond closely with the changes found in other toxemias.

Various factors have been supposed by different observers to have some share in the etiology. Lusk says that the disease is more apt to develop in (1) protracted labors; (2) multiple pregnancies, and (3) elderly primiparæ.

Thirty-two of our cases were taken with convulsions before the advent of labor. The average length of labor for the remaining 47 was 21.9 hours. The longest labor was one hundred and twenty-five hours, and there were four others over fifty hours in length, while the shortest primiparous labor was two hours and fifty minutes.

An equal number of normal primiparous and multiparous labors, taken at random from the records, gives an average length of 15.2 hours. If we omit the five cases in which labor was over fifty hours long we find that the average for the two classes is practically the same, and the conclusion is obvious, that only a small proportion of cases are affected at all by the length of labor.

The effect of multiple pregnancies in causing eclampsia seems to be much more marked. During the period covered by this paper there have been 63 twin births in the hospital, and among these six cases of eclampsia developed, or about one in ten.

In regard to the statement that elderly primiparæ are more prone to the disease than younger women, the records show that of the 57 primiparæ only six were over thirty, and that the average age was 22.5 years. Knapp and Schreiber both say that their cases were for the most part young, Schreiber reporting 109 out of 113 as under thirty.

Symptoms. — It is a general rule that attacks of eclampsia are preceded by prodromal symptoms, which in a certain number of cases give sufficient warning, so that with proper treatment the attack may be aborted. Lusk says that the majority of cases, though not all, have premonitory symptoms, while Thomason, writing more recently, says, "Rarely are convulsions unheralded. In the vast majority of cases there were prodromal symptoms." In our cases, on the other hand, the record states positively that there were no prodromal symptoms in 21 cases, and in five others no history of symptoms was obtained, so that in one-third of the 79 cases there were either no subjective symptoms or they were too slight to attract notice. It must be remembered, however, that most of these cases were not under observation until eclampsia had developed, cases not being admitted to the hospital until the advent of labor, or in case of emergency. The urine had not been examined up to the time of their admission, and they belong to a class of women who are not observant of their symptoms at any time, so that warning symptoms may have been present and passed unheeded. Of the 53 patients who gave a history of symptoms, 37 complained of frontal headache, either as the only symptom, or combined with others; 33 had vomiting; 19 had epigastric pain; five had been noticed by their friends as being more stupid than usual; five complained of blurring of vision or blindness for some days previous to the attack, while several others complained of it just before the convulsions appeared; three patients had twitching, and one was delirious for twenty-four hours before the graver symptoms appeared; one patient had jaundice. These symptoms were complained of as having been present for from an hour or two before the attack up to three months. Twenty-three had more or less edema at the time of entrance, usually of the feet and ankles. In only 10 cases was edema of the face and hands noticed at entrance, though in six cases it developed after delivery. Edema of the lungs was present in one case at entrance.

Examination of the urine showed albumin in all except two of our cases, varying in amount from a very slight trace up to two per cent. or even more. Blood and casts were found in almost all the cases, but were occasionally absent. In two of the 79 cases there was no albumin in the urine and the sediment was normal. The urea was quantitated in so few cases that the results are of no value, but in those few cases it was diminished. Examination of the urine at the time of discharge gave these results: In 14 cases there was no albumin in the urine at discharge. In 20 cases no record of the condition at discharge was made. The other cases showed albumin varying from a slight trace up to one-eighth per cent., with nothing abnormal in the sediment. One case showed one-half per cent. albumin, with blood and casts in the sediment, and was referred to the Massachusetts General Hospital for treatment. The blood and casts disappeared in the majority of cases by the fifth day. In only one case did they persist as long as the fourteenth day.

Convulsive attacks, usually epileptiform in character, are the chief diagnostic signs of the disease. The patient may never recover from the first convulsion, or she may recover after many severe attacks. The 58 cases in our series who recovered averaged six convulsions each; 12 had only one convulsion; one patient recovered after twenty-five convulsions.

The 21 fatal cases averaged 11.9 convulsions each, one patient having forty-six attacks. Twenty-one of the 79 cases died, a mortality of 26.5 per cent. This compares very favorably with the statistics of other maternity hospitals, which vary all the way from Schreiber's mortality of 20 per cent. in 137 cases to those of Pajot, which give 50 per cent. mortality.

Of 32 ante-partum cases 10 died, a mortality of 31.2 per cent.; of 22 inter-partum cases six, or 27.2 per cent; and of 25 post-partum cases five, or 20 per cent., died. This shows that the prognosis of post-partum eclampsia is rather more favorable than in the other two forms.

Of the 57 primiparæ 12 died, or 21 per cent., which is about the same as Schreiber found in his series, as 19.8 per cent. of his primiparæ died. On the other hand, his mortality among multiparæ was 22 per cent. as against 11 per cent. in our series. Of the patients who had no premonitory symptoms three died, two of them having had only two convulsions each, or less than the average for those who recovered.

The prognosis in a given case must always be a serious one. We have no standard to guide us in the individual case. If marked prodromal symptoms are present the prognosis is somewhat worse than if they are absent.

The number of convulsions is not a sure guide to the gravity of the case, as in our series patients died after one convulsion, and recovered after twenty-five; but in the main it may be said that the more convulsions the patient has the worse the prognosis. The urine gives us no information as to the probable outcome of the case, as there seem to be no differences in its characteristics whether the patients die or recover. Possibly a systematic examination for urea might show something, but the quantitative test for urea was not made a sufficient number of times in these cases to form any conclusion as to its value. The prognosis is also better in those cases which have been under observation and treatment from the first than in those in whom treatment is begun later, and also is slightly better in primiparæ.

Of the cases in this series one had had eclampsia with her first child, and survived both attacks, while a second had a recurrence during a subsequent labor and died. In one case the convulsions ceased on the second day, under treatment, and the patient seemed out of danger on the fourth day, but the convulsions recurred on the fifth day, and she died on the seventh day. Another patient relapsed on the fourth day after having been without symptoms for twenty-four hours, but made a good recovery. These two cases show how guarded a prognosis must be given in any case even though the patient seems to be doing well.

Treatment. — The treatment has been along the same general lines in all cases, with minor differences according to the different services in which the cases occurred. Ir the main, the treatment has been to empty the uterus as rapidly as the conditions of the cervix, etc., permit, and the encouragement of all excretions, the object being to secure as rapid an elimination of the toxins as possible.

I have one general criticism to make in regard to the treatment, and that is, that the disease seems to have been treated in many cases at the expense of the patient, and that stimulation has been too often neglected, in spite of the fact that the general treatment is markedly depressant in its effect. After making a careful study of the records it seems evident to me that shock after operative delivery has played a considerable part in the death-rate, and I should urge most strongly the application of the same principles after operative delivery that we employ after a severe surgical operation. It seems to me that it is along this line that we can do the most to reduce the mortality, especially if we employ prophylactic measures instead of waiting for the symptoms of shock to develop.

There are a few special points about the results of treatment that deserve mention:

Pilocarpine was used in the treatment of 56 cases, five of whom died of pulmonary edema, which illustrates the danger of giving that drug to unconscious patients.

Morphia was used in two cases to control the convulsions. One-fourth-grain doses were given in both cases, and repeated once after a two-hour interval. Both patients developed alarming symptoms after the second dose, the respirations dropped below 10 and cyanosis appeared. The treatment was promptly suspended and both recovered. Veit, who is the chief advocate of this method of treatment, recommends one-half-grain doses after each convulsion until the convulsions cease. It may be that both of these cases had a special idiosyncrasy for opium, but after seeing these cases I should hesitate about the use of morphia in any but the smallest doses, and should be very careful about repeating it. It seems to me that the physiological action of morphia is practically the opposite of what we are trying to effect by our other treatment, and in this disease of lessened exeretions the danger of cumulative action in case of repeated doses becomes much increased.

Saline infusion was tried in eight cases, four of which died. Two were *in extremis* at the time of infusion and were only given one pint each, so that the treatment was not given a fair trial. Of the six cases in which the treatment was thoroughly carried out four seemed hopeless, and the infusion was tried as a last resort; two of the patients made good recoveries. A third reacted well to the treatment and seemed to be convalescing, but relapsed on the fifth day and died on the seventh day. The fourth case did not react at all. In the two other cases the infusion was given as part of the routine treatment, and both made good recoveries. The fact that out of four seemingly hopeless cases two recovered would seem to indicate that this treatment is worthy of careful trial, but the data in regard to it are too slight to show anything definite. Saline infusion acts in three different ways in these cases: First, as a cardiac stimulant it lessens the liability to shock very markedly; in the second place, it acts as a stimulant to the various secretions and aids materially in the excretion of toxins, as is shown by the fact that the excretion of urine comes up much more rapidly in the cases which have been infused than in those which have not; and, thirdly, it serves to dilute the toxins in the blood, and in this way lessens the irritation caused by them during excretion. For these reasons it seems to me the most rational treatment to adopt in all cases as a routine measure, and in suitable cases it may be combined with venesection with great advantage.

In 26 out of 64 ante- and inter-partum cases the convulsions ceased as soon as the uterus was emptied, which points to the value of immediate delivery as a therapeutic measure. Two cases were treated expectantly and recovered without resort to operative delivery; one of these miscarried a month after leaving the hospital, and one went to full term and was delivered of a living child. Neither case showed any signs of eclampsia during or after labor. While in 26 cases delivery ended the trouble, on the other hand the convulsions began after labor in 25 cases. The mortality among the latter class of cases was distinctly less than in the other two classes, so that it may be fairly claimed that emptying of the uterus is of marked benefit to a large proportion of cases, especially when adequate measures are adopted to guard against shock.

Operative delivery was resorted to in 49 out of 56 ante- and inter-partum cases, with 16 deaths. Four died of edema of the lungs, so that only in 12 can the operation be said to have played any part, and I feel that shock was the most important element in these. Twenty-five children were stillborn or died a few hours after birth. Twenty-seven versions were done and 10 children saved. Of the others nine were less than seven months, and were either stillborn or died in a few minutes; four were between seven and eight months; two craniotomies were done, the children being already dead; only two children were lost who were not premature or dead at the time of operation; 20 children were delivered with forceps, four of whom were still-born; four children were born dead after normal labors, one being macerated, the mother having had severe symptoms for two weeks before convulsions developed, labor coming on with the attack; three women miscarried before the fifth month.

In the 25 post-partum cases three children were lost. One of these was between six and seven months, the mother having had severe symptoms for ten days. One was stillborn, with forceps, after a hard labor, and one died of convulsions on the second day. One child developed convulsions on the second day, and had over twenty in the next forty-eight hours, but recovered.

Of the cases of threatened eclampsia little need be said. Barring the convulsions they presented no differences from the others. They had the same symptoms, and the urine showed the same changes, but under appropriate treatment they recovered without having convulsions. In five of the 11 the symptoms first appeared during labor, but were relieved by prompt emptying of the uterus.

Clinical Department.

A CASE OF UTERINE FIBROID.[1]

BY GEORGE H. WASHBURN, M.D., BOSTON.

MISS X., age twenty-six; sent by Dr. Faunce. Seen first on March 15, 1899, when she gave the following history: Menstruation began at twelve years. Was regular till 1890; after that somewhat irregular but nothing special till the spring of 1897, when the menstruation was more frequent, sometimes coming every two or three weeks. The quantity each time, however, was not excessive until December, 1897, when she had a hemorrhage lasting ten days and passed many large clots. She was then curetted by some physician and then had no flow whatever till July, 1898. This first catamenia was normal but afterwards the intervals were irregular and there was flowing and considerable pain. In January, 1899, flowed for three weeks, large clots and severe pain. Then followed a period of eight days without any flow. Then there was a return of the profuse flowing, lasting until a week ago. Bowels regular, appetite poor, digestion fair, some gas, micturition about normal.

The patient when first seen by me was very pale, the skin a pasty white and the lips almost colorless. There was some complaint of a fulness in the bowels. She was easily tired on exertion. The body was plump, and she had the appearance of one who had been exsanguinated by some accident. The flow had been absent only a few days, but she was apprehensive of its return. Vaginal examination revealed an open os, with a large mass pressing down as if to force itself through; the surface smooth and evenly rounded. With the other hand on the abdomen the tumor was felt as an evenly rounded mass, not very hard, rising almost to the umbilicus. The feeling was almost that of a pregnant uterus at five months.

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[1] Read before the Obstetrical Society of Boston, April 19, 1898.

The patient was sent to St. Elizabeth's Hospital, where she was put to bed in a quiet room. Extra feeding, in the shape of raw eggs, was started. Hydrochlorate of hydrastrin was given every four hours in one-eighth-grain doses.

On March 18th I examined her under ether, to see how much the mass filled up the uterus. It filled the whole space with the exception of a small canal, too small to allow passage of finger, running up behind the mass farther than the finger could reach. No sound was passed, as it was not desirable to start any bleeding. The tumor itself felt rather soft, almost giving a sense of fluctuation.

Flowing began two days later, and she was then put on doses of gallic acid as well as the hydrastin. The flow was at no time profuse and lasted about a week. She was then put on quite large doses of Gude's Pepto-Mangan, was allowed to get up every day and sent out for a drive. Her color and general condition improved quite rapidly, and she was in such an improved condition by the end of the first week in April that on the 8th the operation was performed.

There were present Dr. Faunce, who had very kindly sent the patient to me; Dr. Burrage, who assisted me during a part of the operation, and Dr. Kingman part of the time; Dr. Hinckley, senior house physician, assisted me through most of the operation. The vagina was thoroughly scrubbed with soap and hot water, then with corrosive solution. The external genitalia had previously been shaved and an antiseptic poultice put on abdomen. The uterine cavity was next washed out with a corrosive solution. The abdomen was now uncovered and washed with soap and water, ether, alcohol and corrosive solution.

Incision was made in the median line. On opening the abdomen the rounded mass was immediately in view, with the fundus of the uterus perched on top of it (like a small hat on a large head), the tubes and ovaries extending from either horn. The left ovary was considerably enlarged and cystic.

On account of the youth of the patient it had been decided to try to preserve the uterus. The inside attachment of the tumor was so extensive that I did not wish to risk removal by morcellation, and it was determined to deliver the tumor through the abdominal incision. A cut was made in the anterior wall of the uterus, extending from the fundus to the fold of peritoneum, just as it goes over the bladder. When the capsule of the tumor was reached, it was peeled off from the uterus by the finger as far as it could reach. The uterine opening being too small to deliver the tumor, two lateral incisions were made at right angles to the first cut. The tumor was now seized with vulsellum forceps and drawn up strongly, so that the remaining portion could be peeled off, and a mass about as large as two fists removed. There was hardly any bleeding up to this time. Now, however, there was much oozing from the extensive raw surface. A strip of sterile gauze was passed down into the vagina, one end remaining in the uterus. With No. 2 chromicized St. J. Leaven's catgut, the slack of the uterus, or the oozing blind spaces, was taken up. A new cavity was made for the uterus, preserving the space covered with mucous membrane. The left horn was apparently obliterated, but the right was pervious into the tube. The uterine muscle was brought together by deep sutures. A superficial layer of continuous suture united the seroserous surfaces. No. 2 St. J. Leaven's chromicized catgut was used in all uterine sutures. The left tube and ovary were now tied off and removed, the ligatures being placed at either end of the broad ligament, the two peritoneal surfaces between being sewed with a continuous silk suture. The abdominal wall was closed in four layers; the peritoneum, muscle and fascia being united with Leaven's chromicized catgut, and the skin and fat by interrupted wormgut suture. Hypodermic of aseptic ergot (P. D. & Co.), one-half drachm, given.

The patient was put back to bed in good condition; head elevated. The gauze was removed from the uterus in forty-eight hours, and an intra-uterine douche of one-per-cent. creolin solution given. There was very little vaginal discharge. A daily intra-uterine douche was given for a week. The temperature has at no time been over 100.5°. There has been very little pain after the first night. Abdominal wormgut stitches removed April 17th; perfect union.

Patient is now eating well, improving in color, and said to-day she felt like sitting up.

I have reported this case so fully, because this operation has not been done many times here, I think, and I believe it is deserving of consideration. In a young woman it does not seem right to mutilate by doing a hysterectomy, and trying to remove so large a tumor by morcellation through a virgin vagina seems to me a more dangerous operation than this, if feasible at all. There are also certain definite advantages in the way of having the field of operation open to inspection; hemorrhage is more easily controlled where it exists. The appendages may be inspected and treated if necessary.

To sum up, the operation is not very difficult; hemorrhage can be more readily controlled; the conditions in the pelvis are open to inspection, and, above all, mutilation of the patient is avoided, and what may be a useful organ is saved.

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A CASE OF OVARIAN CYST WITH TWISTED AND STRANGULATED PEDICLE.[1]

BY W. L. BURRAGE, M.D., BOSTON.

Ann C., age sixty years, widow, the mother of twelve children, entered the Carney Hospital, August 2, 1897. She was an Irishwoman, of large frame, and had always enjoyed rugged health. Her labors had been normal, and she had had the menopause fifteen years before. About a year ago she noticed that her abdomen was larger than formerly, but it gave her no special discomfort. Three weeks before entrance, early one morning while getting ready for mass, she felt a sudden sharp pain in the lower abdomen. The pain was very severe, and, as she expressed it, it seemed to her as if her insides were being torn out. It continued throughout the day, and she had had a dull pain across the abdomen, with exacerbations of sharp pains, ever since; for two weeks had had vomiting and loss of appetite and complete stoppage of the bowels.

On entrance to the hospital the patient had a temperature of 100° and a feeble pulse of 80. She was emaciated, especially about the arms and chest, and she had conjunctivitis and a poor color. The abdomen was universally distended, bulging in the flanks;

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[1] Read before the Obstetrical Society of Boston, December 21, 1898.

tympanitic everywhere above the level of the umbilicus and flat below that level. In the lower half of the abdomen, reaching to the umbilicus, could be felt a hard, immovable tumor of smooth contour, that was not in any respect tender to manipulation. By vaginal examination could be made out a senile uterus, retroverted and on the pelvic floor underneath the tumor.

An attempt was made to move the bowels by enemata without much success. Vomiting of a fecal character was almost constant and was excited by swallowing. In the next three days the temperature fell to 98.9° and the pulse became more rapid, 118. In spite of rectal alimentation and stimulation the patient's strength failed.

Operation, August 5th, under ether. The cyst wall, thickened and necrotic, was found closely adherent to the parietal peritoneum. When the cyst was punctured it gave exit to about a quart of dark blood and flakes of lymph, having a slight musty odor. The cyst filled the pelvis and was intimately adherent to the pelvic wall, bladder, omentum and intestines. It was shelled off with moderate ease and there was little oozing. The cyst wall, yellowish gray in color on the outside and deep red on the inside, was four millimetres thick and its interior was trabeculated. The pedicle, three centimetres broad, and from right broad ligament, was twisted on itself tightly, one and one-half times from left to right, like a corkscrew with its handle in the pelvis and its point at the position of the cyst. There was no circulation in the pedicle, which was white and friable. The pedicle was ligated and the tumor removed. When the loops of the intestines, which were much injected and pretty generally adherent, were freed from one another, a distinct noise of pent-up gas and fluid could be heard passing along. The peritoneal cavity was irrigated with salt solution, a pint being left inside, and the wound was closed without drainage. The postural method of draining the peritoneal cavity was employed for twenty-four hours after the operation.

The patient reacted well; the nausea ceased at once and did not return, and the bowels moved three times on the third day after calomel. The temperature was not above 99° and the pulse about 104. The remaining convalescence was uneventful.

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Reports of Societies.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

J. A. MEAD, M.D., SECRETARY.

The Society met, with a full attendance of members, June 13, 1899.

The business of the annual meeting having been transacted, including the re-election of the board of officers who had served the previous year, Dr. F. W. Draper read a paper entitled

CRIMINAL ABORTION, WITH A DYING DECLARATION.[1]

Dr. Hough: Although dying declarations are considered with sanctity by not only people in general but the medical fraternity as well, the statements made by persons with full knowledge that they are about to die are not necessarily true. I have had, as medical examiner, one experience of that kind. A man who had been stabbed, having been informed by the Catholic priest in "extreme unction," as well as by myself, and I think two other physicians, that he would die, stated who had inflicted the wounds upon him, and also stated that the attack was entirely unprovoked. Yet it was unquestionably proven in the police court that the homicide had been done in self-defence; that the dead man had assaulted the other fellow with a heavy iron bar or some such weapon, had knocked him down, and that the victim of this assault had stabbed the man who had assaulted him, and that the stabber was about five feet six inches, and the man whom he killed was over six feet. There was no question but that this man said what was not true in the dying declaration.

Dr. Mead: I was much interested in Dr. Draper's case, because conviction came so quickly. My experience has been that, even with dying declarations and confessions, somehow or other the jury pronounce a verdict of not guilty. I had a case where a dying declaration was taken by a physician in a Newton hospital. The man who had performed the operation was brought to the hospital, confronted by the woman and identified, and after that experience and confession the jury acquitted this man, who undoubtedly did the operation. I think that we more often have this experience than that of Dr. Draper in his case.

Dr. Canedy: I have nothing to say in the matter of dying declarations, as I have had no experience in that matter. But the difficulty of prosecuting abortionists is as apparent to medical examiners in the northwestern part of the State as in Boston and vicinity. Near the town in which I live has been a noted abortionist, who has carried on her notorious trade for many years, and it has been known by many citizens that she has carried on this business, and she must have got a great deal of money in that way. The district attorney heard of her, and declared that she should be brought to justice; but it was impossible when the time for the case came to get her to court. She said that she was sick and had to stay at home in bed, and some physicians, members of the medical society, gave certificates of illness, saying that she was not able to attend court. She succeeded in playing this game for a considerable time. In the meantime, a petition was circulated and signed by one-half of the reputable business men of the village in her favor, asking that she be dealt with leniently. This was enough to discourage any district attorney, and it is generally the way that public opinion runs in all such cases. The authorities, however, finally succeeded in getting this woman into court, and compromised by giving her about a year in jail.

Dr. Adams: I think that the last gentleman's remarks have struck the real key to the difficulty. A law is not good for much that is not backed up by public opinion and public sympathy, and however people may talk, I fear that that is what the execution of this law lacks — backing of public sympathy.

Dr. Presbrey: I have known a medical examiner to return a case of criminal abortion, and wait in vain for it to appear in court for trial. There is another instance: when we speak of dying declarations I think that we ought to remember that it is not accepted in the court as truth; it is viewed as other evidence, and out of all the discrepancies the truth may prevail. It is the function of the court to separate the true from the false.

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[1] See page 461 of the Journal.

DR. H. G. BLAKE read a paper entitled

A CASE OF PTOMAINE POISONING.[2]

DR. ADAMS: It is comparatively a short time since we have heard anything of poisoning by ptomaines — I mean fatal poisoning. I cannot recall any precise definition of it which would enable me or any one else to distinguish a case of ptomaine poisoning from a case of poisoning by arsenic — I mean in the clinical history.

DR. ABBOTT: A distinction between the two might be said to be that arsenic poisoning is very often fatal, while ptomaine poisoning is very seldom fatal.

DR. CANEDY: I was very much interested in the reading of this paper, as it suggested to my mind an experience that I have had with trichinosis. There were some 12 or 15 cases in all, three of which were fatal; some recovered after quite a long illness. But these cases were quite similar to those in the paper. The sickness was short and very acute, beginning after eating, and these cases were traced to sausage, soon after ingestion of which they were taken with vomiting, with severe diarrhea; the patients were sick a few days, with elevated temperature, gastro-enteric pains, frequent and rapid pulse, and little could be done to arrest the progress of the case, which proved fatal to three patients. The remaining eight, or 10, or 12, recovered after a long illness, and some have hardly recovered yet.

My experience with ptomaines has been that while the case is severe, the patient soon recovers, and I should not expect a case of ptomaine poisoning where death followed after a week's illness.

DR. ADAMS: I will state a case in which the diagnosis was made, by the attending physician, of ptomaine poisoning. When the symptoms were related to me they seemed to indicate arsenic poisoning, and I so declared was my opinion. On making a post-mortem examination I found distinctive indications of arsenic poisoning, and I sent different parts of the body to Dr. Wood, and he sent back word that it was undoubtedly a case of arsenic poisoning. The symptoms were very much as already described in the case of Dr. Blake, and the termination was fatal. The condition, which came on at the end of about four days, was that of rapid collapse, terminating in death; it was that circumstance that induced me to say arsenic, since, if it had been a case of ptomaine poisoning, the patient would have got well instead of dying suddenly in collapse. The peculiarity was, after the preliminary symptoms of purging and vomiting, with that terrible burning in the pit of the stomach, there was a time when the patient was quite easy; he could take food without any purging or vomiting, and that continued for two or three days, when there came on again violent vomiting, retching, burning pain at the pit of the stomach, and the man died suddenly in collapse. I think that in the history of arsenic poisoning that is not a very unusual course; that the cases generally terminate within forty-eight hours; that there is a time when the symptoms seem to cease.

I remember having a case of a man who drank a quantity of Paris green and who lived nearly three weeks, and a part of that time believed that he was going to recover, but he finally died in collapse. This man took all the poison at one time. The doctor insisted upon it that this man must have taken a new dose of arsenic, which must have brought on recrudescence and must have caused death. At the autopsy I found that peculiar condition of the liver — that pale yellow, fatty look — so marked that I could not have supposed it to have happened within twenty-four hours, but must have been a thing of slow development. There were crystals of arsenic in the stomach and intestines and a very large quantity in the urine; I was able to draw from the bladder only a few drops, and found one-sixtieth of a grain of arsenic in that small quantity of urine, which was considered a large quantity of arsenic. I sent the liver, stomach, intestines and brain, and arsenic was found in all these organs. It seems to me that the urine is the most important material; next to that, perhaps, the liver. The poison is entirely eliminated from the stomach and a good portion of the intestines by violent vomiting, if, since the ingestion of the poison, a considerable time has elapsed, perhaps three or four days. The only interesting point of this is that it was called a case of ptomaine poisoning and the only diagnosis which could be made before death; there was hardly a possible diagnosis from the clinical symptoms until death occurred in collapse, which would not have appeared if it had been ptomaine poisoning.

DR. ABBOTT: I have had opportunity to see four or five cases of trichinosis. All of these except the last three were in the families of foreigners, either Swedes, Germans, Hungarians, or French Canadians; but what I want to bring to your attention is that there is one quite distinctive symptom, and that is extreme muscular tenderness; I never saw a case in which that was not pretty well marked. I have seen a young college student all drawn up in bed, very sharp pains in his legs, his tongue so stiffened that he could not speak, and it hurt him to open his eyes and he could not open his mouth. These muscular tendernesses are due to infiltration of the muscles with this parasite. Three members of his family were taken ill, in the case of the college student; his two little brothers also ate of the ham which caused his illness, but were not so sick, as they did not eat in similar quantities.

DR. ADAMS: In confirmation of what Dr. Abbott has said, it has recalled to my mind three cases of trichinosis, which occurred in Saxonville thirty years ago. They were all marked with intense muscular tenderness and pain; muscular movements were very painful and it was almost impossible to move the arms or legs.

DR. F. H. BAKER read a paper entitled

A REPORT OF MEDICO-LEGAL AUTOPSIES.[3]

DR. PRESBREY: I should like to mention a case suggested by one of those reported by the reader. The mother of a little child was cleaning silver with solution of cyanide of potassium; the mother's back was turned, and the little one took up and swallowed some of the poison. As the mother knew the danger, and it is only a short distance to my house, she sent for me. Knowing the seriousness of the trouble I went immediately. There was an interval of ten minutes from the time that the child took the poison until I got there, and then the child was cyanotic and died within a very few minutes.

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[2] See page 463 of the Journal.

[3] See page 465 of the Journal.

Dr. Paine: The 1st of January, 1898, I was called to a young fellow who had been found lying by the roadside. He was taken up and brought to the police station; when I got there he was dead. They picked him up alive and he lived a few moments and had great trouble with breathing. At the autopsy the face was gray, there was no odor from the mouth at all of prussic acid and the appearance was negative. But I took the stomach and liver and other organs to Professor Wood; the next day they began to show cherry color, and Dr. Wood said that he was positive there was some poison there. The dead man had had some trouble that had been weighing upon him a good deal and he had told a doctor that he was going to commit suicide. He had said, "I know that I can take prussic acid and no one will know that I am going to die, or what has been the cause." Where he was lying in the road they found large quantities of cyanide of potassium.

Dr. Hough: I will relate a case of poisoning by cyanide of potassium — that of a bank cashier, who had been using the bank's money, and found that he would be discovered. From the bank he telephoned the family physician, saying, "Doctor, I wish that you would go up to my house and tell my wife that I am dead," or words to that effect. The doctor said, "Why, what do you mean?" "That I am going to kill myself." The doctor said, "Do not do it; where are you?" He replied that he was at the bank. The doctor ran to the bank; he got there in less than five minutes and the man was dead. In that case there was a distinctive odor about the mouth of the dead body of ammonia, as I think will frequently happen. It was not the real cyanide odor, but rather ammoniacal. If any have had experience with cyanide of potassium, they will know that the bottle in which it has been kept does not have a real cyanide odor, but a somewhat ammoniacal odor, similar to that produced by cyanide of ammonia; if any one is familiar with that peculiar ammonia smell — not straight ammonia — it is just as good evidence as the straight smell of cyanide of potassium.

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THE OBSTETRICAL SOCIETY OF BOSTON.

MALCOLM STORER, M.D., SECRETARY.

Meetings of April 19 and May 17, 1899.

At the meeting of April 19th, Dr. G. H. Washburn reported

A CASE OF UTERINE FIBROID.[1]

Dr. W. L. Burrage: When I saw the case it was a most interesting problem how the mass should be approached. At first I was in favor of morcellation; but though it projected downwards so that the os was the size of a twenty-five-cent piece, the mass was so distinctly intra-abdominal rather than pelvic, rising at least half-way to the umbilicus, that the plan of removing it through an abdominal incision seemed the more promising. Dr. Washburn is greatly to be congratulated upon his success in retaining a uterus with a fair cavity in spite of the partial loss of uterine wall. I have not happened to see another case in which the tumor invaded the structure of the uterine wall as extensively as in this one, in which the tumor could be removed by any other operation without probably sacrificing the uterus.

Dr. J. G. Blake spoke of the method of splitting the capsule of submucous fibroids, *per vaginam*, and if necessary, in certain cases, allowing nature to assist the process of extrusion.

Dr. Edward Reynolds: This case seems to me to have been one of the most difficult myomectomies I have heard of, yet it was perfectly successful. This agrees with my own feelings on the subject. I am coming to believe that the vaginal operations for fibroids are blind and unsurgical, and often involve the sacrifice of a uterus that could have been saved had the operation been from above. Myomectomies often look much more difficult in a given case than they prove to be.

Dr. W. F. Whitney asked as to the liability of impregnation in cases in which the uterine cavity had been much distended by fibroids, as in such cases, histologically, there is much deterioration of the mucous membrane.

Dr. J. R. Chadwick: I have personally seen at least 15 cases in which pregnancy was complicated by fibroids.

Dr. Reynolds: In the perhaps 15 cases of pregnancy complicated with fibroids that I have seen, at least three would come within the somewhat sharply defined class Dr. Whitney has asked about. In one I did a hysterectomy and found the fetus lying above the fibroid, which was about the size of a tumbler. In a recent puerperal case of mine, I found three-quarters of the posterior wall of the uterus occupied by an intramural fibroid, so that the whole uterine cavity was much distorted.

At the meeting of May 17, 1899, the President, Dr. Alfred Worcester, in the chair, Dr. F. S. Newell, by invitation, reported

AN ANALYSIS OF THE CASES OF ECLAMPSIA OCCURRING AT THE LYING-IN HOSPITAL DURING THE LAST FIFTEEN YEARS.[1]

Dr. E. Reynolds: I am somewhat struck by the very large number of cases of stillborn babies in the cases in which version was performed (17 out of 27) as compared with the four in 20 cases in which forceps were used. This apparently bad showing is very unfair to version, as in many of the cases in which the child was lost its death was due to extraneous circumstances, the delivery being premature, for instance. The large number of cases in which epigastric pain was noted is also surprisingly large, as is also the small number in which there was disturbance of vision.

There is one point in which I am rather inclined to criticize the usual teaching which is diuresis, diaphoresis and catharsis. It seems to me that there is a fourth equally important indication, which is the prompt and continuous use of sedatives to keep the convulsions down while other lines of treatment are being followed. I am confident that many cases die of obstetrical shock, and believe thoroughly in the great importance of stimulants. The importance and gravity of eclampsia can hardly be overstated. In the whole range of medicine and surgery there are few cases in which a man feels proud to have lost only 25 per cent. of his cases.

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[1] See page 469 of the Journal.

[1] See page 466 of the Journal.

Dr. F. A. Higgins: In a recent and apparently most unfavorable case of mine, treatment by saline infusion worked excellently well. I have seen one or two bad cases in which it was my firm impression that the use of strychnine had considerable to do with the increase in the number of the convulsions.

Dr. G. J. Engelmann: I favor the supporting rather than the stimulant treatment. I have heard nothing said this evening thus far about venesection. In certain cases its use has been most satisfactory. To my mind venesection, followed by infusion, is the ideal treatment for the casting off of the toxins with which the blood is crowded, and the most efficient way of supporting the patient. Salt infusion alone is but a partial remedy.

Dr. J. G. Blake: To repeat the views that I have expressed many times before, I would say that in my earlier years, when I saw many cases of eclampsia, my principle was to head off the convulsions by the use of ether and to empty the uterus at once, and then use calomel as a diuretic and cathartic. My success has been, I think I may say, somewhat unusual, in that I have never lost by puerperal convulsions a woman who was under my own care, though I have seen one or two in consultation that died. I have usually emptied the uterus by version done at the earliest possible moment.

Dr. J. S. Phelps: I recall, to emphasize the importance of prophylaxis, a recent case, at which I saw a woman at the seventh month with headache, etc., whose urine contained one to eight per cent. of albumin, in whom all the symptoms disappeared under ordinary treatment, and later she had a normal labor.

Dr. G. H. Washburn: The lesson can certainly be drawn from such cases that the early recognition of the condition is the most important thing. We should train the public to recognize that neglect means great danger, and if women would only call their medical attendants earlier there would be fewer deaths.

Dr. C. W. Townsend: In 1893 Dr. C. M. Green published a report of 36 cases occurring at the Boston Lying-in Hospital. In December, 1896, I reported 67, and to these Dr. Newell has now added 12. I have naturally been much interested in following these statistics. It was somewhat striking that in the cases included in my report it should have appeared that the mortality of the cases occurring in private practice, chiefly among members of this Society, should have been exactly the same as that of cases occurring at the hospital. It must, of course, be said that many of the cases seen in private practice were consultation cases, and therefore on much the same basis as hospital cases, in that they were not seen by the consultant beforehand. In my paper I showed that while in both private and hospital cases there was the greatest mortality in the ante-partum cases, in private practice the post-partum cases were more fatal than the inter-partum ones, which proportion was, however, reversed in the hospital cases, which would apparently dispose of the argument as to the effect of labor.

Dr. A. D. Sinclair: My personal experience with eclampsia has been a rather fortunate one, in that all except two of the cases that I have seen were in consultation, and I have not happened to lose a single woman. My method has consisted in prompt etherization, kept up to prevent the nervous system from waking up. Quick delivery followed a large dose of calomel and jalap.

Dr. J. P. Reynolds: In five cases under my immediate care there was not a single convulsion after ether had been thoroughly given, though in these cases many convulsions had followed other lines of treatment. I wish to emphasize the harmlessness of continuous and thorough anesthesia. I cannot agree with those who regard the number of convulsions as of little importance; on the contrary, I attach the greatest importance to preventing another single convulsion. In certain cases I would not dare to let a woman have another convulsion. I yield to no man as regards the sanctity of the child's life, but I think that the child has the best chance of life if we act promptly. As to how long I would continue anesthesia, I can only say that in those five cases it was kept up from eight to twenty-four hours, deeply enough to keep the patient quiet, and there was not a single sympton that led me to think that the woman was any the worse for the anesthetic.

Dr. C. J. McCormick: I should like to ask the experience of the gentlemen of the Society as regards the return of albuminuria in successive pregnancies. I have in mind two cases, in each of which there was a return in each successive pregnancy, although somewhat elaborate efforts at prophylaxis were made.

Dr. Newell: As these cases were all hospital cases, in which the subsequent histories are unknown, I can only say that there was such a return in two cases.

Dr. H. E. Marion: I endorse the necessity of watching patients, especially primiparæ, from the beginning, and also the importance of making the skin and bowels do their work in saving the kidneys. I am especially fond of hot baths. As regards repeated albuminuria, I have seen several cases in which it was present in the first pregnancy but not in subsequent ones, and when repeated I should be strongly inclined to suspect a crippled kidney.

Dr. Edward Reynolds reported orally

THREE CASES OF FIBROIDS STRANGULATED BY INVOLUTION DURING THE PUERPERIUM.

Dr. M. H. Richardson showed a number of

PATHOLOGICAL DRAWINGS,

one of a dilated sigmoid recently removed by him being of especial interest.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON PEDIATRICS.

Stated meeting, October 12, 1899, Henry Koplik, M.D., in the chair.

Dr. A. Jacobi read a paper on

ANTIPYRETIC DRUGS: THEIR USE AND ABUSE IN THE TREATMENT OF FEVER.

After some introductory remarks on the causes of fever, he referred to the various methods that had been attempted for the reduction of temperature. Antiseptics, he said, had not proved successful, and the class of remedies meant to paralyze the organs of circulation, such as veratrum viride, had to be given in such large doses as to render them objectionable and dangerous. In the third place we had agents which act upon the locality of the production of the high temperature, such as quinine.

Could we kill microbes in the blood by the use of germicidal remedies? We could if we gave a sufficient quantity to kill the patient also. But in certain cavities the effect of toxins might be efficiently and safely combated by means of antiseptics. Some objected to the use of antipyretics altogether, on the ground that in fevers a continued high temperature is required to destroy bacilli and produce antitoxins: but the danger was that if the high temperature succeeded in killing the microbes it would also prove fatal to cells, and the patient's life might perhaps be sacrificed. Certainly, if we waited for the beneficent effect of heat in a case of sunstroke, we would soon have a corpse on our hands. In diseases such as typhoid fever, plague and pernicious fever the mortality, as a rule, varied according to the continuance of high temperature, and remissions always served to avert the danger, The multiplicity of the causes of fever proved its varied nature. In the treatment of its various forms it was often requisite that attention should be paid to the cause, but in other cases it was necessary simply to treat the symptom. To be satisfied with merely depressing the temperature was a mistake; but to allow a fever to run its course with continued high temperature was equally injudicious.

In the case of infants it was important to bear in mind that the powers of resistance were much feebler than in older persons. The rapid metabolism characteristic of this period of life and the facility with which hydremia was produced should always be taken into consideration. While high temperature might lead to convulsions early, it was his opinion that more infants perish by high temperature during convalescence than in the onset of the febrile diseases. We should never forget, however, that it was no degree of Fahrenheit, but an individual patient, that we always had to consider.

Taking up the subject of quinine, Dr. Jacobi briefly discussed the physiological action of the drug, and said that in fair doses it was certainly antipyretic. In malarial fever a single large dose had been known to excite fever, but this was due to the sudden contraction of the spleen which it caused. He gave in detail his method of administering quinine in the various forms of malarial fever, and said that except in pernicious continued fever its external use should, as a rule, be avoided during the height of the fever. In the case of children the palatability of the medicine was an important matter. The tannate of quinine might be given in larger doses than the sulphate, but he preferred the latter, which he used in the form of the fresh powder, disguising the taste by means of syrup of coffee or chocolate. When the remissions were very short it was a good plan to use an occasional dose of antipyrin, in connection with quinine, for the reduction of temperature. For forty years he had been in the habit of using ergot in cases of chronic intermittent fever, with tumefaction of the spleen, which had resisted quinine and arsenic, and with this agent he had succeeded in curing many apparently intractable cases, although he had noticed that the plasmodia did not seem to disappear from the blood as rapidly as in cases where quinine was successful.

Sometimes he had found that quinine or arsenic was efficacious after the use of ergot in cases which had before resisted these agents.

Salicylic acid was both an irritant and an antiseptic. In its physiological effect it was a paralyzing agent on the centres, and therefore differed from quinine, which acted directly on cell metabolism. In some cases it might be advantageously combined with quinine.

Antipyrin increased the tension of the pulse and the blood pressure, and was therefore contraindicated in hemoptysis. The peculiar exanthem resembling measles which it sometimes gave rise to (which, however, was seldom noticed except after the first dose) was apparently due to its action on the walls of the blood-vessels. Acetanilide, or antifebrin, did not disturb either the skin or the stomach, but it should never be given on account of the danger connected with its use. Being a derivative of aniline, it was certainly a poison. Phenacetin resembled it in its effects, but it was much milder. This agent, he thought, was frequently given in much larger quantities than there was any necessity for. In the case of adults he usually commenced with a dose of only three grains, and he employed a correspondingly small quantity in children. Lactophenin was industriously kept before the profession, and was not without value.

Alcohol had a great advantage over other agents on account of its rapid absorption from the stomach. In sufficiently large doses it was distinctly antipyretic, but it should always be given properly diluted. In the common varieties of aseptic fevers it was seldom required. In the septic fevers there was no better antiseptic than alcohol in large doses, and there was almost no dose of it that would not be well borne. He had not infrequently given as much as a pint of whiskey a day to a young child. As soon as the sepsis ceased, however, the alcohol would cease to be tolerated, and if it should be continued after that, at least in any large quantity, it would be attended by the ordinary symptoms of alcoholic intoxication. In the first stage of pneumonia it was not called for. Here there was a special reason for its not being given. It was known that four per cent. of the alcohol ingested is eliminated by the lungs, and it was not desirable that the lungs should be given this extra labor at that period of the disease. Alcohol was also contraindicated when there was nephritis.

Dr. Simon Baruch read a paper on

HYDRIATIC MEASURES IN THE MANAGEMENT OF THE FEBRILE DISORDERS OF INFANCY AND CHILDHOOD, WITH A PRACTICAL DEMONSTRATION OF VARIOUS HYDRIATIC PROCEDURES.

He said he held that water was not an antipyretic, because this was not its only or even its chief agency. If called upon to define its action he would designate it as an antifebrile. Excessive shock and collapse had frequently been noted to result from cold baths, and this circumstance had led to their abandonment altogether in some quarters. Again, it had been argued that all fevers run a more or less definite course, and it was of no advantage to actively interfere. In this connection he paid a tribute to the good physicians, like Austin Flint, who had so nobly taken their stand against the system of depressing treatment formerly so universally in vogue. At the present day, however, there were many who contend that much can be gained by more or less active measures, and it might with truth be said that, except in the case of malarial fevers, it was the sick child, and not the fever, that we had to treat. Various methods of treatment were of service in certain conditions, but a routine plan of treatment was positively baneful. All the advantages claimed for different agencies in the treatment, he believed, could be obtained by the intelligent use of water.

In the external application of water in the case of children the temperature employed should, as a rule, be considerably higher than under similar conditions in the case of adults. Thus, in typhoid fever, the bath for children should at first be at a temperature as high as 90°. The matter of friction while the child was in the bath was quite as important as in the case of adults. As the result of the cold-water bath there were produced a primary contraction of the peripheral blood-vessels, and afterwards relaxation of the vessels. When a toxic element was circulating in the blood and disturbing the vasomotor system, the pulse became soft, compressible, dicrotic. Consequently, extra labor was thrown upon the heart. The organ in time became exhausted, and we had the familiar catastrophe, heart-failure. The superiority of hydrotherapy lay in the fact that by means of it we could always combat the tendency to cardiac exhaustion. By the appropriate application of this method the cardiac systole was promptly enhanced, and the intelligent repetition of the hydriatic measures prolonged the effect. The external application of water had the effect of stimulating both the nervous and the vascular system, and these two great points were not secured by any other one agent of which he had any knowledge.

The field of action presented was practically unlimited. In some instances the full body bath was called for, in others, ablution, the wet pack, etc. Precise directions should always be given to the nurse. In one case that he had heard of the patient was placed in a bath of 106°, and the temperature was reduced to 60° without any friction of the skin being made. The judgment must be carefully exercised in adapting the mode of treatment to each individual case. The common practice of passing a cold sponge over the body of a fever patient was of doubtful value. In practising ablutions gentle mechanical irritation should always be employed, and this was best accomplished by means of gauze held in the hand. The temperature of the water used should at first be about 90°, and reduced one degree as a time until 60° was reached. Abdominal compresses should be of linen, covered with flannel, but no oiled silk should be placed over the latter. When the body temperature exceeded 103° a larger quantity of cold water should be used with the compress. In pneumonic fevers the patient should be placed in a full bath of 95°, the temperature of which should be reduced to 80° in from five to eight minutes, and the bath be followed by friction. In typhoid fever, on the other hand, the water of the bath should be cooled before the patient was placed in it, and the bath should be maintained for from ten to fifteen minutes, while drying was not advised.

Varying methods were required in accordance with the different conditions met with. In pneumonia a chest compress was of service, and he usually commenced its use with water at a temperature of 100°, and then gradually reduced it. In desperate cases of bronchopneumonia he ordered a stimulant affusion of 60° while the patient was in a body bath of 100°, and this almost invariably had the effect of ameliorating all the distressing symptoms. Cold affusions were also indicated in scarlatina, a disease in which full baths, as a rule, were not well borne. The very flexibility of hydrotherapy sometimes gave rise to difficulty in selecting the right measure in a given case, and there could be no question that more judgment and experience were necessary on the part of the physician than in drug medication.

Having quoted Dr. Jacobi and various French and German authorities on pediatrics in favor of hydrotherapy in children's diseases, Dr. Baruch proceeded to demonstrate some of its applications on the body of an adult subject. The bed should be so prepared, he said, that it would not be soiled, and in the case of a child it was best to have the patient on a cot. The use of the chest and abdominal compresses was first shown. These were made of oblong pieces of linen, long enough to pass completely around the body, and, having been dipped in the water of the required temperature, they were folded and carried around the chest and abdomen respectively. By turning the subject's body from one side to the other it was unnecessary to lift him from the bed. Outside the linen compress a flannel strip, cut slightly larger than the linen, was passed around the body in the same manner. The compress should be fitted snugly, no air being allowed between it and the surface of the body. A temperature of 60° was usually employed for the chest or abdominal compress.

The sheet bath was next shown. A linen sheet was dipped in water and not wrung out too much, as it was desirable that a considerable quantity of water should be retained. It was then folded about the body in such a way that no two surfaces should be in contact. In the case of a child the temperature of the water used should be 100°. The patient having been placed in the wet sheet, he should be rubbed successively all over the trunk, the water used for this purpose being at a temperature of 90°. As soon as any point on the surface ceased to react the hand of the rubber should pass on to another point. When this friction had been completed the patient should be covered up with a blanket, and allowed to go to sleep. The sheet bath, as thus applied, was almost as good as the regular Brandt bath, and it was an excellent substitute for the latter in tenement houses or in the country, where the facilities for tub bathing could not be procured. Dr. Baruch said he had known typhoid-fever patients who had had a temperature of 106° before being placed in the sheet bath to sleep for two hours and wake up with a temperature from one to two degrees lower. It might be repeated every two or three hours. Finally, the application of the wet pack was shown. Here the sheet was wrung out fully, and the patient, when the sheet was snugly covered by a blanket, created a vapor by his own body. It took three wet packs at 75° to reduce the temperature of the body to the same extent as one Brandt bath at 70°, and the latter was most certainly to be preferred in the treatment of fevers. In many chronic cases, however, the wet pack was of great service.

CREMATION IN THE UNITED STATES. — About 8,800 persons have been cremated in the United States up to the present time.

Recent Literature.

The Principles and Practice of Hydrotherapy. A Guide to the Application of Water in Diseases, for Students and Practitioners of Medicine. By Simon Baruch, M.D., Visiting Physician to the J. Hood Wright Memorial (formerly Manhattan General) Hospital; Consulting Physician to the Montefiore Home for Chronic Invalids; Member of the New York Academy of Medicine, etc. With numerous illustrations. New York: William Wood & Co. 1898.

This book, from an authoritative source, is a comprehensive study of the use of water in the treatment of disease. Medicine in this country owes much to Dr. Baruch for the insistence he has laid upon hydrotherapy, which has certainly been a much neglected method of treatment, partly from its supposed expense, and more, no doubt, from the general ignorance of practitioners regarding its use. That its possibilities are coming to be more generally recognized is evident, and this is largely due, in our opinion, to Dr. Baruch's painstaking work in the exposition of the subject.

The volume before us is a bulky one of four hundred and thirty-five pages, logically arranged. The physiological action of water is discussed, and its effect upon various body processes, followed by a detailed and valuable discussion of the technique of baths and the application of water, in general. This portion of the book, worked out in a spirit of scientific exactness, is most heartily to be recommended. We are in entire accord with the writer when he deprecates the prevalent fallacy that "water is so simple and innocuous a remedy that it may be applied with less regard for precision than the physician is wont to exercise in prescribing medicinal remedies." In many therapeutic measures this fallacy is observable, and it is to this, doubtless, that many therapeutic failures may be attributed. The greater part of the remainder of the book is taken up with a consideration of the use of water in individual diseases, interspersed with the report of clinical cases, which adds much to the practical value of the discussions. The author is a decided believer in the use of baths in typhoid fever, as one would expect.

The concluding chapter is a valuable historical epitome of hydrotherapy, and closes with a strong plea for the necessity of instruction in hydrotherapeutics at our medical schools, which again we most willingly endorse.

The book is written by an ardent student of the subject, who has himself accomplished definite results, and it should serve as a stimulus to physicians to make use of this means of treatment in their individual practices, modified as necessity demands.

The volume is illustrated sufficiently to make clear the varied procedures, and is well printed and bound; it should certainly find a place in every physician's library.

A Text-Book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., etc. Illustrated. Third edition. Revised. Philadelphia: W. B. Saunders. 1899.

The third edition of this book follows the second at an interval of less than a year. In general, the book preserves essentially its previous arrangement and does not require renewed reviewing. The section on Infectious Diseases has been carefully revised in accordance with recent advances in bacteriological research. Some articles have been rewritten, and some revised, and some new subjects have been added; six new illustrations of microscopic preparations have been added, and the index has been enlarged.

Massage and the Swedish Movements. Their Application to Various Diseases of the Body. By Kurre W. Ostrom. From the Royal University of Upsala, Sweden. Fourth edition. Revised and enlarged. With 105 illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

If the title of this convenient little book was "Swedish Movements and Massage," it would more closely define its subject matter. The book deals pre-eminently with movements. The chapter on the History of Massage and the Bibliography will be interesting and useful to students of the subject, while the General Remarks on Massage and the Massage Treatment in America deserve the attention of the physician. We are glad to see that the author believes that the patient should have treatment from one of the same sex, and that he urges the doctor to inquire into the source of training of his operator.

The prominence given by Ostrom to movements over massage is well exemplified by what he says of massage of the head, where stroking and percussion are employed to the exclusion of true massage in the American sense of the term. The recommendations for the free use of oil are rendered necessary by Swedish methods.

The plates found in the book are from Hartelius. The English, though that of a foreigner, needs comparatively little criticism.

International Directory of Laryngologists and Otologists, Containing Names and Addresses of Practioners engaged in the Study and Practice of Laryngology and Otology. Compiled by Richard Lake, F.R.C.S. London: The Rebman Publishing Co. 1899.

This little pocket directory will be found both useful and interesting. Its use is self-evident. Among its points of interest we find that there are under New York 117 names: Berlin, 101; Chicago, 86; London, 53; Paris, 50; Vienna, 25; Philadelphia, 24; Boston, 19. The Boston list is not as accurate as it should be.

Acromegaly. By Guy Hinsdale, A.M., M.D. Pp. viii, 88. With 23 illustrations. Detroit: Wm. M. Warren. 1898.

This essay, to which was awarded the Boylston prize for 1898, is reprinted from *Medicine.* The author has analyzed 130 cases, has collected a bibliography of 377 references, and has described in detail the skeleton of the American giant in the Mütter Museum of the College of Physicians in Philadelphia. The essay contains nothing particularly new, but it gives a valuable summary of the literature of the subject, especially upon the question of the physiological action of the pituitary body. All who are interested in this rare disease and its relations to gigantism will find this volume a trustworthy and complete summary of our present knowledge.

THE BOSTON

Medical and Surgical Journal.

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PROGRESSIVE SURGERY.

SURGICAL practice is constantly preparing surprises for us. Some new organ is successfully operated upon by a man of distinction and the remainder of the surgical world at once follows with further experience and more results. This enthusiasm has sometimes appeared to the conservative onlooker as an excess of zeal, which, in the interests of true progress, he would like to see controlled and restrained. If we are not mistaken, a certain reaction against purposeless operations has taken place in the last few years. We hear less often than we used the weak excuse that the operation will do no harm, even if there be only the remotest possibility of its doing any good. The surgeon, armed as he is with a highly perfected technique, needs judgment and self-control more than most men. Undoubtedly our best surgeons have both of these qualities, which makes a lapse on the part of the minority all the more reprehensible.

We hope that in approaching the problems of the newest field of major surgery, that of the stomach, a conservatism bred of experience with other organs will prevail. Apart from occasional operations on this organ, operative interference is of comparatively recent date. It has already accomplished extraordinary results, particularly in operation for perforated ulcer. Statistics, although admitting an element of error, undoubtedly show a very large percentage of cures, when the perforation has been closed relatively few hours after its occurrence.

This is certainly most encouraging, and must unquestionably be looked upon as an established surgical procedure. When we realize, also, that the entire stomach may be removed without serious detriment to the patient's general health, we can easily see that a beginning merely has been made in the field of stomach operations. If this is the beginning one questions rather anxiously what the end is going to be?

Already we find many advocates of more radical procedures than have yet been attempted; for example, operation on stubborn gastric ulcer which has not yet perforated, or for dyspeptic symptoms which have resisted medical treatment and may be masking more serious affections, like carcinoma. At a recent meeting of the New York Academy of Medicine, Dr. B. Farquhar Curtis reported two early cases in which he believed he had anticipated the development of cancer, or had at least removed the diseased tissue in its earliest stage. All this is distinctly in the line of progress, but, encouraged by such results, we should certainly not allow our enthusiasm to carry us too far. It is merely a step from this to operations on the stomach for symptoms which bear no necessary relation to serious underlying conditions, and it is just here that conservatism, tempered with the most careful judgment, is imperatively called for. We have not yet reached the point where the normal appendix is removed as a routine measure, because it may at some future time be the seat of disease, and, although the cases are not completely parallel, it is hoped that operation on the stomach for disease which has not yet appeared may continue to be regarded as irrational.

The *Medical News* in a recent editorial communication, speaking of Dr. Curtis's cases, makes the following statements: "The step in advance then that is suggested by the proposal to operate before definite signs of cancer have presented themselves, promises to be a gain for surgery, provided certain reasonably sure indications for operative intervention can be established. The proposal to resort to surgery in obstinate cases of dyspeptic trouble, will not seem too radical to those who have realized the hopelessness of ordinary medical treatment in many of them. . . . If by these operations for obstinate gastric dyspepsia, the development of cancer of the stomach could sometimes be anticipated, as would undoubtedly be the case, for long-continued gastric irritation predisposes to cancer; or, as in Dr. Curtis's cases, if the cancer could, by a fortunate chance, be discovered before it had given rise to any characteristic symptoms of a malignant neoplasm, a most fortunate benefit would be secured for the patient and a great surgical triumph scored."

This is dangerous reasoning, It implies that we should look for a chance to operate, in the distant hope of preventing the development of a disease which occasionally supervenes in long-continued gastric irritation, evidently quite an insufficient ground. The argument that a resort to surgery is permitted because medical means have proved ineffectual is again a justification too often used for operation when definite indications fail. In our opinion the surgeon should operate only when his operation promises definite results, and never for the merely negative reason that no harm will be done. Otherwise we are opening the door rather too wide. To operate on the stomach in the hope of eradicating what has not yet developed is certainly a departure from which even the most radical surgery must shrink. We can hardly believe that the conscientious surgeon would ever consent to be placed in such a position; in spite of improved technique, we should not forget that the surgery of the internal organs is never a trivial matter, and should only be undertaken where indications are clear, and the hope of relief at least probable.

Undoubtedly, the surgery of the stomach has before it a brilliant future, but we trust a conservatism will prevail from the beginning which will permit no vain regrets, when through experience the exact limitations of surgical treatment are ascertained.

THE NURSE AS A SPECIALIST.

We have from time to time wondered what is to happen to the nurses in the present rapid development and differentiation of medical practice. We accept the fact of specialism among physicians with varying degrees of equanimity, depending upon our education and prejudices, but with a natural conservatism we are inclined to protest against a like tendency among nurses. Nevertheless the inevitable has happened, and nurses are already specialists. Go to a directory and one is met with the query as to whether one wishes a surgical, or an obstetric, or a general medical nurse, or one experienced in caring for the insane. Each of these varieties is recognized, and no doubt many more will spring into being as the demand arises. The situation is certainly an interesting one, and one to which attention must sooner or later be directed as regards the prescribed course of training. It is evident that certain hospitals offer opportunities which others do not, and that a special training may be had in one which would be quite impossible in another. The result is that nurses skilled in the care of certain types of disease are being turned out in greater numbers year by year, who are likely to find employment only in one branch of medical practice.

This means specialism for nurses, a fact which we should clearly recognize, and not too deeply regret, since it is unavoidable. No doubt this question will finally settle itself, as do many others over which we vainly lament. In the meantime it behooves us to readjust our training schools to meet the coming requirements.

MEDICAL NOTES.

Appropriations for the Paris Exposition. — Massachusetts, New York and California are the only States which have made a special appropriation for the Paris Exposition, in distinction from that of the United States Government. Monographs on various subjects connected with education, social economy and hygiene are being prepared at the expense of the State of Massachusetts, but having reference to the country at large.

Loomis Sanitarium Fire. — Although the Administration Building of the Loomis Sanitarium was totally destroyed by fire on October 14th, the work of the institution has gone on uninterruptedly, the Casino Building having been temporarily adapted to the purposes of administration. It is expected that a new Administration Building will be completed within a few months. None of the patients' cottages were at all injured by the fire.

Distribution of Mortality through the Year in New York State. — It has been estimated in an interesting series of statistics made by the New York State Board of Health that the uniformly unhealthy months in that State are April, July and August, whereas the uniformly healthy months are May, October and November. November has regularly almost or quite the lowest mortality of any month in the year, from four-fifths to seven-eighths the annual average, while July has twice been about one-quarter higher than the average for the year. Midsummer is thus in this State the most unhealthy season and late fall the most healthy season of the year.

The Hospital Ship "Maine." — The hospital ship for use in the British service now being fitted out by wealthy Americans in England for service in the war against the Transvaal, called the *Maine*, is American throughout, but will carry an English crew and corps of attendants — the superintendent alone being an American. It is understood that a prominent drug manufacturing firm of the United States has offered to furnish a full supply of medicine for her outfit without cost. It would be well if, in fitting out this ship, advantage were taken of the experience of the Massachusetts Volunteer Aid Association in preparing a similar ship, the *Bay State*, for service in the Spanish-American War, an account of which is given by Medical Inspector Siegfried, United States Navy, in our issue of August 11, 1898, and still more fully by others in our issue for January 19, 1899.

Medico-Legal Section, International Congress of Medicine. — The following questions will constitute the subjects of reports at the Medico-Legal Section of the International Congress of Medicine; (1) "Pulmonary Docimacy," reports in French (French *Rapporteur*), Messrs. Descoust and Bordas; (2) "Actions (the effects) of the New Smokeless Powder on Garments and the Skin," reports of Messrs. Thoinot and Vieille; (3) "Ocular Putrefaction as a Means to Determine the Date of Death," report of M. Descoust; (4) "The Criminal Combustion of Corpses," report of M. Ogier; (5) "On Accidental Death by Electricity," reports of Messrs. d'Arsonval and Bordas; (6) "Valvular Lesions Consequent upon (resulting from) the Traumatism of the Walls (coats) of the Thorax," reports of Messrs. Castiaux and Laugier; (7) "Expert Examination Rendered Necessary by the Accidents which might Result from the Frequent Use of Food or Drinks which have been Conserved by Chemical Agents" [borax, salicylic acid, formol, etc.], reports of Professor Brouardel and Pouchet; (8) "On Crimes (offences) Resulting from the Practice of Magnetism by Persons who have no Diplomas," reports of Messrs. Gilles de la Tourette and Rocher; other questions can be treated by the members of the Congress who are invited to notify in advance the general secretary of the title of their communication. Clark Bell, LL.D., of the New York Medico-Legal Society, is Chairman of the American Auxiliary Committee of this section.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, November 8, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 68, scarlatina 30, measles 14, typhoid fever 20.

The Progress of Cremation in Boston. — It is stated that more incinerations have been made in Boston than in any other United States city, with the exception of New York, St. Louis, Philadelphia and San Francisco, in spite of the fact that cremation has been practised here only six years.

A Centenarian. — Mrs. Eunice Slade, of Walpole, N. H., has passed her one hundredth birthday. Her oldest child is eighty-one years old.

Malden to have Free Vaccination. — As a protective measure, owing to the occurrence of small-pox in neighboring towns, the Malden, Mass., Board of Health has recommended general vaccination.

The Small-Pox Situation in Chelsea. — Two new cases of small-pox have been discovered in Chelsea, but the spread of the disease has probably been checked. The Board of Health has taken possession of an abandoned schoolhouse, with the intention, it is said, of fitting it up for a quarantine station for persons who are suspected of having been exposed to the disease.

Fewer Contagious Diseases in Cambridge and Brookline. — It is thought that the worst of the epidemic of typhoid fever and diphtheria in Cambridge is over. The Board of Health is continuing, however, to make preparations for using an improvised house on Huron Avenue as a temporary hospital. The situation in Brookline as regards diphtheria and scarlet fever is also rapidly improving. The number of cases reported to the Board of Health is rapidly decreasing.

Typhoid Fever Epidemic at Collinsville. — The spread of typhoid fever at Collinsville, near Lowell, is reported as considerable. Twenty-eight cases have been reported. An investigation showed the cause of the disease to be contaminated well water.

Vaccination of School Children in Everett. — An examination of the scholars in the Everett public schools is being made to ascertain how many have been properly vaccinated. When the examination is completed the order recently issued by the School Committee, compelling the parents of school children to comply with the provisions of the statutes which require all children attending school to be properly vaccinated, will be rigidly enforced. This is a precautionary measure, since at present there are no cases of small-pox in Everett.

NEW YORK.

Montefiore Home. — At the annual meeting of the Directors of the Montefiore Home for Chronic Invalids, which was held on October 29th, the treasurer's report showed the unusual and gratifying fact of a surplus of over $42,000, the receipts during the year having been $77,086, and the expenditures $34,872. Of the gifts received, one of $3,900 was for the support of the country sanitarium of the Home. Of the 577 patients treated during the year only eight were pay patients, and at the close of the fiscal year there remained in the institution 281 inmates.

A Memorial to Samuel Warren. — In St. James's Protestant Episcopal Church on All Saint's Day, November 1st, a beautiful memorial window was unveiled in honor of Samuel Warren, author of "Ten Thousand a Year," and "Passages from the Diary of a Late Physician"; he was the father of the rector of the parish, the Rev. Dr. E. Walpole Warren.

Charles Inslee Pardee, M.D. — Dr. Charles Inslee Pardee, for twenty-five years Dean of the Medical Department of the University of the City of New York, died suddenly on November 3d, of cardiac disease. He was sixty-one years old, and a native of New York City. He was graduated from the University Medical School in 1860, and served with distinction as a surgeon through the Civil War. Later he became a specialist of high repute in diseases of the eye and ear.

Alfred T. Drury, M.D. — Dr. Alfred Thomas Drury died at his home in Brooklyn, N. Y., on November 1st. He was born in Hull, Eng., January 8, 1830, and was a graduate of the Vermont Medical College. He leaves a son, Dr. George Drury, of Brooklyn.

ARMY NOTES.

Casualties and Deaths among Regular and Volunteer Soldiers, May 1, 1898–June 30, 1899. — A recapitulation of the casualties in action and the deaths in the regular and volunteer armies between May 1, 1898, and June 30, 1899, contained in the annual report of the Adjutant-General, just made public, shows a grand total of 10,076 men. The casualty list alone aggregates 3,454, of whom 35 officers and 458 enlisted men were killed and 197 officers and 2,764 enlisted men were wounded. The death list, numbering 6,619, was made up of 224 officers and 6,395 enlisted men. From this total is subtracted the number of officers and men killed in action, as noted above, the remainder of the deaths resulting from various causes, including the following: Wounds, 10 officers and 192 enlisted men; disease, 165 officers and 5,344 enlisted men; accident, 6 officers and 209 men; drownings, 3 officers and 88 men; suicides, 2 officers and 52 men, and murders or homicides, 52 enlisted men. In the regular army the total casualties in action and deaths amounted to 4,155, and in the volunteer establishment to 5,921. In the casualty list the regulars had 127 officers and 1,856 enlisted men killed and wounded, and the volunteers had 105 officers and 1,366 enlisted men killed and wounded. In the regular army there were 2,946 desertions by enlisted men during the period mentioned.

The Army Hospital Ship "Relief." — The United States Army hospital ship *Relief*, as to the unseaworthiness of which so much criticism has recently been made, has arrived at Manila without any untoward incident. In view of the allegations made against her stanchness much of her cargo and all persons except her crew were removed prior to sailing from San Francisco. She will be used at Manila as a floating hospital and will also ply, as required by necessity, among the various islands of the Philippine group.

Miscellany.

RULES AND REGULATIONS OF THE INTERNATIONAL CONGRESS OF MEDICINE.

The Thirteenth International Congress of Medicine will open at Paris on August 2, 1900, and will close on August 9. Its object is of an exclusively scientific nature. Membership will be granted to all doctors of medicine who apply; to the representatives of science who shall be presented by the French Executive Committee or by the foreign national committees. Members will receive their cards on forwarding the sum of twenty-five francs (one pound) to be paid to the Treasurer-General of the Congress. This card will be required for admittance, and to secure for the members the advantages reserved for them. The foreign committees may receive the adhesions of members of their respective nationalities. The committees will hand over the payments received, to the French Secretary-General, who will supply them in return with members' cards in number corresponding to the payments. In forwarding payment to the treasurer, members should put their name, profession and address plainly and legibly, and subjoin their visiting card. Among other advantages, members will be entitled to receive a digest of the proceedings of the Congress, and the printed report of the section to which the member belongs.

The Congress will be divided into the following sections: Biological sciences; medical sciences; surgical sciences; obstetrics and gynecology; public medicine.

An executive committee and an organizing committee will have charge of the preparations and work of the Congress. The Congress will sit every day, whether in the form of general assemblies, or of meetings of each section. Two general assemblies will be held. The first will take place on the opening day of the Congress. The second will be held on one of the ensuing days. The first general assembly will elect the honorary presidents of the Congress. The speeches and addresses, together with the voting ruled by the standing orders, will occupy the entire time of general assemblies. Those members will alone speak who have been appointed or invited by the Executive Committee. All proposals relative to the course or nature of the proceedings of the Congress should be communicated to the Executive Committee before May 1, 1900. The Committee will decide in what measure these proposals shall be countenanced. Each sectional committee shall draw up its own working programme (papers to be read, discussions on the subjects proposed, miscellaneous communications). The speeches delivered at the general assemblies, and the papers read before the sections will be published in the record of the proceedings of the Congress; respecting the miscellaneous communications and the discussions, the Executive Committee reserves full right of discrimination. Each communication will be limited as to time to fifteen minutes, and the speakers who take part in the discussions will be limited to five minutes. The papers, communications and record of the discussions must be lodged, on the same day, with the secretary of the section. The French language is adopted as the official language by the Congress in all international relations. In the general assemblies, likewise in the sectional meetings, the German, English and French languages may be employed. All matters relating to the proceedings of the sections, questions submitted for discussion, etc, are to be laid before the president of the committee of the section. Matters concerning the general organization, business of the Congress, etc., are to be referred to the Secretary-General of the Congress. The second general assembly will meet to determine where the next Congress will be held and to elect the Bureau.

Members desiring to present papers will forward them to the secretary of the section to which they belong, for each sectional committee reserves to itself the right of drawing up its own working programme.

A BOARD OF EXAMINERS IN MEDICINE, PHARMACY, DENTISTRY, ETC., IN PUERTO RICO.

A recent order establishes a board of examiners for the practice of medicine and surgery, pharmacy, dentistry and midwifery on the Island of Puerto Rico. This board consists of three medical men of not less than ten years' practice, legal graduates and of recognized ability in their professions; two graduates in pharmacy and one graduate in dentistry, possessing the same professional standing. The examining board is appointed by the Board of Health for the island and, for purposes of administration, is divided into subcommittees. This examining board is to act under regulations prescribed by the Board of Health and is to hold its sessions in the city of San Juan. The fees received, after all expenses are paid, are to be divided among the members of the board according to the number of applicants examined by each. The fees required are: for physicians and surgeons, dentists and pharmacists, $25; for "practicants" (qualified assistants), $15; for professional nurses, $10; for midwives, $5.00. All applicants for the right to practise must first present their diplomas or certificates to the secretary of the Board of Health, together with certificates from at least two reputable persons as to the good moral character of the applicant. If these credentials are satisfactory the candidate will be authorized to present himself for examination. The questions to be asked must be submitted to the Board of Health and after approval must be used with all individuals examined in the same class. All examinations are to be held in writing. At the conclusion of the examination the papers are to be marked and the recommendation of the Board as to each candidate, together with papers in the case, are to be forwarded to the Board of Health for final action. Licenses to practise are issued only by the Board of Health, an additional fee of $5.00 for such license being charged for all, except nurses and midwives. Applicants who possess diplomas from reputable medical or dental colleges and who have been licensed by State boards in the United States, *after an examination*, may, in the discretion of the Board of Health, be licensed without an examination on payment of the fee of $25. The fees paid by unsuccessful applicants for license are not returned; but such unsuccessful applicants may, with the approval of the Board of Health, be examined at any time after six months and within two years without the payment of any additional fee.

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TERMS OF COMPARISON.

THE *Medical Press and Circular* expresses certain facts in the following passage which our medical teachers would do well to take to heart.

"We have more than once animadverted on the vagueness and incongruity of the terms of comparison so commonly employed by physicians, surgeons and pathologists, in attempting to give a picture estimate of size. There is the conventional millet seed, but it is open to question whether the botanical knowledge of the average reader enables him to identify this particular agricultural product. Though better known, the size of a filbert is equally uncertain, for its dimensions vary within fully as wide limits as the orange. We are all familiar with the tumor which is described as the size of the fist, but every pugnacious schoolboy is aware that there are fists and fists, some of comparatively little import from an offensive point of view, while others inspire respect if not awe. The fetal head is possibly less variable in size than some of the objects just referred to, but even then the observer ought at least to take the precaution to state whether he means the head of the fetus at term or at some earlier period of pregnancy. It would be much more scientific to give the dimensions in inches or centimetres, using fruits and seeds, foot-balls and fetal heads merely to indicate the approximate shape. It may be permissible to describe the terrestrial globe as having the shape of an orange, but it would be grotesque to explain that it was so many times larger than this fruit. For all practical purposes those who make use of these terms of comparison might as well say right out that the growth was 'about the size of a lump of chalk.'"

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PAINLESS EXECUTION.

THE *British Medical Journal* thus takes us to task: "Our American cousins are — in spite of an occasional 'deviation from humanity' in the direction of lynching — a tender-hearted people. For a long time they dropped the tear of sensibility over murderers who were subjected to the barbarous procedure of being 'worked off,' to use the classic phrase of a great artist in that line. In deference to this delicate sentiment hanging was some years ago abolished in New York State, and victims of the law were helped to shuffle off their mortal coil with ease and despatch by electrocution. But still the Transatlantic philanthropist is not happy. Electrocution is said to be uncertain in its action; and, indeed, it has even been suggested that the post-mortem examination which is made immediately after the sentence of the law has been carried out is intended to be the *coup de grâce*, or at any rate to 'mak' sikkar.' Moreover, it is believed that in some cases, at least, electrocution causes pain. With the view of making execution painless, therefore, it was recently suggested in a paper read before the American Association for the Advancement of Science to inflict the last penalty of the law by the administration of hydrocyanic acid under conditions that will ensure death being painless. For this purpose the criminal is to be taken to a 'death chamber,' which is to be connected by pipes with retorts generating the poisonous vapor, and sometime when the patient is asleep the lethal gas is to be turned on, and he will quietly be absorbed into the infinite. The plan only requires the addition of a little slow music to make it realize the aspiration of the poet who prayed that he might drift through sweet sounds to a dream, and through a dream to death. To prevent any needless harrowing of the criminal's feelings by the contemplation of a steadily approaching end, the date of execution is not to be fixed, but is to be left to the discretion of the authorities within certain limits extending over a period of several months. The idea does the greatest credit to the humanitarian sentiment to which it owes its conception. The plan appears to us, however, to have one trifling drawback: the prospect of so luxurious an exit from the stage of this dull world is likely to lead to a large increase of capital offences. Who, indeed, some may be disposed to exclaim, would fardels bear to grunt and sweat under a heavy life when he might find such a quietus by the easy and pleasant method of sticking a bare bodkin into some one whom he disliked?"

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AN UNPARDONABLE INDIGNITY.

THE *New York Medical Record* makes the following editorial comment on the recent unjustified treatment of two New York physicians:

"Few greater outrages have been committed upon medical men in New York than the arbitrary arrest last week of two reputable physicians, Drs. Purdy and Maier, who had been called to a charity case, seeing it but once, and who subsequently recommended that the patient, who was a poor woman, should be taken to Bellevue Hospital, where she died a few days later. An autopsy was held, about the results of which there seems to have been some justifiable difference of opinion, and the matter was left to the police for 'investigation,' it being alleged that the cause of death was criminal abortion. The patient had during life presented the symptoms of acute articular rheumatism and endocarditis, and the existence of pelvic symptoms was not even recognized or suspected by the doctors or by the visiting staff of Bellevue, or, in fact, any one else except the astute coroner's physician. The 'investigation' of the police captain consisted in finding out the names of the physicians who had last seen the patient, and after being pilloried in the yellow journals, and subsequently spending a morning in the coroner's court, they were 'exonerated' by the coroner and the jury; and will for some time suffer from the stigma of a false arrest in a questionable case.

"If this sort of thing is allowed to go on, any doctor may be dragged to a police station at the pleasure of any autocratic coroner or any over-zealous and notoriety-seeking police captain."

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THERAPEUTIC NOTES.

Vomiting of Phthisis. — Berthier[1] frequently observed in patients with commencing pulmonary tuberculosis fits of coughing early in the morning or after the evening meal, followed by vomiting, which he considers as a sort of pulmonary reflex, this, in its turn, exciting nausea, on account of a hyperesthetic condition of the pharynx, the so-called pharyngeal hyperesthesia; to stop this vomiting it is necessary to cause the disappearance of this hyperesthesia. To effect this purpose Berthier resorts to the employment of two-per-cent. solutions of cocaine, with which he swabs the posterior pharynx a couple of hours before the expected attack of vomiting. In three or four days of such treatment the hyperesthesia disappears. The treatment is then discontinued until the reappearance of another attack. Two or three repetitions of the treatment are entirely sufficient to bring about a cure of the trouble.

Salophen in Acute Articular Rheumatism.— To avoid a possible recurrence of the symptoms of this disease, even when salicylic acid had been employed for a few days, Mosler[2] resorts to the use of salophen in doses of 30 to 45 grains per day, after the acute symptoms, such as pains, swelling of the joints, and fever, have been set aside by the previous use of the salicylate. The salophen thus employed must be used for several days. According to the author, the drug is free from any deleterious effect on the stomach or the nervous system; he administered as large doses as one to two drachms daily, for several days, without any harm. It is also useful in rheumatic chorea, and serves as a reliable analgesic and antineuralgic.

Ichthyol in Measles. — Dr. Stizover[3] employs, and, he reports, with great success, a salve made up of ichthyol, thirty parts, and axungia, ninety. This is rubbed on twice a day, in the morning and in the evening. If the treatment is begun before the appearance of the eruption on the surface of the body, but when it is detected already on the mucous membrane of the oral cavity, the course of the disease may be completely interrupted; the eruption does not come out, fever is absent and the child gets well rapidly. But even if applied at a time when the skin is already covered with the eruption, then, after one or two applications, the temperature falls and the eruption pales and finally disappears altogether. In the course of four or five days the patient is entirely cured. To rub off the salve the child is given a warm bath.

Ice Bags in Pyrexia. — The continuous applications of ice bags to combat high temperature has recently been enthusiastically recommended by Dr. Lockard.[4] It is simpler and easier of application than such procedures as cold baths, packing and the like. The bags are applied to that portion of the body where the arteries are nearest to the skin, and the application is continued until the temperature becomes normal. The drawbacks to the employment of the ice bags are not to be compared with what we encounter when, for instance, using cold baths, for the patient need not leave his bed. The number of bags and their method of application will depend on the nature of the disease and the height of temperature. As soon as a fall of temperature is observed, the number of bags must at once be diminished, and, in a general way, it must be observed that a sudden lowering of temperature must be guarded against. For fever of moderate degree four bags will suffice — thus in both armpits and the popliteal spaces; if fever runs high, then the bags to the nape of the neck, to the joints of hands and feet. In pneumonia, headache, pericarditis, and arthritic affections the application is made over the affected part. The effect on the temperature is usually manifest in the course of one hour after the application of the bags, and if continued carelessly, even subnormal temperature may take place.

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Correspondence.

VACCINATING WITH IVORY POINTS.

South Boston, Mass., October 31, 1899.

Mr. Editor: — The ordinary manner in which the ivory point is used when vaccinating is to first scarify the skin with the dry point, and then to wet the point and rub the virus into the denuded surface. By varying this technique slightly, I find a much better result in the percentage of cases that "take."

The variation consists in wetting the point before scarifying. Thus, in using the moistened point to denude the surface of epithelium, we are simultaneously introducing the virus, and this, I believe, explains the better result. This note may be of interest at the present time, when so much vaccinating is needful to protect communities.

Respectfully,
Edward A. Tracy, M.D.

METEOROLOGICAL RECORD

For the week ending October 28th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...22	30.45	44	54	34	57	42	50	W.	S.W.	8	6	C.	O.	
M..23	30.37	48	52	45	79	89	80	W.	N.	6	4	R.	F.	.03
T...24	30.49	50	53	46	81	82	82	N.	S.E.	5	8	O.	O.	
W..25	30.36	62	75	49	87	76	82	S.W.	S.W.	9	12	F.	C.	
T...26	30.16	65	74	56	67	57	62	S.W.	W.	10	9	F.	C.	
F...27	30.20	56	62	50	77	98	88	N.	N.E.	7	10	O.	R.	
S...28	30.12	56	61	50	97	94	96	E.	S.	4	3	G.	O.	.01
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* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

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[1] Gazette Méd. Belge.

[2] Deutsche med. Woch.

[3] Memorabilia, No. 1, 1899.

[4] Centrb. f. d. ges. Therapie, August, 1899.

RECORD OF MORTALITY

For the Week ending Saturday, October 28, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,550,053	1130	398	8.56	11.20	1.76	1.60	2.96
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,266,832	342	119	13.20	12.90	2.70	2.80	6.30
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	539,416	202	58	7.35	13.23	1.96	1.47	1.47
Baltimore . .	506,389	166	50	14.40	15.00	6.00	1.20	6.00
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	305,000	—	—	—	—	—	—	—
Washington .	277,000	97	25	13.39	22.66	4.12	5.15	4.12
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	46	11	13.02	8.68	6.51	—	4.34
Nashville . .	87,754	22	9	29.05	8.30	12.45	—	16.60
Charleston . .	65,165	25	8	8.00	12.00	4.00	—	4.00
Worcester . .	111,732	24	16	20.80	4.16	12.48	—	—
Fall River . .	103,142	—	—	—	—	—	—	—
Cambridge . .	92,520	18	6	47.04	11.76	11.76	11.76	17.64
Lowell . . .	90,114	29	9	3.45	24.15	—	—	3.45
New Bedford .	70,511	18	5	11.76	17.64	—	11.76	—
Lynn	68 218	19	4	5.26	—	5.26	—	—
Somerville . .	64,394	9	5	22.22	11.11	—	—	11.11
Lawrence . .	59,072	14	6	21.42	7.14	7.14	7.14	—
Springfield . .	58,266	8	2	25.00	25.00	—	—	25.00
Holyoke . . .	44,510	10	7	10.00	—	—	—	10.00
Brockton . .	38,759	—	—	—	—	—	—	—
Salem	37,723	7	3	14.28	—	—	—	14.28
Malden . . .	36,421	7	—	—	14.28	—	—	—
Chelsea . . .	34,235	18	5	—	5.88	—	—	—
Haverhill . .	32,651	7	2	14.28	14.28	—	—	—
Gloucester . .	31,426	5	2	40.00	20.00	—	—	—
Fitchburg . .	30,523	5	2	—	20.00	—	—	—
Newton . . .	30,461	10	4	—	—	—	—	—
Taunton . . .	28,527	17	6	17.64	5.88	—	11.76	—
Everett . . .	28,102	5	1	—	20.00	—	—	—
Quincy . . .	24,578	—	—	—	—	—	—	—
Pittsfield . .	23,421	—	—	—	—	—	—	—
Waltham . .	22,791	2	—	—	—	—	—	—
North Adams .	21,583	6	2	16.66	—	—	16 66	—
Chicopee . .	18,316	9	2	11.11	33.33	—	11.11	—
Medford . . .	17,190	6	2	—	—	—	—	—
Newburyport .	15,036	3	1	33.33	—	—	—	33.33
Melrose . . .	14,721	2	1	—	—	—	—	—

Deaths reported 2,303; under five years of age 778; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 259, consumption 295, acute lung diseases 279, diphtheria and croup 94, diarrheal diseases 64, typhoid fever 43, whooping-cough 18, cerebro-spinal meningitis 15, scarlet fever 13, measles 8, erysipelas 4.

From whooping-cough New York 9, Philadelphia 4, Boston 2, Washington, Providence and Cambridge 1 each. From cerebro-spinal meningitis New York 6, Boston and Worcester 2 each, Lynn, Somerville and Gloucester 1 each. From scarlet fever New York and Philadelphia 4 each, Boston, Washington, Haverhill, Gloucester and Amesbury 1 each. From measles New York 8.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending October 21st, the death-rate was 19.0. Deaths reported 4,160: acute diseases of the respiratory organs (London) 306, diphtheria 129, diarrhea 103, fever 82, measles 75, whooping-cough 35, scarlet fever 33.

The death-rates ranged from 9.8 in Croydon to 28.4 in Liverpool; Birmingham 19.5, Brighton 13.1, Cardiff 15.2, Gateshead 21.0, Hull 16.9, Leeds 19.3, London 18.0, Manchester 23.6, Newcastle-on-Tyne 20.3, Sheffield 20.6, West Ham 18.4.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 3, 1899.

R. Spear, assistant surgeon, detached from the "New York," ordered home and granted sick leave for two months.

R. K. McClanahan, assistant surgeon, detached from the Naval Hospital, Key West, Fla., and ordered home and granted sick leave for two months.

SOCIETY NOTICES.

Suffolk District Medical Society. — The Section for Clinical Medicine, Pathology and Hygiene will hold its meeting at 19 Boylston Place, Wednesday, November 15, 1899, at 8 p. m.

At 8 o'clock: Dr. R. F. Chase will report "A Case of Brachycardia."

At 8.15 o'clock: Dr. J. W. Courtney will present "The Report of an Interesting Brain Case."

At 8.30 o'clock: Dr. V. Y. Bowditch will read a paper entitled "The Massachusetts State Hospital for Consumptives at Rutland; Its Purpose and the Work Accomplished during its First Year." Discussion by Drs. F. I. Knight, E. O. Otis and A. Worcester.

J. Bergen Ogden, M.D., *Secretary*,
Harvard Medical School, Boston.

New York State Association of Railway Surgeons.— The ninth annual meeting of the Association will be held in the Academy of Medicine, No. 17 West Forty-third Street, New York City, Thursday, November 16, 1899.

RECENT DEATHS.

Luther Dana Woodbridge, M.D., M.M.S.S., died in Williamstown, November 3, 1899, aged forty-eight years.

Adam Calhoun Deane, M.D., M.M.S.S., died in Greenfield, November 7, 1899, aged seventy-eight years.

J. K. Phillips, M.D., of Bangor, died November 5th, at the Eastern Maine General Hospital, after an illness of several days. Dr. Phillips was born in Bangor, February 25, 1858. He prepared for college at Andover Academy and entered the Harvard Medical School, taking a four years' course and graduating in 1885. The following two years he was interne at the Massachusetts General Hospital. He studied also in Germany and Dublin. Dr. Phillips came to Bangor in 1888, and had since been engaged in the practice of his profession there. He was a surgeon of ability and was one of the visiting surgeons of the Eastern Maine General Hospital. He was a member of the Maine Medical Association and of the Penobscot County Medical Association, of the Harvard Club of Bangor and of the Harvard Medical School Alumni Association.

BOOKS AND PAMPHLETS RECEIVED.

A Text-book of Diseases of the Nose and Throat. By D. Braden Kyle, M.D., Clinical Professor of Laryngology and Rhinology, Jefferson Medical College, etc. With 175 illustrations, 23 of them in colors. Philadelphia: W. B. Saunders. 1899.

Report on the Investigations into the Purification of the Ohio River Water for the Improved Water Supply of the City of Cincinnati, O. Made by the Board of Trustees, Commissioners of Water Works. Cincinnati: Commercial Gazette Job Print. 1899.

Hand-book of Physiology. By W. Morrant Baker, F.R.C.S., and Vincent Dormer Harris, M D. (Lond.), F.R.C.P. Fifteenth American edition. Revised by Warren Coleman, M.D., and Charles L. Dana, A.M., M.D. Illustrated. New York: William Wood & Co. 1899.

Hand-book of Optics for Students of Ophthalmology. By William Norwood Suter, B.A., M.D., Professor of Ophthalmology, National University, and Assistant Surgeon, Episcopal Eye, Ear and Throat Hospital, Washington, D. C. New York: The Macmillan Co. 1899.

A Compend of the Practice of Medicine. By D. E. Hughes, M.D., Chief Resident Physician, Philadelphia Hospital. Sixth physicians' edition, including a Section on Mental Diseases and a very complete Section on Skin Diseases. Philadelphia: P. Blakiston, Son & Co. 1899.

Interstitial Gingivitis, or So-called Pyorrhœa Alveolaris. By Eugene S. Talbot, M.D., D.D.S., Professor of Dental and Aural Surgery, Northwestern University, Woman's Medical School, etc. With 73 illustrations. Philadelphia: The S. S. White Dental Manufacturing Co. 1899.

The Cerebro-spinal Fluid: Its Spontaneous Escape from the Nose, with Observations on its Composition and Function in the Human Subject. By St. Clair Thomson, M.D., M.R.C.P. (Lond.), F.R.C.S. (Eng.). London, Paris, New York and Melbourne: Cassell & Co., Limited. 1899.

A Class Book of Elementary Practical Physiology, including Histology, Chemical and Experimental Physiology. By De Burgh Birch, M.D., C.M., F.R.S.E., Professor of Physiology in the Yorkshire College of the Victoria University, etc. Philadelphia: P. Blakiston, Son & Co. 1899.

On Fractures and Dislocations. By Prof. Dr. H. Helferich, of Griefswald. Illustrated with 68 plates and 126 figures in the text, drawn by B. Keilitz. Translated from the third edition by J. Hutchinson, Jr., F.R.C.S., Surgeon to the London Hospital. New York: William Wood & Co. 1899.

A Manual of Diseases of the Nose and Throat. By Cornelius Godfrey Coakley, A.M., M.D., Clinical Professor of Laryngology in the University and Bellevue Hospital Medical College, New York City, etc. Illustrated with 92 engravings and two colored plates. New York and Philadelphia: Lea Brothers & Co. 1899.

Original Articles.

AN OBJECT LESSON IN MILITARY SANITATION.[1]

BY CHAS. R. GREENLEAF, M.D.,
Colonel, Medical Inspector, United States Army.

The military camps that are now, and have been, located on the outskirts of the city of San Francisco, present an object lesson in sanitation that is interesting and striking.

These camps, located within a couple of miles of each other, nearly equal in the number of men they contained (about 12,000), have been subjected to identical conditions as to climate, soil, water supply, food, etc. In one, Camp Merritt, the men were scourged with sickness and death and large numbers of them were permanently invalided; local epidemics became general and soon the entire camp was so thoroughly infected that it was of necessity abandoned.

In the other camp, at the Presidio, there has been but little sickness (the percentage never exceeding five and a half to the aggregate strength), few deaths and a few cases permanently invalided; local epidemics of contagious disease, due to importation, have been quickly controlled and have not in any case extended beyond the respective commands which brought them, nor up to this date has a single case of infectious disease originated in the camps. Quite naturally, the question has been asked, "Why is there this difference in the health conditions between the two camps?" The answer is simple: At Camp Merritt the advice of sanitarians was seldom asked, and when asked was not followed, and nearly every law of health was either ignored or violated.

At the Presidio the advice of sanitarians was freely sought, accepted and carried out, no pains being spared to secure as far as possible compliance with the laws of health. Officers and men alike appear to have recognized the benefits of sanitation and have been not only willing to accept the advice of its teachers, but ready to carry out that advice to its fullest extent; and here I wish to bear willing testimony to the valuable assistance that has been rendered by General Shafter in the work, which without his co-operation could not have been successful; he has taken a personal interest in its details, approved without hesitation the various measures that have been laid before him, encouraged the workers and through his knowledge of existing military conditions in this section has made practical suggestions that have been of the greatest value; as sanitarians we certainly owe him a debt of gratitude.

The object in establishing these camps was to shelter and care for the State volunteers returning from the Philippine Islands to be mustered out of the service of the United States, and for the recruits and new volunteer regiments gathered from all parts of the United States and sent to San Francisco for transportation to the Philippines. The problem to be solved in their sanitation was a complicated one, since the methods to be decided upon must apply to organizations coming from opposite parts of the world, where climatic and other influences were known to induce a variety of conditions that could render the men from both ends of the line liable to disease.

The men of the incoming regiments were assumed to be physically below par after a year's campaigning in the tropics, and therefore peculiarly liable to pulmonary disorders from the radical change of climate, or to intestinal diseases from tropical infection, or from dietetic indiscretions after arrival, since, in its outburst of patriotism, San Francisco held an "open door" for these returned heroes to its stores of both solid and liquid food; the infectious diseases of the tropics, bubonic plague, etc., were liable of importation, and in the indifference of the returned soldier to any care of self, there was good ground for apprehension as to his health.

The men of the outgoing regiments, being recruits, were considered as especially liable to disease, since it is a well-known fact that few of this class escape a visit to the doctor before the end of their first six weeks of service by reason of the change in their environment and habits of life; they are, moreover, to a greater or less extent, carriers of infectious disease, usually contracted at home, which unless closely watched will soon contaminate a camp.

The location of the camp was by no means a desirable one; the soil was retentive, the terrain broken and hilly, the climate very trying, high winds and heavy fogs being of daily occurrence, while the water supply was not much more than sufficient to meet the requirements of the ordinary garrison.

The advantages of the military situation, in an organized plant, with abundant supplies, ample transportation and the proximity of a large and prosperous city, were so great that it was determined to overcome the difficulties that were presented and by a little extra exertion and care make the camps thoroughly healthy and convert them into models of successful sanitation; three separate camps were accordingly planned for the Presidio Reservation and one (a detention camp) for Angel Island in the bay. The first was the model camp, to accommodate five regiments of returning volunteers, about 5,000 men; the next was the volunteer camp, to accommodate four regiments of outgoing volunteers, about 5,200 men, and the third, a recruit camp, for about 2,000 recruits, to fill the regular regiments already in the Philippines. The detention camp was made for about 1,500 men.

In planning these camps the primary objects were to remove the kitchens as far as possible from the latrines, to provide a safe method for the disposal of excreta, garbage, etc., to secure means for the personal cleanliness of the men, to heat their quarters and to supply them with an abundance of good food and water.

The model camp was laid out in two sections, one for three regiments, the other for two, each in the form of a parallelogram, the central line of which was occupied by wooden sheds for the kitchens and mess halls; opposite each end of these buildings a row of Sibley tents (floored) was pitched, and on the flanks and rear the latrines and bathhouses were placed; an emergency hospital, to accommodate six beds, and a small dispensary was provided on the staff line of each regiment; a zinc-lined wash trough supplied with a dozen bib cocks was placed in the rear of each mess hall, to be used as a lavatory; a grease trap, connected with a sewer for liquid garbage, was placed near the door of each kitchen, and galvanized-iron garbage and ash cans were placed on the porch. Stoves were set up in every tent and in the mess halls; these buildings, when not in use for meals, being occupied as gathering places — social halls — for the men. In the volunteer and recruit camps the same general plan was followed, the relative positions of the kitchens and latrines being changed owing to the hilly and broken lay of the land. Large caldrons were set up at convenient places in the camp, for heating water that might be used either to disinfect any fabrics, or to furnish hot water for laundry purposes; galvanized-iron wash tubs in the proportion of two to each company were furnished, and night-soil tubs were placed in every company street at "tattoo" for the use of the men during the night, a sentinel being posted in the street to see that the orders regarding their use were carried out. The water supply was increased by a connection with the city mains, and an abundance of water secured for all purposes.

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[1] An address delivered before the San Francisco County Medical Society, San Francisco, Cal.

The detention camp on Angel Island was provided for the shelter of any troops that might have to be placed in quarantine, by reason of infectious disease on the transport that brought them from Manila. It was pitched in two equal sections separated from each other by a wide street, in the centre of which a double line of barbed-wire fence, of eight strands high, was placed, the interval between the fences serving as a beat for sentinels. The object of this division was to enable either of two commands that might be quarantined on different dates to complete its period of detention without interfering with the other.

Arrangements were made for a careful inspection of all incoming transports and for the immediate segregation of any sick that might be among the soldier passengers, and before fresh troops were embarked the transports were disinfected.

The railway service was also considered, and arrangements made for the daily cleansing and disinfection of water closets and urinals on all troop cars while *en route*, and for an abundant supply of drinking water for the men.

The plan of construction of the latrines and the method of disposal of excreta is that recommended by a board of medical officers composed of Major Reed, United States Army, and Majors Vaughan and Shakespeare, United States Volunteers, and is described in the following extracts from its report:

A trough made of No. 22 galvanized iron, fourteen feet long, twenty-two inches wide at the top, parabolic in cross section, and with a maximum depth of eighteen inches, if set in a light wooden framework, which serves as a protective crate in transportation, gives support to the trough while in position, and serves for the attachment of a lid in two sections, furnished with seven seat holes. These holes are shaped so as to render soiling of the seat difficult, and a slanting board one foot wide permanently fixed at a proper angle above the seat prevents the men from getting up on it with their feet. When in position one end of the trough is raised four inches higher than the other. The trough is placed in an ordinary frame privy house. At the upper end of the trough there is placed a galvanized-iron gutter of proper height and inclination leading into the trough to serve as a urinal. The rear side of the gutter or that attached to the wall of the building is higher than the front side, to prevent soiling the building. The trough is prepared for the reception of fecal matter by filling it with water until a certain level indicated by a line on the inside of the trough is reached. A measure for the purpose, and holding one-sixth of a barrel, is now filled with quicklime and emptied into the water; some dry lime should also be placed in the urinal. The lime in the trough is thoroughly stirred with a wooden paddle. This stirring is repeated three times every day. The wooden paddle when not in use stands in a pail filled with milk of lime. Toilet paper is provided for the men's use in the latrines, because large pieces of newspaper will float on the water holding masses of fecal matter above the surface, thus exposing it to the flies and other insects.

Once a day the contents of these troughs are pumped out into an odorless excavator, carted away and properly disposed of. The milk of lime destroys the typhoid bacillus, and the contents of the trough, if properly cared for, will be quite innocuous. Not only is the milk of lime and fecal matter innocuous but its value as a fertilizer is considerable.

Our experience during the war has demonstrated the fact that the untrained soldier cannot be depended upon for thoroughly cleansing a camp, or for properly removing and disposing of excreta; a corps of civilian scavengers was therefore employed to perform this important duty; it consisted of two overseers, twenty-two night scavengers, fifty-four day scavengers, and seventeen teamsters, who used in their work five odorless excavating carts, six sanitary cars, and twelve dust carts. This force emptied the latrine troughs twice in twenty-four hours, and twice daily removed all garbage, ashes, and camp waste from the camp and its vicinity; the soldiers kept their tent floors, kitchens and mess halls and company streets swept clean twice daily, and one man from each company was on duty each day in the company latrine to keep it clean and stir the lime solution frequently.

A medical officer of the regular army was detailed as inspector of each camp, whose duty it was to visit the various regiments, and to see that the tents, kitchens, latrines, bathhouses, etc., were kept clean and that the food was of proper quality and quantity and well cooked.

Immediately upon the arrival of a regiment in camp, the inspector had its emergency hospital fully equipped, and gave orders that any temperature cases that might be found at sick call should be at once admitted, and a blood examination made, to determine if possible the diagnosis; if the fever continued beyond twenty-four hours, the case was to be sent to the General Hospital, located on the reservation and close to the camps, where it was kept until the character of the disease was determined and its treatment carried to its termination. The object of this procedure was to separate from the regiment, at the earliest possible moment, all cases that might prove to be of an infectious nature. Shortly after the volunteer troops arrived, some cases of small-pox developed in one of the regiments, and thereafter all incoming regiments were at once revaccinated, the operation being repeated every five days on unsuccessful cases until a success was obtained, or the individual was, in the opinion of the medical officer, immune.

The following sanitary regulations were published for the government of the camps, a copy being given to each colonel and to each surgeon immediately after arrival.

The commanding officer of the troops occupying the camps will detail from his command two sanitary inspectors; one from the line, preferably a major of the regiment, and the other a regimental medical officer, whose daily duty it shall be to jointly inspect the regiment, inquiring into the general police of the company quarters and streets, the kitchens, the food, its preparation, quality and method of serving, the latrines, urinals and sewers, and making to the regimental commander a brief report of any unsanitary conditions they may discover, this report to be forwarded the same day to the medical inspector of the army at department headquarters.

One medical officer and one hospital steward from each regiment will be required to be present for duty with the regiment at all times of the day and night.

A daily sick call will be held and slight cases of illness treated in quarters or in the regimental hospitals provided for that purpose, but all men who are likely to remain sick more than three days will be promptly sent to the General Hospital at the Presidio of San Francisco.

If any case of infectious disease occurs, the fact will be promptly reported to the camp surgeon, who is authorized to make the proper disposition for its isolation and care.

An ambulance fully equipped with a team will be assigned to the camp by the commanding officer of the Presidio. This ambulance will report daily to the camp surgeon at sick call, remaining in the camp during the day, subject to his orders. Under no circumstance will this ambulance be used for any other purpose than the transportation of the sick, or medical supplies. The commanding officer of the Presidio will also cause another ambulance to be sent to the camp for service at night time. This ambulance will remain on duty from retreat to reveille for night emergency service. When the night ambulance reports for duty, the day ambulance will be relieved and returned to the post.

Company commanders will caution their men against exposure to the fogs and high winds that prevail here, especially in the early morning and evening, at which times overcoats will be worn. Riding on the "dummy" of the street cars, especially at night, is particularly hazardous to men recently returned from service in the tropics. Guard duty and other military functions required at these hours will be held in overcoats, and at breakfast and supper the stoves in the dining-rooms will be provided with fires. The sale, by civilians, of food or drink within the limits of the camp will be forbidden.

At retreat, urine tubs, two to each company, will be placed in each company street, and men desiring to urinate at any time during the night will be required to use them. The tubs will be removed from the company street at reveille to a place convenient for the scavengers, who will remove, clean and place lime in them for use the next night.

The quartermaster's department will be required to provide an ample force of scavengers to clean the latrines and urinal troughs at least once daily, and to refill the troughs with milk of lime; they will also remove all kitchen garbage, and either cremate it or dispose of it in such safe place as the quartermaster shall direct. Particular care will be enjoined on company cooks to keep grease traps clean, and to deposit all solid garbage in cans prepared for that purpose in time for its removal by the scavengers.

The quartermaster's department will furnish to each regiment an ample supply of necessary policing implements to enable the men to thoroughly and effectively police the camp daily.

In addition to the inspections required in the above order, the camps were visited daily by the writer, who found that as a rule the regulations were properly carried out by officers and men.

Nearly every body of troops brought with it some form of infectious or contagious disease; typhoid fever, tropical dysentery, diphtheria, small-pox, measles and mumps appeared as constant importations; the cases were, however, promptly segregated from the command, all infected material was disinfected or destroyed, men who had been exposed to the contagion were isolated and quarantined, and in the case of small-pox everybody was vaccinated. Not a single case of any infectious or contagious disease has originated in the camps. Recommendation was made to the Washington authorities to detain all outgoing troops in these camps for a sufficient time to cover the ordinary incubative period of these diseases and eliminate all suspects before embarkation on transports, but it was not deemed advisable to carry sanitary precautions that far.

The length of this address precludes comment, which indeed seems unnecessary, since the facts speak so plainly for the benefits of thoroughly digested sanitary precautions when conscientiously and faithfully carried out.

TENTAGE FOR TROPICAL SERVICE.

BY EDWARD L. MUNSON, M.A., M.D.,
Captain and Assistant Surgeon, United States Army, Washington Barracks, D.C.

With the military occupancy of our new island acquisitions the unsuitability for tropical climates of our regulation tentage — particularly that used for the shelter of the sick — became at once apparent. While not seriously defective when used under the conditions of weather and temperature for which they were originally designed, the several types of tent used in our service are all intensely hot and close under the vertical sun and in the humid atmosphere of the tropics. With reference to the hospital tent these undesirable qualities appeared to be presumably due:

(1) To the impingement of the direct solar rays upon the single thickness of canvas of the walls and ends.

(2) To the insufficient air space and limited opportunity for the movement of air between the fly and roof of the tent.

(3) To the inadequate size and improper location of the openings for ventilation.

After some consideration the writer, some months since, suggested the following changes in the regulation hospital tent, which, it was believed, would materially improve the latter for service in the Torrid Zone:

(1) That the tent fly be enlarged two feet in length and four feet in width.

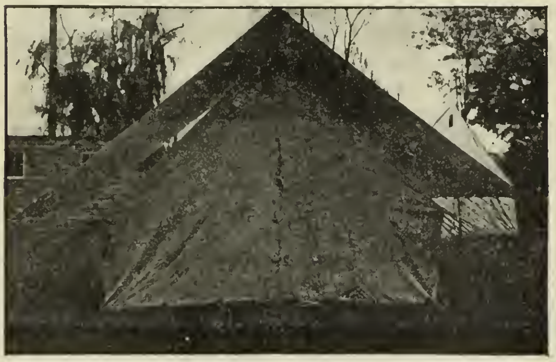
(2) That this fly be raised upon a light false ridge placed one foot above the true ridge; this false ridge being four feet longer than the true ridge and projecting two feet to the front and rear. This is held in place by increasing by one foot the length of the present pins in the tent uprights and inserting these into suitably located sockets, metal lined to prevent

splitting, in the false ridge. For convenience of transportation the latter is sawn obliquely through the centre and the ends enclosed in a heavy galvanized iron box to form a joint. Small iron pins at each end pass through suitably located eyelet holes to hold the fly in position; while one end of the false ridge in each tent is provided with a locking arrangement by which several tents may be joined firmly together to form a ward.

(3) That the canvas comprising the top of the tent be cut out for a space two feet wide on each side of the ridge and running the entire length of the tent except one foot, front and rear. The canvas thus removed is replaced by heavy rope netting, having a mesh about two inches square.

(4) That the tent fly be made of white canvas to better reflect the heat rays, while the tent itself is of dark canvas, to properly subdue the light in the interior.

The above changes theoretically ensured complete protection of the walls — and nearly so of the ends — from the rays of the sun; a large free space, at least one foot wide, between the tent roof and fly, from which the heated air could be readily driven by perflation, and, finally, complete ridge ventilation of the tent itself, rendering the stagnation of heated or impure air impossible. As at present arranged this tent has forty-eight square feet of ventilating surface where the regulation tent has less than two-thirds of one square foot; and currents of air passing horizontally over the netting under the fly exert a direct aspiratory effect on the air within the tent itself. The two-foot overhang of the fly, front and rear, implies the pitching of the hospital ward in tent sections four feet apart; the sheltered intervening spaces allowing free lateral ventilation, the complete isolation of patients attacked with contagious diseases, as yellow fever or small-pox, direct entrance and egress of the inmates, and furnishing a covered area for the protection of ward property. When tents are pitched together the two flies are prevented from gaping by being made slightly wider at the base than the centre and thus readily overlap through the proper location and traction of the corner guy ropes.



Front view of tent showing lateral overhang of fly and large air space between roof and fly. (Regulation hospital tent in background.)

Through the kindness of the surgeon-general, a tent made on the above plan was recently received at Washington Barracks for experimental purposes. For comparison it was pitched within a few feet of a regulation hospital tent and also the regulation conical wall tent of the latest model. A thermometer was suspended in the centre of each tent about four feet from the ground; and, for better comparison, one was also placed in the dense shade given by nearby foliage, while another was exposed in the open air to the direct rays of the sun. The several temperatures were taken hourly during the heated parts of the day and were noted as follows:

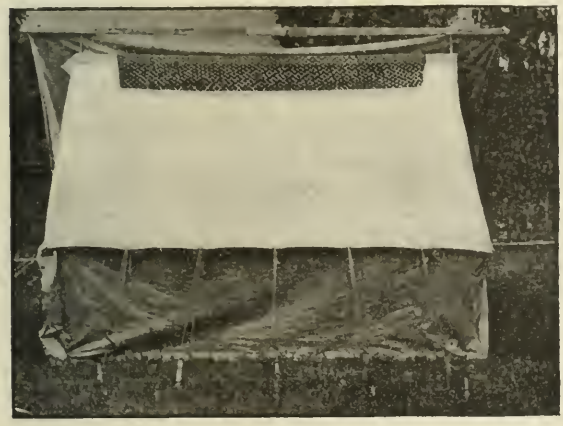
Date.	Hour.	In the sun.	In the shade.	Imp. hosp. tent.	Reg. hosp. tent.	New model conical wall tent.	Remarks.
Sept. 7th.	1	87°	79½°	84°	89°	93½°	Walls down.
	2	94°	80½°	86°	94½°	100°	" "
	3	90°	83°	86°	93°	97°	" "
Sept. 8th.	11	95°	84°	89½°	99°	107°	" "
	12	97°	88°	93°	97½°	106½°	" "
	1	103½°	88½°	90½°	96°	98°	Walls rolled up.
	2	104½°	93°	90°	94°	93½°	Thermometer 2
	3	93°	88°	89°	92°	91½°	feet above level of wall.

These figures show a temperature in the improved hospital tent, with walls down, never more than 5½° higher than that in the open air and the densest shade available, and once only 3° higher. As compared with the regulation hospital tent, with walls down, the temperature of the improved tent averaged (five readings made during two days) 87.5° for the latter and 94.5° for the former — an average difference of 7°. The improved tent was never less than 4½° cooler and twice was 8½° cooler. On one occasion subsequently a difference of 10½° was noted. As compared with the conical wall tent the temperature ranged from 9½° to 18½° lower in the improved tent. Such a divergence of temperature means in the tropics all the difference between comfort and distress for the well and such relief from great and depressing heat as would do much to bring about recovery in the sick. It was noted that the improved tent cooled down when, for instance, the sun was obscured by clouds, much more rapidly than did the old style tents. The latter absorbed and apparently imprisoned the solar heat, so that frequently the thermometer on the inside of the closed tent was considerably higher than the one outside exposed to the direct solar rays. Such an obviously undesirable condition of affairs was never even approached in the improved tent.

Side view of tent showing overhang of fly, front and rear and color combination.

While the rolling up of the tent walls in the regulation tentage considerably lowers the inside temperature, the ventilation of the improved tent is so complete that such action lowers the thermometer no more than 2° or 3° at most; so that the sick can be kept in the subdued light and comparative quiet and seclusion of the closed tent without discomfort or depressing effects. This is of particular importance in the treatment of such affections as typhoid fever, where glaring light and outside sights and sounds are a constant source of irritation. By this means also the annoyance from flies — the bane of camps in warm weather — is largely avoided. With tent walls fully rolled up the temperature of the improved tent ranges from 3° to 6° lower than in the regulation tent — about the same difference also existing between the former and conical wall tent.

The principles as outlined for the case of the hospital tent may also be applied to the officers' wall tent and would certainly conduce much to the comfort of the inmates during warm weather. In order that such a tent might be still available for use in cold weather within the United States it is merely required to issue the present size fly, put it on over the true ridge and peg it down so as to lie flat on the canvas roof and thus close the ventilating opening, either with or without the use of the false ridge and larger fly; or the tent might be issued with a separate ridge-cap of canvas, extending several inches below the lower border of the netting. Such a ridge-cap could readily and securely be fastened in place by means of grommets and eyelets when required.



Side view of tent, fly thrown back, showing false ridge and ventilating space.

The old style conical wall or modified Sibley tent already possesses excellent ventilation through the opening at the apex. It lacks, however, a fly; and no tent should be issued for use in the tropics without such additional protection. Such a fly could be made in the form of a truncated cone, having a diameter at base and apex two feet greater than that of the tent, and could be supported from a large ring and the centre pole, the same as is the tent itself. The length should, of course, be a trifle greater than the canvas of the present tent, exclusive of its wall. The addition of such a fly entails but little extra expense and would require absolutely no changes in the tent as now supplied. The maintenance of comfort, and hence efficiency, of the command necessitates the issue of such additional protection.

The common wall tent, on account of its size and lack of fly, is totally unsuited for use in the tropics; and this cannot be too strongly impressed upon those in authority who, lacking experience in its use under such conditions, still insist upon its employment. Troops who are to live under canvas in the low latitudes should only be quartered in the improved hospital tent or in the conical wall tent provided with a fly as suggested above — a fact appreciated as regards the sick by the United States Army Board of Equipment in its prompt adoption for the military service of the improved hospital tent as just described.

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THE TREATMENT OF POST-PARTUM HEMORRHAGE.[1]

BY J. Z. CURRIE, M.D., L.M., PH.D., CAMBRIDGE, MASS.

The only excuse I can offer for bringing before you a subject concerning which but very little that is either new or original can be said and respecting which I cannot claim to have any special knowledge, is its extreme and very general importance. It is of extreme importance inasmuch as in pronounced cases the life of the patient depends almost wholly upon the means resorted to for relief within a very few moments. In addition to this, it may be said that the sudden and unexpected loss of a patient under existing circumstances is, if possible, fraught with a greater degree of sadness than under almost any other conditions. It is of extreme importance, also, because of the necessity for immediate action in many cases. No time can be taken for determining upon a certain course of treatment and but little for exploration. Hesitation and precipitancy are alike fatal. It is of general importance, inasmuch as there are comparatively few practising physicians who are not liable to have a case of this kind to deal with at any time and of those whose practice does not expose them to this contingency, some may be called upon in case of an emergency, or they may be indirectly interested in consequence of social relations.

It is not my intention in this paper to review the numerous and widely diverse methods of treatment, which have been recommended for the relief of post-partum hemorrhage but simply to indicate that course of procedure, which, in my opinion, is most likely to ensure the best results in each case.

In cases of post-partum hemorrhage, as in all other similar instances, it is first of the greatest importance to determine, as accurately as possible, the source of the hemorrhage. In these cases there are three principal sources of the hemorrhage:

(1) Injuries to the genital tract which occur during labor.

(2) The sinuses in the lower uncontracted portion of the uterus, the fundus being firmly contracted.

(3) The uncontracted uterus as a whole.

Injuries which occur during labor, and which are recognized only after completion of labor, vary in importance from a slight rent or tear to rupture of the vagina. The most probable site of a tear is in the cervix, although it may occur at any part of the introitus or within the vagina. The bleeding from the torn vessels may be sufficient to destroy life directly or it may be only sufficient to prevent contraction, or the continuance of contraction, by diminishing the tone of the contractile tissue.

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[1] Read before the Cambridge Society for Medical Improvement, February 27, 1899, and before the Boston Gynecological Society, May 11, 1899.

In every case of post-partum hemorrhage, whether apparently serious or otherwise, the condition of the uterus as to contraction should be ascertained at once. If the fundus of the uterus, as felt through the abdominal walls, is firmly contracted and the hemorrhage is profuse and persistent, it is safe to assume that the blood does not come from that portion of the uterus. It is, however, presumptive evidence that a tear has occurred at some other portion of the genital tract, the only other probable source of the hemorrhage being the sinuses in the lower uncontracted portion of the uterus. The gravity of the injury can be quite accurately estimated by the amount of shock which is at once apparent before a large amount of blood has been lost. If, under these circumstances, there is no great urgency, the patient should be placed in such a position as will enable the operator to see well and work readily. A hot-water douche should be used, and then with two fingers distending the vulva, its condition can be quickly ascertained. Tears within the vagina and in the cervix cannot always be recognized by touch and it is better not to devote too much time to exploration in this way, unless the hemorrhage is not controlled by ordinary treatment. As to treatment of these cases, it may be said, in general, that if the wound is readily recognized it is better to repair the injury at once, if possible. If the wound is deeply seated within the vaginal canal and the hemorrhage not excessive, ice or hot water may be used. Both of these agents are frequently very effectual but, in my opinion, the use of hot water is the most satisfactory. It should be used in large quantities and even if it do no good otherwise, the parts will thus be thoroughly cleansed and prepared for further treatment. If the bleeding is not checked in this way the whole internal cavity should be firmly tamponed with antiseptic or sterile gauze in such a way as to exert firm pressure upon the bleeding points. If this is not successful the probability of a cervical rent is increased. If the tampon introduced as just described fail to control the hemorrhage it should be removed at once and the bleeding points sought for. The uterus may be drawn down as near the vulva as possible and the bleeding vessels secured by ligatures, or by a ligature *en masse.* In cases of lacerated cervix it is not usually possible to properly repair the injury at this time, but if the character of the wound is such as to render it possible and the condition of the patient will permit, it should be done. However, the result in this respect is usually unsatisfactory, and the opertion should be regarded as one for the purpose of securing the bleeding vessels. If the hemorrhage is excessive at the outset and from within the vaginal canal, with the fundus contracted, the whole cavity should be packed at once after using a hot-water douche.

The only remaining source of internal hemorrhage, under the conditions just described, is from the sinuses in the lower uncontracted portion of the uterus. This variety of hemorrhage may be profuse but is much more frequently slight and constant. This condition is seen most frequently following cases of placenta previa. If the hemorrhage is profuse the indication is to tampon the whole internal cavity at once, after thorough irrigation with hot water and in all cases, when hemorrhage, whether profuse or otherwise, follows a case of placenta previa, the same course should be pursued. This variety of hemorrhage is almost certain to be constant, even if not profuse and under the circumstances the loss of even a small amount of blood is important, so it is best to stop the flow as well as the probability of its recurrence at once.

A much more frequent variety of post-partum hemorrhage than that already referred to, is that caused by failure of the uterus to contract after the completion of labor. This failure to contract is usually due to atony of the uterine muscles and the object of treatment should be to overcome this condition and cause contraction. The treatment of these cases must, of necessity, vary with the gravity of the case. If the flow is not great and danger to the patient not imminent, compression of the uterus through the abdominal walls will frequently cause it to contract and check the hemorrhage. The uterus should be grasped within the hand as soon as it can be distinguished and squeezed tightly or kneaded. Simple pressure upon the uterus is of no service in causing contraction. Bimanual compression is still more efficient, the mere introduction of the hand into the uterus sometimes acting as a stimulus to contraction. This proceeding, however, is still more effectual when with one hand grasping the uterus through the abdominal walls and the other within the vagina, two fingers are placed behind the cervix in the posterior cul-de-sac and the cervix and body of the uterus bent sharply forward upon each other and pressed as tightly together as possible. If these means check the hemorrhage the compression should be continued until the uterus is felt to contract firmly and remain so. The pressure may then be gradually relaxed, noting the effect of doing so. If the hemorrhage is not checked the hand should be introduced into the uterus and should be withdrawn after ascertaining the condition of the organ and removing all its contents. A large intra-uterine injection of hot water should then be used. The water should be as hot as can be borne, certainly not less than 105° F., should be used very freely and if possible, should be introduced by force of gravitation. However, any ordinary rubber syringe will answer the purpose and will produce no ill effect if properly used. The use of hot water is grateful to the patient, stimulates rather than depresses and is effectual in almost all cases. If, however, it fail to produce a good effect, common vinegar or acetic acid may be tried. Acetic acid may be added to hot water in the proportion of about one ounce to the quart and used in the same way as hot water. This remedy frequently causes immediate contraction of the uterus where other means have failed. Other remedies which are also useful when used in the same way are tincture of iodine, whiskey, etc. Any of these remedies may be tried as convenience and necessity may determine. The use of vinegar possesses the advantage of being readily obtained under almost all circumstances, of being ready for immediate use, being very effectual and not producing any ill after-effects. In order to use vinegar, saturate any clean material, sponge, a handkerchief, cotton, etc., with it, enclose this within the hand and carry the hand well up into the uterus. Then upon closing the hand the vinegar spreads over the sides of the uterus and the effect is "frequently very prompt and satisfactory." The introduction of pieces of ice into the uterus sometimes has an excellent effect. The objection to its use is that it is not comfortable, that contraction is not permanent unless its use is continued for some time and that it tends to still further depress the patient. Compression of the abdominal aorta may be tried also but should not be wholly relied upon even for a short time. The objection to its use is, that it is difficult to continue sufficiently long to be of much service without assistance and that the uterine blood supply is not thus wholly cut off. It is, however, undoubtedly useful in preventing rapid exhaustion of the patient and anemia of the brain and should be resorted to, if necessary, in connection with other treatment. In most instances, compression of the aorta can be made most effectually through the abdominal walls and in this way it need not interfere with other treatment. If the bleeding still continue tampons should then be used.

If the hemorrhage is very profuse at the outset and danger to the patient is imminent, as is usually the case when atony of the uterus exists, the uterine and vaginal cavities should be firmly tamponed at once. Under these circumstances there is no time to make a very careful examination or to observe the effect of other remedies. Nothing but immediate mechanical arrest of the flow of blood can save the patient's life. The hand should be carried rapidly into the uterus to ascertain the existence of any morbid condition of that organ and to remove any pieces of placenta, clots or *débris* that may be present. The cavity should then be cleansed with a hot-water douche, the parts exposed, and the cervix drawn well down to the vulva by means of a blunt volsellum; then with one hand holding the fundus of the uterus, if it can be distinguished, the whole cavity should be securely packed, leaving the end or ends of the material used protruding to facilitate removal. The vagina should be packed in the same manner, keeping the material well up against the uterus. This adds very much to the security and efficacy of the uterine tampon. The best material for packing the uterus is iodoform or other variety of antiseptic gauze. However, in case of an emergency, any clean material, handkerchiefs, strips of cotton, etc., may be used. The tampon should be left twenty-four hours, if it check the hemorrhage or until it is expelled or uterine contraction is established for some time. After its removal the uterine cavity should be thoroughly washed out, especially if any material not known to be aseptic has been used. In the event of not having the necessary instruments or of not being able to use them from any cause, it is quite possible to tampon the uterus securely by making pressure upon the abdomen with one hand and using the other to carry the material up into the cavity; with the two hands thus in apposition the uterus can be completely filled and the tampon pressed against the bleeding surfaces.

If the bleeding continue, either the tampon is improperly placed or there exists some morbid condition of the uterus, "benign or malignant, which has been compressed during gestation and torn during labor." In the event of failure the possible existence of this condition should not be forgotten, but even so the tampon is still the best method of treatment. In this event the first portion of the tampon introduced might be saturated with some form of styptic, such as iron solution or tincture iodine. Should the bleeding still continue, in all probability an atheromatous condition of the vessels exists. I have never seen a case of this kind but the treatment recommended is to make firm pressure upon the fundus of the uterus and to so evert the organ in the vagina that the bleeding vessels may be caught and secured or a portion of the uterus bound by an india-rubber band, so as to cut off the circulation, as recommended by Kocks. The whole may then be fastened by a gauze bandage and retained for six hours. Undoubtedly ligature of the vessels is the most desirable, if possible.

Another very rare accidental cause of post-partum hemorrhage, to which reference has not been made, is acute inversion of the uterus. This condition occurs but once in 200,000 labors; still, the possibility of its occurrence should not be forgotten. The greater the laxity of the uterus the more likelihood of its occurrence. It is sometimes the result of a forcible effort of the uterus to expel the placenta and under these circumstances its occurrence might be suspected. In any case, examination readily reveals the existing condition. The indication is, to remove any attached pieces of placenta or adherent *débris* and restore the organ to its normal position as quickly as possible.

There are but few drugs which, in my opinion, have any influence in controlling the hemorrhage; of these morphine is the most useful, and should be given subcutaneously in a one-quarter-grain dose at the earliest possible moment. I have never seen a case in which contraction did not ensue as soon as the action of the morphia was recognized. The difficulty is that if nothing else is done in the interval, the patient will not live until the morphia is absorbed. This should be followed by a full dose of ergotine or ergotinol, given subcutaneously also and, if possible, the solution of ergotine should be freshly prepared and made with pure water.

A very important feature in the treatment of serious cases of post-partum hemorrhage is the general care of the patient. The indication is, to prevent as well as overcome the effects of anemia of the brain and sudden exhaustion. The patient's head should be lowered and the foot of the bed raised. The limbs should be successively bandaged from the extremities upward and the bandage allowed to remain in position or a band placed about the limb before its removal. Compression of the abdominal aorta acts in the same way. If the condition of the patient is serious, alcoholic stimulants should be used freely and strychnia in moderately large doses should be given. Both should be used subcutaneously. The principal indication, however, is to fill the circulation and the heart with a large amount of saline solution at once. The best saline solution is common salt dissolved in hot water, in the proportion of one teaspoonful of salt to a quart of hot water. This should be used early, in large quantities, several quarts, if necessary and should be introduced as far up into the bowel as possible. This in most cases acts very speedily and effectually. If, however, the effect is not satisfactory, the saline solution should be used hypodermically. For use in this manner the solution should be of the strength of 0.6 per cent. The best situation for using the liquid in this way is in the loose cellular tissue of the back or chest, and the best means of using it is by the force of gravitation. In this way as much as 500 or even 1,000 grammes of liquid can be introduced into the circulation very quickly, without any local effect, and it relieves the anemia almost instantly. If the effect is not satisfactory the liquid may be introduced directly into the venous circulation. This is a much more complicated and formidable proceeding and is seldom if ever necessary but if used there are a few particulars which should always be observed. The temperature of the solution should be at least 100° F. and of the same strength as in the preceding instance; it should be absolutely free from saline particles; should be introduced in a slow, steady stream; the quantity of liquid should vary with the effect produced and the needle should be introduced into the vein while the liquid is flowing.

SUMMARY.

(1) A knowledge of the source of the hemorrhage is necessary to ensure intelligent action.

(2) All rents when easy of access should be repaired at once.

(3) If the body of the uterus is contracted and bleeding excessive and in all cases of hemorrhage following placenta previa, the whole cavity should be tamponed at once.

(4) If this is not successful, or if the hemorrhage is constant and not excessive, secure the bleeding vessels and, if possible, repair the injury.

(5) If atony exist and hemorrhage not excessive, use external and bimanual compression of the uterus, followed, if necessary, by hot water, vinegar or acetic acid.

(6) If not successful or if atony exist with excessive hemorrhage from the outset, tampon at once after using hot water.

(7) Give morphia hypodermically to check the hemorrhage and stimulants, strychnia and auto-infusion to overcome the effects of the hemorrhage.

(8) To prevent anemia use saline solution, preferably per rectum or hypodermically. May use saline solution by infusion also, if necessary.

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THE VALUE OF UROTROPIN IN THE TREATMENT OF CERTAIN FORMS OF GENITO-URINARY DISEASE.

BY J. M. THOMPSON, A.B., M.D., BOSTON.

WERE it essential to the purpose of this paper to take up the matter of indiscriminate sampling that has obtained in this country for some time past in respect of remedial agents of every conceivable kind and description, it is quite safe to assume that the subject would not be altogether ill chosen or untimely. And, yet, irrelevant though it would be in this connection, one cannot forbear hinting at the practical effect this deplorable custom has wrought not only in the past, but especially at the effect it is likely to have in the future; for it is very apparent that the practice has made many practitioners skeptical of, or doggedly opposed to, all new remedies — at least till weighed in the balance, so to say, and found not wanting. On the other hand, while judicious skepticism in regard to new remedies is not to be strenuously opposed, still, in the light of past experience, it is evident that one cannot well afford to ignore all "new comers," either on principle, or as a matter of routine.

When Lister laid the foundation stone of modern surgery about the beginning of the last quarter century, the classification of disease no longer remained in doubt; materia medica was placed on a rational basis; encouragement was given to original investigation and research, while empirical medicine was put to flight to clear the way for the dawn of the golden era of therapy.

The therapeutic advances of the last decade have been unmistakably marked and of material importance; and with pathology, as well as bacteriology, to determine and guide her course, the therapy of the future should be no less secure than sufficient, while there need be no fear that the pharmacopeia will remain the *vade mecum* of the physician, and the dispensatory continue to serve as a book of reference.

That the world in general and the medical profession in particular owe Germany a debt of gratitude — inestimable and irremunerable — one must needs simply recall some of the recent additions to materia medica, such as sulphonal, trional, dermatol, salol, salophen, ichthyol, and the coal-tar derivatives — all indispensable and forming a nearly complete armamentarium in themselves.

Without detracting in the least from the importance of the drugs above mentioned, it is not extravagant to say that urotropin, which forms the subject of this paper, is second to none of them in point of therapeutic value. But in view of its present limited field of action, it is to be feared that it will not become widely known for some considerable time.

During the comparatively short period that urotropin has been employed in this country, several interesting and valuable contributions have been made to medical literature relative to this new remedy, noticeably by writers whose investigations have been in the direction of renal and vesical disease.

The action of this drug in some forms of genito-urinary disease, it would appear, is but little known as yet, and since it has been the writer's lot to have observed its action in certain lesions peculiar to the urinary, but more especially to the sexual, organs, it is hoped that what this report lacks in point of interest it may lend in point of encouragement to those who, in similar cases, would try the virtues of a remedy reliable and wondrous enough in its therapeutic effects to make it a veritable specific.

In truth, so much has been written and published from time to time in the medical press relative to the history of urotropin in its various phases, that even the chemistry or physiology of the drug in this connection would prove redundant and suggestive of plagiarism. In recognition, however, of the services of Prof. Arthur Nicolaier, M.D., of Göttingen, the discoverer of urotropin, it is only right and just that his name should be recalled.

Inasmuch as it does not act in the bladder by killing micro-organisms, but rather prevents their growth or bacterial development, urotropin is not a true germicide, but a *sterilizer* and *antiseptic;* it renders a foul-smelling, alkaline urine sweet and acid, and is therefore an *acidifier.* In the light of these facts, it is natural to infer that formaldehyde is separated from it to a certain degree after it passes into the bladder.

Every physician knows how common it is to find the bladder to a greater or less extent involved whenever there is a pathological process at work in any part of the male sexual apparatus; also how often vesical derangements follow hypertrophied prostate and chronic seminal vesiculitis in cases of sexual impairment. In the face of these facts, then, after recalling how urgently patients thus afflicted seek one's advice for relief, surely it is consoling to know that at last a remedy is at our disposal that will satisfy all indications. That urotropin in such conditions is the one remedy *par excellence*, all who have employed it are ready to testify cheerfully and emphatically.

There is no doubt that there are some physicians who, when they find it necessary to prescribe a urinary sterilizer or antiseptic, true to the old adage, prefer to "let well enough alone"; while others, accustomed to deal with a new drug as a prominent American writer would have us deal with a new book, — not to recognize it till it be at least one year old, — specify salol, oil of wintergreen, salicylic acid, benzoate of sodium. To such as put faith in these as sterilizers, let me remind them that, after using salol for eight years, invariably with satisfaction, I felt compelled to consider a substitute, for the reason that one patient who had been taking five-grain doses three times a day for gleet from urethral granulations, in conjunction with steel sounds, reported carbolic-acid poisoning. Nothing further was done than to withdraw the salol, and my trouble ceased; but only for a short time, for another patient, who had been using the drug while having sounds passed, took occasion to be examined for life insurance, and, although strong and robust, he was rejected on the ground of albuminuria. After reporting the fact, the salol was stopped and the albumin disappeared in forty-eight hours. Urotropin was obtainable at the time, and since it was purported to possess both sterilizing and antiseptic properties, there was no delay nor hesitancy in accepting its claims for trial.

From the number of patients classified under the head of genito-urinary disease, satisfactory observations on the action and effect of urotropin have been prepared in 67, principally chronic. The dose was generally 7½ grains (compressed tablet form), followed by a full tumbler of water, morning and evening; at times, in the more severe cases, and especially following an acute exacerbation, a third dose of 7½ grains was ordered at noonday or at bedtime. With but few exceptions the physiological effect was apparent in from twenty-four to forty-eight hours, when, upon examination, the urine was found to be sweet smelling and transparent to a varying degree. Patients reported neither difficulty in, nor antipathy to, taking the drug as ordered, while on the digestive and renal apparatus, heart, nervous system and other parts of the animal economy, the effect was negative.

Thus far in the writer's personal experience, urotropin has had the most noticeable and salutary effect in chronic seminal vesiculitis. As a rule, when first seen, these patients call one's attention to the urine, which is nearly always abnormal in color, high in specific gravity, and more or less turbid. A deranged nervous system is not uncommon, while the neurotic element frequently betrays itself. Such patients, too, are likely to suffer from either periodic or persistent phosphaturia, which urotropin dissipates as if by magic. The turbidity so common in these cases, whether due to the pathological deposit which escapes backward from the vesicles, or to involvement of the prostate (when we have what is known as "prostatorrhea"), to a catarrhal condition of the deep urethra, or to the presence of bacteria, that turbidity disappears after the administration of urotropin.

It is not uncommon to find among those who have suffered from the pangs and discomforts which only the gonococcus causes that after all symptoms have ceased for a time the discharge returns copious and free, yet unaccompanied by the other symptoms characteristic of the first stage. Naturally, such patients are likely to be extremely debilitated and nervous; their urine is either neutral or alkaline. Upon questioning them, one will discover that the treatment which they have followed included the daily use of an antacid, like bicarbonate of sodium, which, for the first few days, contributes to the patient's relief, but when continued beyond the acute stage, or rather beyond the time when such treatment is indicated, by prolonging an abnormal (alkaline) reaction of the urine, keeps such normal constituents as phosphates, carbonates, etc., in a state of precipitation, a condition that must in time act as a mechanical irritant to the urethral mucous membrane, and provokes what may be termed a "phosphatic urethritis." If urotropin be ordered in 7½-grain doses morning and evening, a most happy effect will be noticed in about forty-eight hours, and, unlike the effect produced by a mineral acid, of a permanent character.

Recently I took occasion to try urotropin in two cases — the patients aged sixty-four and fifty-seven respectively — with enlarged prostate. Both had been obliged to use a catheter for years, except at times when the symptoms abated sufficiently to enable them to void their urine naturally. At such times as the catheter was not a necessity, the urine appeared normal, beyond the presence of small flocculi and comma-shaped shreds; whenever the catheter was likely to be employed the urine took on a murky, cystitic look, and soon became alkaline and foul smelling. The usual subjective symptoms returned, and life became a real burden. Both patients were under observation at this stage, when it was expected that the catheter might be required at any moment. In order to test the virtues of urotropin, each patient was put on 7½ grains of the drug three times a day. The effect was most gratifying, for the urine cleared up rapidly, and the subjective symptoms disappeared gradually. The urine still remains in a satisfactory condition, and both patients report that urotropin has enabled them to enjoy the longest period of happiness that has fallen to their lot for years.

Apart from that irritability of the vesical neck so common to diseases of the bladder and of the deep urethra, and to those organs in close connection with them, it is not rare to find patients affected with what may be termed "idiopathic irritability." In the absence of existing disease of the bladder or of the sexual apparatus, this condition comes on suddenly. While the direct cause is obscure, one is likely to find such patients of neurotic temperament, with a tendency to the secretion of a heavy, strongly acid urine, and also to periodic attacks of hepatic congestion. They drink very sparingly of water and are wont to overlook the normal action of the other organs so vital to immunity from functional derangement. The urine in such cases does not show any material change other than turbidity and some flocculi. Albumin, when present, is rarely more than a trace, and so slight that it may be overlooked if one does not make careful tests. Granular material and bacteria, however, obtain commonly. With appropriate treatment directed to the abnormal condition of the other organs, urotropin has not even a competitor in allaying this peculiar form of irritability.

After the acute symptoms of gonorrhea (either simple or specific) have subsided, and the hyperacidity due to the excessive amount of pus passes away, it is quite essential to success to preserve the normal slightly acid reaction of the urine, which now, during the second stage, tends to become neutral or alkaline, and furthermore, too, treatment at this stage is likely to determine the future trend and character of the disease. If urotropin be prescribed the urine will retain its acid reaction, bacterial growth will be checked, and nature will in consequence find no difficulty in healing the mucous membrane.

From the foregoing it will be seen that 7½ grains morning and evening proved a sufficient dose of urotropin in the writer's experience. When a third dose seemed to be called for, it was given, and after the desired effect was produced — when the urine remained clear and sweet for a few days — the dose was reduced gradually and finally withdrawn. When first employed, previous to reducing the amount of the daily dose, a small portion of freshly voided urine was transferred to a sterilized glass-stoppered bottle, and then placed in a dark room, where the temperature was kept as equable as possible. The different specimens —twelve in all — remained sterile, sweet and transparent for periods ranging from one to three weeks. One other specimen from a neurotic patient was preserved in the same way, except that the surrounding temperature was kept at about 98.6° F. (37° C.). He had been taking 7½ grains night and morning for phosphaturia. A two-ounce specimen was prepared on January 8th. This remained perfectly clear and apparently sterile and sweet till April 13th. Two days later, April 15th, it began to get murky and emitted a slightly decomposed odor.

From the foregoing experience and observations on the therapeutic action and effect of urotropin in diseases of the genito-urinary tract, the essential points may be summarized in brief as follows:

(1) A urinary sterilizer, antiseptic and acidifier — prompt and reliable in action, — moderate in dose, which, if adhered to, renders it both non-toxic and non-irritating to all parts of the animal economy.

(2) In virtue of its peculiar affinity for the urine, into which it passes unchanged, and where it parts with formaldehyde, it is apparent that its action in genito-urinary lesions is likely to be complete and certain.

(3) Its decisive and lasting effect, and especially its comparative singleness of action — which last is a most desirable property — should give it a place in the list of medicinal specifics.

(4) From the observations reported thus far, urotropin has appeared to be most frequently indicated in chronic disease, where it has produced exceptionally good results.

(5) In the writer's personal experience the diuretic action of the drug was not marked enough to render it deserving of claim to such a virtue.

DEATH OF DR. J. E. GRAHAM. — Dr. J. E. Graham, professor of medicine in the University of Toronto, has recently died.

Clinical Department.

ACUTE HEMORRHAGIC GANGRENOUS PANCREATITIS; OPERATION ON THE SECOND AND TWENTY-EIGHTH DAYS; DEATH.

BY CHARLES L. SCUDDER, M.D., BOSTON,
Assistant in Clinical and Operative Surgery, Harvard Medical School; Surgeon to Out-Patients, Massachusetts General Hospital.

E. P. O., a man, thirty-four years old, unmarried, a bartender by occupation, had been drinking heavily for three weeks. He was awakened early one morning by great pain in the epigastrium. The pain extended to the umbilicus, from which it radiated. He vomited at short intervals. These symptoms had continued for two days, when he was brought to the Massachusetts General Hospital needing immediate attention.

The man presented the usual peritoneal or abdominal facies. There was a drawn look about the corners of the mouth. He looked tired, sick and anxious. He was vomiting every few minutes a small quantity of dark-colored fluid containing some bile but without fecal odor. There had been no dejection for three days. The temperature was 99.8° F. The pulse was 130, weak but regular. The respiration was 20. The abdomen was uniformly distended, without perceptible muscular rigidity. There was dulness in both flanks. There was no tumor or increased resistance anywhere in the abdomen. The epigastric region disclosed nothing unusual. There were no external signs of hernia. There was no leucocytosis.

Because of increasingly persistent vomiting, abdominal pain and distention, the peritoneal facies, poor pulse and absence of dejections, the abdomen was opened by an incision at the outer border of the right rectus. Dark coffee-colored fluid escaped from the general abdominal cavity. The mesentery and great omentum showed many small (the size of a millet seed and split pea), yellow areas — disseminated fat necrosis. These areas of fat necrosis increased in number up toward the posterior wall of the stomach. Soft adhesions encapsulating the same dark-colored fluid were found about the pancreas and duodenum. The gall-bladder was apparently normal. The pancreas was slightly enlarged but no fluctuating areas could be detected in it. All adhesions were broken up and the abdominal cavity was flushed with normal salt solution until the return water came clear. Gauze wicks were placed deep to the pancreas and the abdominal wound partially closed.

At the end of five days all the acute symptoms had disappeared. Twelve days after the operation there was a sudden rise of temperature which was associated with nausea and vomiting. There was a leucocytosis of 26,000. Rectal feeding was used exclusively. During the following two weeks occasional vomiting persisted (once or twice daily). The man was evidently septic. The temperature rose a little in the evening a few times. A slight increase of resistance in the epigastric region was noticeable. Because of a return of vomiting, discomfort about the epigastrium, slight rise of temperature and leucocytosis, the abdomen was opened for the second time — about four weeks after the first operation. A deep abscess cavity was found at the epigastric level extending down to and about the pancreas. The cavity was thoroughly evacuated and cleansed. A dry sponge introduced upon long forceps and twisted about removed a black, shreddy, sloughy, soft gangrenous mass which was the greater part of the pancreas. There was considerable oozing of blood, which was checked by gauze packing. The man remained in poor condition following the operation, and two days later died. No autopsy was obtained. At no time during his illness after arrival at the hospital was there sugar in the urine.

The bacteriological examination of the fluid evacuated from the abdominal cavity at the first operation showed it to be sterile.

The bacteriological examination of the purulent material evacuated at the second operation showed the presence of the staphylococcus pyogenes aureus. These examinations were made at the Pathological Laboratory of the Massachusetts General Hospital, Dr. J. H. Wright, Director.

The initial symptoms of most acute abdominal troubles are very much alike, and in the absence of a history which might point to the seat of the lesion, no localizing diagnosis can be made. In this case the initial symptoms of pain, vomiting and collapse suggested of course an intra-abdominal lesion. To this particular group of symptoms Gübler has given the term "peritonism." These symptoms suggested more particularly some form of intestinal obstruction. The collapse in this case was less acute and less early than is usually seen in intestinal obstruction.

The pain in this case was not a colicky pain, as in intestinal obstruction; it was a more continuous oppression referred to the epigastrium.

The vomiting was continuous and began early, as in intestinal obstruction, but, unlike intestinal obstruction, it was not copious in amount. Constipation was present.

No diagnostic sign of acute hemorrhagic pancreatitis appeared previous to the first operation. The conditions found at the second operation were to be expected in the natural course of the disease.

A CASE WHICH BAFFLED DIAGNOSIS.

BY BENJ. R. SYMONDS, M.D., SALEM, MASS.

G. K., a currier by occupation, forty years of age and married, had enjoyed the best of health until two and one-half years ago, when he had an attack of pneumonia. Resolution was greatly retarded, but he eventually recovered. Since the attack of pneumonia there have been times when he seemed to suffer from temporary attacks of insanity, and he often made the remark to his wife that "some time he would be crazy." Frequently he would say that there was a "great pressure at the back of his neck," and would localize it by putting the hand directly on the occipital bone. There have been hallucinations and delusions, and his wife has spoken to friends saying that "sometimes she felt that it was not safe to live with him." In spite of these symptoms he kept faithfully at the bench, and as he worked at piece-work he favored himself if he felt so inclined.

On the morning of November 10, 1891, he said he thought he had taken cold the night before and felt rather poorly; he kept at work, however, and ate his meals regularly and apparently with relish. Next day he seemed about the same. On the following day, November 12th, he said that the pressure at the back of the neck had changed and gone to the top of the head. On the morning of November 13th he said he thought he "would stay at home that day to see if he would not feel better"; at 7 A. M. he was taken with vomiting, which persisted for three hours; nothing unusual was noted in the character of the vomitus. At times during the forenoon he was delirious, passed his urine naturally, and at noon had a natural dejection, getting in and out of bed unaided. About 12.30 P. M., his wife, having gone to an adjoining room, on returning found him in a sort of spasm; his head was thrown back, eyes rolled up, forearms and hands flexed; there was no twitching of any of the muscles of the body. She first thought he was dead, but discovered he was breathing, and then for the first time during this period sent for a physician.

I first saw him at 4.15 P. M. and found him lying in bed, in a sort of comatose state, but thought I got some recognition once or twice when directly asking him a question. There was a tendency for the arms, forearms and hands to flex; the legs were in a natural position, and he could move them in any direction; there was no paralysis of the face; pupils widely dilated and both eyes rolled upward and very strongly to the right; he was pale, and felt cold to the touch; the tongue was normal in appearance; occasionally some frothing at the mouth; at times the head was drawn back, and especially when a spasmodic contraction of the muscles took place; he was able to swallow; pulse 74, and in all respects normal. From his wife I elicited the foregoing history.

Other doctors having been sent for at the same time she sent for me, and Dr. L. G. Kemble arriving shortly afterwards, I invited him to see the patient with me. Our diagnosis was of some cerebral lesion, but just what or where we were unable to say. I ordered cold applications to the top of head, counter-irritation at the back of the neck, and gave 15 grains potass. bromidi., morph. sulph. $\frac{1}{8}$ grain, and atropiæ sulph. $\frac{1}{120}$ grain, to be frequently repeated.

Saw him again at 6.15 P. M. His condition about the same. Drew off about one pint of urine, which on examination proved to be normal. Gave him at this visit morph. sulph. $\frac{1}{4}$ grain hypodermically, which produced no amelioration of his symptoms.

At 8.15 P. M. had a consultation with Dr. D. Choate. At this visit there was a difference in his appearance, the spasmodic seizures being more frequent and violent and lasting longer, the breathing more noisy, pulse 84, the temperature 103° in the axilla. He could not be aroused. Pupils were widely dilated, not responding to light, eyes still turned to the right and up, and beginning to show signs of intense congestion of the conjunctival membrane. After carefully going through the whole case from the beginning we decided that the patient would probably die in a few hours, and that no treatment would save him, but advised bleeding him. His wife consented, and I opened a vein in the arm, from which I drew off twenty ounces of blood. This was not followed by any improvement, and he lived until 12.30 A. M., being quiet about one-half hour before death.

Autopsy at 9 A. M., November 15th, revealed nothing but a congestion of the pia mater, the vessels in the meshes of that membrane being very much engorged with blood; nothing else of an abnormal or pathological character was found; the thorax and abdomen were not opened.

Medical Progress.

RECENT PROGRESS IN THERAPEUTICS.

BY ELLIOTT P. JOSLIN, M.D., BOSTON.

FINSEN'S PHOTOTHERAPY.

THE treatment of skin diseases by concentrated rays of light is one of the most novel advances in therapeutics in the last few years. Finsen[1] began this method of treatment in cases of small-pox, but more recently has applied it to lupus vulgaris and similar affections. Small-pox patients have been surrounded with red objects and wrapped in red coverings for centuries, but this unique mode of treatment has been looked upon as a medieval superstition. While Finsen was engaged in studying the effect of light upon the skin, some old reports came to his attention in which favorable results were reported when patients with variola were treated in darkened rooms. Experience coincides with these old observations, for the pock marks are thickest on those parts of the body most exposed to the light. In calling attention to this old therapeutic measure, Finsen suggested the exclusion of the chemical rays of the light by means of red curtains or glass instead of leaving the patients in total darkness. Various observers followed his advice and published accounts of cases which completely escaped disfigurement by this means. The theory of the treatment is as follows: It is a well-known fact that sunlight can produce an irritation of the skin varying in intensity from a slight erythema to the formation of vesicles and desquamation. This was formerly believed to be due to the heat rays, and the erythema consequently took the name of erythema caloricum. But recent investigations have shown that the inflammation is not due to the ultra-red, red and yellow (or heat) rays of the light, but to the blue, violet and ultra-violet (or chemical) rays. Erythema solare is most frequently observed in the spring and in fair persons, that is, when the pigment of the skin is impoverished. The pigment of the skin is, in fact, a defence against the inflammatory influence of the chemical rays, and this doubtless is the reason why the skin of different races becomes darker the nearer we approach the equator. It is not surprising that in disease the skin requires still more protection from the chemical rays. This can be most conveniently brought about by filtering the light through red glass or red curtains.

Seven men report 70 cases of small-pox in which this method was followed, and it failed in but one case. When the patients come under treatment early enough, that is, before the fourth or fifth day of the disease, suppuration of the vesicles, even in unvaccinated persons and in most cases of confluent small-pox, will be avoided — one exception out of 70; as a rule the secondary fever does not appear, but even when it does the temperature is lower and the fever of shorter duration. As a result of the absence of suppuration, the disease becomes of shorter duration and less dangerous; further, the patient escapes pitting. This treatment is only a skin treatment; upon the infection itself it has no influence. If the patient comes under the treatment after the fifth day of the disease, it is uncertain whether the suppuration can be avoided.

The following are the main points to be observed in carrying out the treatment:

(1) The exclusion of the chemical rays must be absolute; even a brief exposure to daylight may produce suppuration and its sequelæ. The skin must be treated therefore as one would a photographic plate. If red window glass is employed, it is necessary for it to be of a deep red color, and if curtains are used they must be very thick or in several layers. When the patient takes his meals, or during the physician's rounds, artificial light — for instance, faint candle light — may be used without any danger. As even a brief exposure to daylight can produce suppuration, in order that the treatment may be carried out correctly it may be necessary to nail the curtains to prevent meddlesome interference by attendants.

(2) This method does not prevent, but allows the employment of any other treatment which may be considered necessary.

(3) The treatment should be commenced as early as possible; the nearer the commencement of the suppuration the less the chance of success.

(4) The patient must remain in the red light until the vesicles have dried up.

So far Finsen had made use of his discovery from the negative standpoint, that is, by excluding the chemical rays he avoided further irritation of the already inflamed skin and the small-pox patient escaped "pitting";[2] now he has employed the discovery in a positive manner by making use of these same rays as curative agents. The plan consists in treating local, superficial skin diseases by the concentrated chemical rays of light, and is based on the following experimentally proved data:

(1) The bactericidal property of the chemical rays of light. This has been studied by many investigators and demonstrated to be especially due to the blue and violet rays. To use this property of light therapeutically, the greatest possible number of violet and ultra-violet rays must be procured. Another condition for the advantageous use of this bactericidal property of light is that the bacteria are quickly killed. But the strongest sunlight in summer has too slight a bactericidal property ever to be of any value therapeutically, and in order to obtain a more energetic effect Finsen concentrated the light by means of a special apparatus. This concentrated light — an electric light, by the way — kills the bacteria in a few seconds when they are spread in a stratum of agar about one-fifth of a millimetre thick.

(2) The second principle underlying the method is that chemical rays of light are capable of producing an inflammation of the skin. Of this enough has been said.

(3) Chemical rays of light penetrate the skin This was demonstrated by placing small sealed glass tubes containing muriate of silver under the skin of dogs and cats. Some of the animals were then placed in the dark, while others were exposed to direct sunlight. After an hour it was invariably found that the muriate of silver was blackened in those animals exposed to the sun, but not in those kept in the dark. Chemical rays of light penetrate the skin, but they penetrate the anemic skin more readily than the normal skin. Finsen showed this by placing a piece of sensitized paper on one side of a man's ear, and letting the blue and violet rays of his apparatus for

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[1] British Medical Journal, December 7, 1895.

[2] Philadelphia Medical Journal, 1899.

concentration of sunlight fall on the other side of the ear. After five minutes this paper was not affected; on the other hand, the paper was distinctly blackened in twenty seconds if all the blood were pressed out of the ear between two glass plates. Accordingly, the area of skin to be treated must be made anemic.

In the treatment of patients sunlight is used in summer when the sky is bright, otherwise the light of electric arc lamps of fifty to eighty ampères. Not only must the light be concentrated to be of bactericidal value, but it must be cooled to avoid burning the skin. This is attained by means of a lens which is composed of a plain glass and a curved one framed in a brass ring. Between the two glasses is a bright blue weak ammoniacal solution of copper sulphate. Thus one has a convex lens which will concentrate the light, and because of the blue liquid absorb the heat rays (ultra-red, red and yellow). The blue, violet, and ultra-violet rays, on the other hand, are but slightly impaired by passing through this lens. For further details relating to the apparatus the original articles must be consulted.

The skin is first rendered anemic, and an area of one and one-half centimetres in diameter is treated for an hour daily. The treated skin reddens and swells, a bulla may appear, but necrosis has never been observed. Different skin diseases known, or supposed, to be of microbic origin have been treated, but it is only of lupus vulgaris, lupus erythematosus and alopecia areata that there have been sufficient cases to estimate the value of the method.

About 350 cases of lupus vulgaris have so far come under observation. At present only the skin, hard palate, the front part of the septum nasi, tongue and mucous membranes of the cheek can be healed by this method. In none of the cases has the treatment been quite without effect, but in about five cases the improvement was very slow. How striking the results have been is shown in the original articles by photographs of the patients before and after the light has been used. It takes some time before any improvement is visible, but from the time it begins it continues without interruption until the last nodule of the luprous patch has disappeared. The result of treatment has been so constant in these cases that there is reason to doubt the diagnosis when the method is ineffective. The apparatus now is vastly more bactericidal than that of last year, so better results are to be anticipated.

The principal advantages of the method are, besides its reliabililty, its excellent cosmetic results, the infrequency of relapses and their slight extent and that the treatment is painless.

With lupus erythematosus the effect is not nearly so sure as it is in the cases of lupus vulgaris. A few cases have improved very slowly, but with a constant tendency to recurrence.

The trials made in alopecia areata look promising, but further experiments are necessary.

ANTITOXIN TREATMENT OF DIPHTHERIA.[3]

The results obtained from the use of antitoxin in diphtheria, as published in the February *Bulletin* of the Department of Health, city of Chicago, should be sufficiently convincing to demonstrate to any skeptic the efficacy of this form of treatment.

From October 5, 1895 (the date of the first administration of antitoxin by the department), to February 28, 1899, a period of nearly three and one-half years, a total of 6,312 reported cases of diphtheria were visited by the department inspectors. Of this number 4,311 were bacterially verified as true diphtheria, and 4,076 were treated with antitoxin — the remaining 235 either refusing antitoxin treatment or being treated by other physicians, the results not being known. The results show 3,795 recoveries out of the 4,076 cases treated by the department. There were 276 deaths, and five cases were still under treatment at the close of February, 1899.

The figures of recoveries, 3,795, and of deaths, 276, give a mortality rate of 6.77 per cent. in 4,071 cases of bacterially verified diphtheria treated with antitoxin.

The further analysis of the 4,071 cases of diphtheria is of interest. In 355 cases treated on the first day of the disease there was only one death, a mortality of only 0.28 per cent.; in 1,018 cases first treated on the second day of the disease there were 17 deaths, a mortality of 1.67 per cent.; in 1,509 cases first treated on the third day of the disease there were 57 deaths, a mortality of 3.77 per cent.; in 720 cases first treated on the fourth day of the disease there were 82 deaths, a mortality of 11.39 per cent.; and in 469 cases first treated later than the fourth day there were 119 deaths, a mortality of 25.37 per cent. These statistics show conclusively the advisability of giving the antitoxin as early as possible.

The *Bulletin* states that the death-rate of 6.77 per cent. from diphtheria during the past three years, since antitoxin has been used, shows a decline of 43 per cent. as compared with that for the previous three years, when other methods of treatment were in vogue.

IODIPIN.

Iodipin is a chemical compound of iodine with oil. Its taste and appearance is that of the fat used in its manufacture. It is extremely stable, and even after months there is no setting free of the iodine. It is absorbed as fluid fat by the body, and partly as such is deposited in the muscles, liver, bone marrow, and subcutaneous tissues; partly is split up. The chief part of the iodine leaves the body as potassium iodine.

The objects which led Klingmüller,[4] under Neisser's direction, to try the effect of iodipin subcutaneously were twofold; the need of a preparation of iodine which could be used in this way in mental diseases where the drug either cannot or will not be taken by the mouth, and secondly to avoid gastro-intestinal disturbances which are apt to arise by its long continued use.

Winternitz has shown that iodipin injected subcutaneously is absorbed as such and is stored up as an iodine fat. It is gradually appropriated by the organism, and the iodine gradually (in one case 53 days) leaves the body in the urine. From his experience with 400 – 500 injections Klingmüller draws the following conclusions:

(1) Iodipin given subcutaneously has a specific action on tertiary lues.

(2) The organism remains longer under the influence of the iodine than with other preparations yet employed.

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[3] American Journal of the Medical Sciences, 1899, p. 86.

[4] Berl. klin. Wochen., 1899, No. 25, p. 540.

(3) By the subcutaneous method none of the iodine is lost.

(4) The organism works over the iodipin administered slowly and uniformly.

(5) No signs of iodism occur.

(6) The dose can be absolutely graduated.

(7) The subcutaneous use of iodipin allows an iodine treatment of patients who for one reason or another cannot or will not take iodine.

(8) The body can be placed under the influence of iodine for weeks or months by means of an injection cure which demands but a few days.

The therapeutic use of iodipin in bronchial asthma and emphysema.— Frese[5] has tried this drug in six cases of bronchial asthma and seven of asthmatic complaints in chronic emphysema and bronchitis. It was given in a 10-per-cent. preparation, and of this two or three teaspoonfuls daily. A teaspoonful would be equivalent to about 0.5 grammes (7 grains) potassium iodide. One of the patients objected to it on account of its oily taste. The results obtained were in almost all cases favorable, in some surprisingly so. Frese reports eight cases and comes to the following conclusions: In iodipin we have a medicament which is active in the same way as potassium iodide; as it acts as iodine and not as the salt it affords confirmation of the idea that the active part of the potassium iodide is due wholly to the iodine and not in part to the potassium, as some have thought; it does not disagree with the stomach, while it at times increases intestinal peristalsis; signs of intoxication were at no time observed, coryza being transitorily present but once; the favorable effects last for several days after the discontinuance of the drug; it acts quickly, a reaction from iodine being obtained in the urine in twenty minutes.

Radestock[6] speaks highly of the effects of iodipin when given by the mouth. He used up to 40–50 grammes daily without harmful results. He also used it in the form of an ointment to be rubbed into the skin, and proved its absorption in ten minutes.

RED MEATS AND THE RESTRICTION OF LIQUIDS IN CHRONIC NEPHRITIS.

It is discouraging to look at the more recent books on renal diseases and find so little that is therapeutically new. Cushny says in his "Pharmacology and Therapeutics" that the period of constructive pharmacology has scarcely dawned; at present its chief function is destructive and critical, and it is due to this latter fact that the patient with Bright's disease in the next few years will have a much more endurable life.

Von Noorden[7] comments on the meat diet which is laid down for nephritic patients. It has grown to be a custom to allow such patients only the white meat of fish, birds and veal, while the white meat of pork is already looked at askance; dark meat, no matter its source, is struck out by many physicians. Many patients who literally follow this diet develop in time such a repugnance to white meat that they limit their meat diet to the smallest quantity. Their albuminous food sinks little by little in amount until their nutrition is lowered and their strength diminished. Give them the variety of dark meat and appetite and strength return. This is the practical side of the question. On the other hand, is there any common-sense in the exclusion of these dark meats? "I have not found in all the literature a single exact clinically experimental basis for this, but only hypothetical affirmations over the greater content of irritating products (especially nitrogenous extractives) for the kidneys in brown meat." As for these extractives, the physiological text-books put down creatinin as exceeding 0.3 and 0.4 per cent. in the white meat of poultry and rabbits, but it never reaches in beef 0.3 per cent. The essential difference between white and brown meat rests in the amount of coloring matter, whose chemical constitution is not yet accurately known.

Against these empty claims, copied from book to book, of the harmfulness of dark meats for the patient with Bright's disease (or, for that matter, gout), von Noorden records the following: A patient, with chronic parenchymatous nephritis, who took one-half pound poultry daily for five days, excreted the same amount of nitrogen and a trifle more albumin than he did in the next five days, in which instead of the poultry he took an equivalent amount of nitrogen in beef.

Von Noorden also has studied the effect of the amount of liquids in the food on such patients. His results have led him to believe that in many cases a restriction of the amount of fluids to 1,250 or 1,500 cubic centimetres (42 to 50 ounces) can be of extraordinary advantage. This treatment is peculiarly applicable to those cases with cardiac asthma and dilatation of the heart. There is relief from the asthmatic attacks, the establishment of restful sleep, and, proportionately to the small amount of fluid ingested a copious diuresis, and above all an undoubted diminution in the cardiac area. This proportionately favorable condition can last several months.

If the excretion of urea, uric acid and similar bodies should be hindered by such a procedure, that would be enough to condemn it. This, however, is not the case, and from his studies in this direction von Noorden concludes that patients with interstitial nephritis suffer no diminution in the elimination of the important metabolic products by the restriction of liquids to one and a quarter litres.

(*To be continued.*)

Reports of Societies.

NEW YORK STATE MEDICAL ASSOCIATION.

SIXTEENTH ANNUAL MEETING, HELD IN NEW YORK ACADEMY OF MEDICINE, OCTOBER 24, 25 AND 26, 1899.

FIRST DAY.

DR. CHARLES STEDMAN BULL, of New York, presented a paper entitled

OPERATIVE TREATMENT OF HIGH MYOPIA BY REMOVAL OF THE CRYSTALLINE LENS.

In introducing the subject he alluded to the startling prevalence of myopia among school children, and urged that greater attention be given to school hygiene, including a study of methods of lighting and ventilation, and the proper adjustment of the height of the desks to that of the pupil. Before deciding upon this operative treatment for high myopia, the age and occupation should be taken into consideration; the visual field should be tested, and, by the ophthalmoscope, the state of the blood-vessels of the retina should be determined. If there were present any degenerative changes in the retina or choroid in the region of the macula, the operation should not be done, for under such circumstances the operation would almost certainly lead to retinal intra-ocular hemorrhage and destruction of the eye. The indications for this operation were: (1) Insufficient visual acuity for the needs of the individual patient; and (2) rapidly increasing nearsightedness or an existing myopia of twelve diopters or over. The contraindications were: (1) Extensive degenerative changes in the retina or choroid in the region of the macula; (2) detachment of the retina; (3) opacities in the vitreous; (4) previous loss of one eye from whatever cause; (5) decided loss of transparency of the cornea; (6) any form of contagious conjunctivitis, especially trachoma; (7) advanced age; and (8) less than twelve diopters of myopia. The dangers were: (1) Intra-ocular hemorrhage from rupture of choroidal or retinal vessels; (2) detachment of the retina; (3) secondary glaucomatous symptoms; and (4) infection of the cornea or iris.

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[5] Münch. med. Wochen., No. 7, 1899, p. 214.

[6] Therap. Monats., 1899, p. 551.

[7] Verhand. d. Cong. f. inn. Med., 1899, p. 386.

PROGRESS OF THE SCIENCE AND ART OF OBSTETRICS.

Dr. Florince O. Donohue, of Syracuse, presented this communication. While he attributed a large part of the present low rate of mortality following childbirth to our knowledge of germs and to the modern use of antisepsis, he pointed out that no small share in this gain was probably dependent upon the earlier use of forceps in prolonged labor, the more frequent induction of premature labor in cases of contracted pelvis, the modern treatment of eclampsia and of post-partum hemorrhage, especially in the prophylaxis of the latter. Cæsarean section or a resort to the induction of premature labor seemed to him proper substitutes at the present time for craniotomy in cases of dystocia resulting from contracted pelvis.

Dr. William E. Swan, of Saratoga Springs, advocated an early resort to a bacteriological diagnosis in cases of puerperal fever, as a guide in the subsequent treatment.

Dr. W. E. Finder, of Troy, took issue with the preceding speaker on this point, asserting that the bacteriological examination would help but little in actual practice, and might be responsible for serious delay in instituting treatment.

Dr. Henry Risch, of Brooklyn, pointed out that puerperal infection from the surrounding air was possible. To avoid this possible danger he recommended that the physician should make his vaginal examination with one finger so as to allow of the labia remaining closed around the examining finger.

IMPRESSIONS OF THE WORK OF THE INTERNATIONAL GYNECOLOGICAL CONGRESS AT ANTWERP, 1899.

Dr. A. Palmer Dudley, of New York, made this report. He stated that in the discussion on the treatment of uterine fibroids, the opinion prevailed that the abdominal route was the only proper one for most cases. In the discussion on the comparative merits of the true Cæsarean section, the Porro operation, symphyseotomy and induction of premature labor, the consensus of opinion was that except in cases complicated by fibroids, Cæsarean section was the only operation suitable at the present day. An announcement in this report that could not fail to be of interest to all Americans was that it was generally conceded that the only really original contribution to the work of the Congress had been made by an American.

SOME PRACTICAL EXPERIENCE IN ASEPSIS AND ANTISEPSIS IN OBSTETRICS.

Dr. Douglas Ayres, of Fort Plain, in this paper laid stress on asepsis not being sufficient in obstetric practice — antisepsis was demanded. Not only should the parturient woman be carefully taught regarding methods of personal cleanliness, but the physician, at the time of the patient's confinement, should most carefully cleanse the external genitals, first with soap and water, and then with a solution of corrosive sublimate or of carbolic acid. Vaginal examinations should be avoided as far as possible, and when required they should be preceded by the preparation of the examiner's hands and arms, considered essential before a modern surgical operation. He did not favor the use of the douche in uncomplicated cases of labor. To ensure cleanliness it would be found convenient for the obstetrician to provide two flannel bags for his instruments, so that one of these cases would always be clean and in condition for use.

HYDRORRHEA GRAVIDARUM AND HYDROSALPINX.

Dr. Frederick S. Cowles, of Westbrook, Conn., in this communication advanced a theory regarding the etiology of some cases of hydrorrhea, which he had been led to adopt because of a case coming under his observation. The case was reported in detail. It suggested that, at least, in certain instances the hydrorrhea might be due to a discharge of fluid through a Fallopian tube, the seat of a hydrosalpinx. In the same way he sought to explain many cases in which it was supposed that there had been an escape of the amniotic fluid some time before the onset of labor.

A BRIEF SUMMARY OF THE INDICATIONS FOR OPERATION UPON THE STOMACH.

Dr. Max Einhorn, of New York, in this paper reviewed the various operations done on the stomach, and gave the indications for each. In cases of malignant disease he advocated prompt operation, but where this organ was the seat of a benign growth he was in favor of trying all other methods of treatment first.

Dr. De Lancey Rochester, of Buffalo, thought that even in cases of benign tumor it was not wise to wait very long before operating unless other methods were evidently benefiting the patient.

THE VALUE OF OPERATIVE TREATMENT OF SPINA BIFIDA.

Dr. W. B. Reid, of Oneida, reported, under this caption, an original method of operating that he had adopted successfully in a case of spina bifida, of the variety known as meningocele. The precaution had been taken of making daily aspirations of the fluid for three days prior to operation, in order to forestall, as far as possible, any untoward results from the sudden release of the pressure to which the brain and cord had been subjected. The sac had been dissected out and excised close to the pedicle, leaving the latter as a plug, which nicely filled in the cleft. The patient had been kept in a plaster-of-Paris jacket for fourteen weeks, but had entirely recovered, and at the time of writing, two years after the operation, was perfectly well.

Dr. H. O. Marcy, of Boston, gave a brief description of a case of very large spina bifida upon which he had successfully operated, the method adopted being to close the opening just as one would do in an ordinary hernia operation.

SOME CUTANEOUS MANIFESTATIONS OF SYPHILIS AND OTHER AFFECTIONS OF THE SKIN.

Dr. John A. Fordyce, of New York, then gave an interesting lantern-slide exhibition, with a running commentary of a large number of cutaneous manifestations.

DOES THE PRESENT METHOD OF SECURING EXPERT TESTIMONY SUBSERVE THE ENDS OF JUSTICE?

Hon. Willard Bartlett, Justice of the Supreme Court, opened this discussion by giving a brief description of the usual legal procedure, particularly in negligence cases. He said that as scientific experts were frequently called upon to make physical examinations or chemical analyses in order to qualify them to give opinion evidence at the trial, they naturally expected proper compensation for their work, and hence had arisen the practice of the experts being paid by the litigants who summoned them. They had, in consequence been severely criticised, again and again, as partisans who, consciously or unconsciously, mould their opinions so as to promote the cause of the suitor in whose behalf they were called. The partisan character of such testimony became unmistakable when a medical man participated, not only as a witness giving opinion evidence, but also as an advisor to the counsel engaged in the trial. Upon this point the speaker expressed his opinion very strongly. He said that it seemed to him that the wise physician would take care never to act in both these capacities. He declared that this double rôle, so often assumed by medical men, had much to do with the existing opinion regarding the comparative worthlessness of medical expert evidence. Regarding suggested reforms, Judge Bartlett said that it was impossible, because unconstitutional, to introduce any new plan which would prevent litigants from calling any expert witnesses of their own selection, nor would any plan be likely to succeed which would protect expert witnesses from cross-examination. The remedy suggested by him was such an amendment of the medical code of ethics as would sufficiently define and regulate the conduct of the medical expert witness.

Hon. Joseph L. Daly discussed the present system and declared, that in spite of much harsh criticism arising from the medical expert accepting a fee from the party calling him, he could not see any more harm in it than for legal counsel, who were nothing but legal experts, to be paid in a similar manner — a state of affairs which did not seem to arouse any adverse criticism.

Charlton T. Lewis, Esq., was the next speaker. He did not hesitate to show the defects of the present system of jurisprudence, and to assert that just here was to be found the chief cause of trouble. In his opinion, the ideal plan would be to have expert evidence heard only by an independent scientific court.

William A. Purrington, Esq., after a hasty and humorous sketch of

THE MEDICAL EXPERT OF THE PAST, THE PRESENT, AND THE FUTURE,

said regarding the supposed necessity for cross-examination, that although judges were really experts, their opinions had binding force for the time being.

SECOND DAY.

Dr. George O. Goler, of Rochester, read a paper entitled

THE NECESSITY FOR STATE AID IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

He directed attention to the annual death-rate from consumption in New York State of 13,000, and added that assuming the average life of the consumptive to be four years, there would always be in this state about 50,000 cases of tuberculosis. The State had spent large sums of money on its epileptic and insane, but it should go further and establish sanatoria for consumptives. If incipient cases were treated in these institutions it would be possible to cure 70 per cent.

SANATORIUM TREATMENT AT HOME FOR PATIENTS SUFFERING FROM PULMONARY TUBERCULOSIS.

Dr. S. A. Knopf, of New York, in this paper, described the important features of sanatorium treatment, and suggested certain modifications by which the method could be applied to home treatment. He also indorsed the treatment of indigent consumptives in State sanatoria.

Dr. De Lancey Rochester, of Buffalo, spoke of the difficulty experienced in getting patients to use the flask or use the paper handkerchief for expectoration. While he favored the free use of milk by the pulmonary invalid, it was in his opinion better to order half a pint to one pint taken at regular intervals. It was not advisable to take milk sooner than three hours and a half after an ordinary meal. In practising hydrotherapy in private practice he had found that a good deal could be accomplished with the ordinary round tub. Where cool affusions were practised it had seemed to him better to substitute for the pitcher a fountain syringe with a large spray nozzle. The warm bath was as important as the cool one, and should be taken at least twice a week. Where the reaction of the skin was especially feeble, the warm-air bath might be substituted with advantage.

Dr. Wickes Washburn, after making a plea for the incorporation of the "farm colony" in the proposed system of State sanatoria, introduced the following resolution, which was adopted:

Resolved, That the New York State Medical Association approve of the State establishing sanatoria for the care of consumptives, and that it is the sense of this Association that sanatoria for the incipient cases should be conducted in connection with the farm colony.

(To be continued.)

Epileptic Colony for Illinois. — Dr. W. R. Spratling, Sonyea, N. Y., presented the claims of the epileptics of Illinois before the Conference of Charities and Correction, recently held at Bloomington, Ill. His suggestion was that the State secure large acreage and available soil and establish a colony and provide employment for the patients, as is already done in several other States.

Recent Literature.

The Medical Complications, Accidents and Sequelæ of Typhoid or Enteric Fever. By Hobart Amory Hare, M.D., B.Sc., etc. With a special chapter on the Mental Disturbances following Typhoid Fever, by F. X. Dercum, M.D. Philadelphia and New York: Lea Brothers & Co. 1899.

This octavo of two hundred and eighty-six pages deals with the aberrant forms of typhoid fever and the courses which they pursue. The author is a colleague of Dr. W. W. Keen, at the Jefferson Medical College. Dr. Keen's valuable and suggestive essay on the Surgical Complications and Sequelæ of Typhoid Fever is already familiar to many. Dr. Hare's book is in a measure complementary to Dr. Keen's, and the two in part necessarily cover the same ground.

Dr. Hare divides his subject into seven chapters: General Considerations; Varieties of Onset: The Aberrant Symptoms, States or Complications of the Well-Developed Stage of the Disease; The Complications of the Period of Convalescence; The Conditions which ape Typhoid Fever; Duration and Immunity to Second Attacks; The Mental Complications. The chapters on the Well-Developed Stage of the Disease, and the Period of Convalescence are the most important and the most interesting. The management of cases with perforation has undergone, and is undergoing, a revolution; the same may be said of both the diagnosis and management of cases with cholecystitis. Just what the relation of the surgeon should be to such cases is being rapidly more definitely determined. To Keen's list of cases of surgical operation after perforation Hare adds 20 cases collected by Platt (*Lancet*, February 25, 1890), and one by Taylor, of Richmond, Va. This case in a child recovered, as did one of Dr. Platt's own three cases. There seem to have been 104 cases reported, with 21 recoveries — about 20 per cent. of cures. Undoubtedly by the end of the present year the list of operations will have been largely increased, and it is quite possible that the percentage of recoveries will be diminished rather than increased.

Dr. Hare has chosen a legitimate and important field from which to glean for the making of a book, and has made a book of value and convenience to the practitioner.

Specielle Pathologie und Therapie. Herausgegeben von Hofrath Professor Dr. H. Nothnagel. Band XIX, II Hälfte, II Theil, III Heft. "Die Krankheiten der Prostata." By Dr. A. von Frisch, A. O., Professor of Surgery in Vienna. 1899.

Under the above title the author has given us a comprehensive and exhaustive treatise upon the diseases of the prostate.

With some exceptions it is characterized by the thoroughness and attention to detail that is traditional in German works, but it lacks perspective, and in the exceptional places referred to there is a lack of just the information that is most needed. An example of this is seen in that part of the chapter which deals with the operative treatment of prostatic hypertrophy. Here the author expresses his opinion of the value and place that should be held by the more radical measures of prostatectomy performed by various methods, without offering substantial data to support them, and to show how his conclusions are reached; furthermore, there is insufficient description of the methods of performing these operations. On the other hand, a relatively undue prominence is given to Bottini's operation, which in certain classes of cases the author prefers. This operation is not judicially or critically presented. This is shown, for example, in the writer's statement that this method can be applied to any form of prostatic hypertrophy, which in our judgment is not, and has been shown not to be, true.

The different chapters are presented in a well-considered series and in logical sequence, beginning with the anatomy and physiology and continued with the description of the methods of examination of the prostate in the living subject, the congenital malformation of the gland, acute and chronic inflammation, neuroses, tuberculosis, hypertrophy, atrophy, concretions and stones, tumors, and finally parasites of the prostate. The chapters on anatomy and physiology and pathological anatomy, and also that on congenital malformations of the prostate are especially good.

Diseases of the Eye. A Hand-Book of Ophthalmic Practice for Students and Practitioners. By G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College; Professor of Diseases of the Eye in the Philadelphia Polyclinic; Ophthalmic Surgeon to the Philadelphia Hospital, etc. With 225 illustrations and two chromolithographic plates. Third edition, thoroughly revised. Pp. 696. Philadelphia: W. B. Saunders. 1899.

This text-book, which has been through two previous editions since its publication in 1892, has been before reviewed in these columns. The present edition has been revised and the work brought up to date, special paragraphs have been added on pneumococcus conjunctivitis, diplobacillus conjunctivitis, and other subjects in which recent progress has been made. The book will no doubt continue to be a favorite one with students.

The Medical News Visiting List for 1900. Weekly (dated, for 30 patients). Three styles containing 32 pages of data and 160 pages of blanks. The 60-patient Perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, with pocket, pencil and rubber. Philadelphia and New York: Lea Brothers & Co.

This excellent visiting list presents the usual attractive appearance, with a selection and arrangement of contents which experience has shown to be convenient and satisfactory. The Table of Doses and The Therapeutic Reminders have been revised in accordance with the changes and advances of the past year.

Burdett's Hospitals and Charities, 1899. Being the Year Book of Philanthropy and the Hospital Annual. By Sir Henry Burdett, K. C. B. London: The Scientific Press. New York: Charles C. Scribner & Sons.

This book, which it is intended should be an annual, has this year, we are informed, been unexpectedly and unavoidably delayed. It is Sir Henry Burdett's intention that it should appear regularly in each year in March. It has much information in a comparatively small space, and it is the aim of its author to ensure its accuracy and keep it well up to date.

THE BOSTON

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PROFESSOR OSLER'S ADDRESS AT McGILL UNIVERSITY.

PROF. WILLIAM OSLER this year delivered the address at the opening of the session of the Medical Faculty of McGill University, an institution with which he has close associations. The address is largely reminiscent, to a certain extent personal, and as coming from a man who has gained an eminent place in medicine should be read with interest by those whose futures are still unformed, as well as by those whose experience has differed from Osler's in establishing for themselves a name and a place. Evidently no dogmatic rule is to be laid down for the guidance of young men in their development; the personal element and circumstances are always to be reckoned with. At the same time it is often profitable and always interesting to trace the career of a successful man. This Osler does for us in the address published in the *Montreal Medical Journal* for November, 1899, entitled "After Twenty-five Years," to which we have alluded. His own creed he sums up in the following paragraph: "As to your method of work, I have a single bit of advice, which I give with the earnest conviction of its paramount influence in any success which may have attended my efforts in life — *Take no thought for the morrow.* Live neither in the past nor in the future, but let each day's work absorb your entire energies, and satisfy your widest ambition. That was a singular but very wise answer which Cromwell gave to Bellevire — 'No one rises so high as he who knows not whither he is going,' and there is much truth in it. The student who is worrying about his future, anxious over the examinations, doubting his fitness for the profession, is certain not to do so well as the man who cares for nothing but the matter in hand, and who knows not whither he is going!" It is hardly to be supposed that such a policy would meet every man's needs, or most completely develop his possibilities. The exigencies of life would surely not permit such unrestrained drifting, except to those who, like Osler, are sure from the beginning that the apparent uncertainties of the present are destined to lead to some definite goal. To the ordinary student, whose mediocrity must be considered, the advice, "Take no thought for the morrow," is somewhat risky, and to our mind not likely to lead him into paths of even ordinary success. Unfortunately, most of us belong to the mediocrity.

Again, at the conclusion of his remarks, Osler quotes a passage which he had printed on the title-page of a note-book, for distribution among his students during the early years of his teaching. The passage reads: "The knowledge which a man can use is the only real knowledge, the only knowledge which has life and growth in it and converts itself into practical power. The rest hangs like dust about the brain or dries like raindrops off the stones." The query suggests itself: What knowledge is there which a man may not use? It certainly is not desirable, and we think it is not Dr. Osler's intention, to decry work which has no apparent and immediate use, for upon such work so-called practical medicine is certainly built. Knowledge which is not capable of use is surely a contradiction in terms, even though such knowledge may long fail of direct practical application.

While clearly recognizing the changes which have taken place in medical education and teaching, in the last few years, we are glad to see that Osler still holds out for the didactic lecture, which from various sources has of late been so vigorously attacked. There will, he says, always be men who can present a subject in a more lucid and attractive manner than it can be given in a book. The place of the didactic lecture, as we have previously had occasion to say, is, in our opinion, one of growing rather than decreasing importance, only modified to meet the more stringent demands of the future. In this connection Dr. Osler alludes to papers by Bowditch and Mall, to which reference was made in these columns shortly after their publication, relative to the future problems of medical education. Speaking of these papers he makes the following remark, not too commonly heard from the lips of men who have reached the middle period of life: "I would commend them particularly to the younger men, in whose hands alone such radical changes can be carried out. A man who has been teaching for twenty-five years is rarely in a position to appreciate the necessity of a change, particularly if it touches his own special branch."

Altogether this address is one of the most entertaining it has been our pleasure to see for a long time, full, as it is, of delightful personalities combined with the results of a ripe experience.

MUNICIPAL GYMNASIUMS.

THE general health of a community must ultimately depend upon the health of its poorer classes. It is therefore advisable, in the interests of public sanitation, to take all legitimate measures to ensure a high standard of physical strength, and, secondarily, of moral stamina throughout the thickly settled portions of our large cities. Boston, under the administration of its present mayor, has certainly set an example of progress in this regard by the development of an extensive park system, with which is connected elaborate facilities for physical exercise and particularly for bathing. No one questions the desirability of such innovations in themselves; they must, on the whole, conduce to a higher degree of general health and to a more normal social life. Objections, as we know, have been urged on the ground of expense, a matter, however, which does not concern us in the present discussion.

It may not be generally known that this summer for the first time the Playground Committee of the Massachusetts Emergency and Hygienic Association, aided by city funds, established four out-of-door gymnasiums in school yards of crowded districts. These gymnasiums were intended for boys, and, secondarily, girls, of from fourteen to eighteen years of age, and were presided over by men experienced in physical training. They were attended by large numbers and were regarded as a success by those especially interested in the undertaking.

Following on this beginning we learn that a new and expensive gymnasium has recently been opened in South Boston, to be supported at the city's expense. In his remarks at the dedication of the building Mayor Quincy said that it was the opening of the first municipal gymnasium in a building, and, so far as could be ascertained, it was the first municipal gymnasium of any pretensions in any American city. This departure from the ordinarily accepted method of expenditure of city funds is in our opinion one to be encouraged, always within reasonable limits, with a sufficient discretion, and provided other more vital matters are not starved in consequence. There can be little doubt that the effect upon the people of such an institution conveniently placed, to which they may have free access, will conduce to better health and better morals than many more direct means. It is young men who particularly need to be reached and influenced before they have actually entered upon a course of petty crime and moral degradation. We feel confident that physical exercise and muscular training, to which careless modes of life are antagonistic, will do more to keep boys and young men from the liquor shop than any amount of legislation. The moment a spirit of healthy rivalry is established in physical sport, requiring a certain degree of training, we may be sure that a more normal moral tone will prevail. This, at least, appeals to us as an argument in favor of the opening of such gymnasiums, even at considerable expense; it is a rational way of meeting certain difficult social conditions. As has been said, the plan is as yet largely in an experimental stage. However theroetically plausible the arguments in favor of such establishments may be, it is quite necessary to wait for the sanction of experience before making definite claims. In the meantime we hope the experiment will be thoroughly tried.

Mr. Robert A. Woods, of the South End House, whose opinion should have much weight in a matter of this sort, has recently pointed out that an indoor gymnasium on a smaller scale has been in successful operation in East Boston for two years. He is convinced of the decided beneficial effect upon both sexes which this gymnasium has exerted. The number of persons going to it is about 5,000, and it is estimated that not far from 2,000 individuals make use of the gymnasium every week. In the light of these facts it is impossible to deny that privileges are appreciated and that benefit must result to a portion of the community most in need of such normal physical recreation. Mr. Woods, writing to the *Boston Evening Transcript*, says: "It is granted that the City Government at present can ill afford to undertake new maintenance expenses; but every large business enterprise in these days is compelled to make considerable investments in order to make sure of ultimate economies. In a great city like Boston this method will be more and more essential. The City Hospital costs upwards of $1.000 per day; the houses of correction cost $600 a day. Consider also the running expenses of the police department; the police and criminal courts; the Board of Health; the Overseers of the Poor; the departments for paupers and neglected children. Common sense demands that in some way a determined attack should be made upon the causes of this enormous expense. A half-dozen gymnasiums, based upon the East Boston model, set down in the congested districts of the city, would within a few years far more than pay their own expenses by cutting off, to some extent, the supply of disease and crime which has to be so dearly paid for by the city."

With this statement of the case we are in essential agreement. As the true function of the physician is to prevent disease. so the function of the city is to prevent crime, which sooner or later leads to disease and dependence. The gymnasium is one possible method.

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ANNUAL REPORT OF THE SURGEON-GENERAL OF THE NAVY.

In his annual report, just published, Admiral Van Reypen, Surgeon-General of the Navy, makes a strong recommendation for an increase in the medical corps of that service. He points out that while there has been a steady increase in the enlisted force during the past two years, and while the Marine Corps has been swelled by the addition of 3,000 men, there has been no suitable provision made for the corresponding increase in the medical corps, which is charged with the care of the health of these men. The surgeon-general therefore recommends that the corps be increased by five surgeons and 20 assistant surgeons, and that the volunteer surgeons who served in the war and are now in the service be transferred to the regular rolls and the age limitations be removed in their cases. There are now 18 of these men, and in some cases they are over thirty years of age. It is also earnestly urged that the naval assistant surgeons be placed on an equality with those of the army in pay and rank. At present the army can get all the medical service that it needs, while the navy has great difficulty in obtaining candidates for the necessary examination. There are now four vacancies in the rank of assistant surgeon and eight more will occur during the year, and the hope is expressed that the corps will not be allowed to die out from lack of recruits, which must follow unless the inducements to young medical men are at least equal to those offered by the army.

The surgeon-general calls attention to the fact that of the 84 naval casualties during the war with Spain, only 17 have as yet resulted in applications for pension; a noteworthy fact in that 18 of the casualties resulted fatally.

In concluding the report special attention is invited to the sanitary condition of the navy, and especially to that existing in the Asiatic Squadron during the past year. Early precautions were taken to prevent as far as possible the ill effects resulting from necessary climatic exposure and to give the best care and attention to the sick. The results have proved their efficacy, and the sick reports from the vessels in the Philippines indicate a high standard of physical efficiency in the squadron.

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MEDICAL NOTES.

HOSPITAL ABUSE IN AUSTRALASIA. — Complaints of hospital abuse come from Australasia also.

PLAGUE IN RIO JANEIRO AND ASUNCION. — Four new cases of plague have recently been reported from Rio Janeiro, and its presence at Asuncion, Paraguay, has been officially confirmed.

DEATH OF JAMES J. TUCKER, M.D. — Dr. James J. Tucker, a physician of Chicago, died recently, aged fifty-nine years. He was a native of Boston and a graduate of Harvard Medical School in 1867.

THE "ERIN" FOR A HOSPITAL SHIP. — It is reported that Sir Thomas Lipton has expressed his willingness to equip the steam-yacht *Erin* as a hospital ship and place her at the disposal of the British Government.

EMIGRANT QUARANTINE IN EUROPE. — According to the *Medical Record*, Dr. A. H. Doty, Health Officer of the Port of New York, who recently went abroad in order to make arrangements for the detention, at the port of sailing, of emigrants from Russia until the period of incubation of small-pox had passed, after having visited Hamburg and Bremen and conferred with the steamship agents and port authorities, has gone to Russia in order to secure the co-operation of the frontier officers in that country if possible.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, November 15, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 79, scarlatina 49, measles 9, typhoid fever 18.

ADDITION TO CARNEY HOSPITAL. — An estate adjoining the hospital grounds has been purchased by the hospital. It contains 4,000 square feet of land, with a brick and frame building.

EXAMINATION FOR LICENSE TO PRACTISE IN NEW HAMPSHIRE. — The Regent of the State Boards of Medical Examiners of New Hampshire announces that the sixth examination for licenses to practise medicine in the State of New Hampshire will be held at the State House, Concord, on Thursday and Friday, December 14 and 15, 1899, beginning at 8 o'clock, A. M. All physicians who were not in practice in that State on and before March 16, 1897, must pass the examinations in order to receive a license legally to practise their profession. Application blanks should be filled out and in the hands of the Regent, Channing Folsom, by December 10th.

PURIFICATION OF SEWAGE. — A separate report upon the purification of the sewage of cities and towns in Massachusetts has been made by the State Board of Health, to be embodied in the annual report which is now being printed. It appears that at the present time works for the purification of sewage by filtration, based largely upon the experiments at Lawrence, Mass., are in operation in fourteen towns and cities of the State, varying in population from 600 to 35,000, and also in many large public and semi-public institutions. The results obtained have been highly satisfactory, the general method in use being the application of sewage intermittently to areas of prepared beds of sand or gravel, about five feet in depth.

DIPHTHERIA AND TYPHOID IN CAMBRIDGE. — Seven new cases of diphtheria have been reported to the Board of Health of Cambridge, two of them in one family, and also one case of typhoid fever. It indicates that the epidemic of diphtheria is by no means over, although it is not growing worse.

TYPHOID-FEVER EPIDEMIC AT COLLINSVILLE, MASS. — Typhoid fever has increased at Collinsville, a small town near Lowell, Mass., and the State Board of Health has been called upon for assistance. There are only four or five hundred people in the village, and forty-four cases of the typhoid have been reported since October 16th, nearly every household having a case. The State Board of Health has recommended that the water taken from Beaver Brook, which is the source of the town's supply and is known to have been polluted by a case of typhoid which proved fatal, be thoroughly boiled before using, or else that the water be taken from another part of the brook, which would necessitate the laying of a new pipe.

NEW YORK.

MORTALITY. — As the autumn advances the mortality of the city gradually diminishes, although there was but a slight difference between the death-rate of September (17.09) and that of October (16.79). The most marked decline was naturally in the diarrheal diseases, which during the four weeks ending October 28th caused a weekly average of 37 deaths, against 94.5 in the four weeks ending September 30th. In diphtheria the weekly average of deaths increased from 21.75 to 26, in pulmonary tuberculosis, from 130.5 to 145.5, and in pneumonia, from 99.25 to 126.25.

Shortening the Academic and Professional Courses. — In view of the present agitation of the question of students studying for the degree of Bachelor of Arts being allowed to substitute work in the professional schools of law and medicine for the regular college studies during their junior and senior years, the Council of the University of the City of New York, at a meeting held November 6th, resolved to make a request to the State Board of Regents to take action in the matter and determine how far this should be permitted. Chancellor MacCracken expressed the opinion that the adoption of such a plan would not affect institutions which, like the University, were provided with professional schools, but might be disastrous for the smaller colleges without such departments.

Athletics at Columbia. — In his annual report, presented to the Board of Trustees on November 6th, President Low, of Columbia University, devoted considerable attention to the subject of athletics. The problem, he said, was to check as many as possible of the abuses of intercollegiate athletics and to develop all that was good in them. In order that the influence of Columbia might be thrown as strongly as possible in favor of accentuating in every way the amateur character of such competitions, he stated that a special committee on athletics, consisting of Professors Kemp and Hutton and Dr. Savage, the director of the gymnasium, had been appointed upon the authority of the University Council. To this committee had been assigned the duty of enforcing a few simple rules that were calculated to limit the tendencies to abuse in connection with athletic sports, and, on the other hand, develop all of their good points.

Food Adulteration. — The United States Senate Committee on Manufactures, consisting of Senators Mason, of Illinois, Wetmore, of Rhode Island, and Harris, of Kansas, which is conducting an investigation into the matter of food adulteration and which has previously held sessions in Washington and Chicago, began to sit for the taking of testimony in New York on November 11th. The committee is assisted by Dr. Wiley, the chief chemist of the Government.

Deaths after Compulsory Vaccination. — Two deaths, one at Geneva and the other at Brewsters, which have lately been paraded in the newspapers as the result of "compulsory vaccination," have been investigated by the State Board of Health, and found to have been due to the neglect, ignorance and filthy habits of the parents of the children, who entirely failed to carry out the instructions of the physicians performing the vaccinations. One of the children died of tetanus, and the other of septicemia.

Bequests. — Among the charitable bequests of the late Mrs. Henrietta Martin are $12,000 to St. Luke's Home, $5,000 to the West Side Day Nursery, and $3,000 to the Home for the Relief of Destitute Blind.

Nurses for Hospital Ship "Maine." — A dozen male graduate nurses, selected at the request of Lady Randolph Churchill from the Mills Training School of Bellevue Hospital for service in the Transvaal, sailed for England on November 11th.

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ARMY NOTE.

Superintendent of the Hospital Ship "Maine." — The position of superintendent of the new hospital ship *Maine*, now being equipped by Americans abroad for use by the British Government, has been offered to Dr. Julian M. Cabell, captain and assistant surgeon, United States Army, retired, and has been accepted by him. He left New York on November 15th for London, where he will assume command of the hospital relief expedition and at once proceed to South Africa. Dr. Cabell was commissioned an assistant surgeon in the regular army in 1887 and was retired in March 1897 for injuries incurred in the line of duty, holding the grade of captain at his retirement. At the outbreak of the Spanish-American War, since under an act of Congress the services of retired army officers could not be utilized as such, he entered the volunteer service and was made surgeon of a New York volunteer regiment. On the outbreak of trouble in the Philippines he was sent to that place with the rank of brigade surgeon of volunteers, where he rendered valuable service in charge of the officers' hospital at Manila. He recently returned to the United States, was mustered out of the volunteer service, and was at once made superintendent of the Columbia Hospital, in Washington, D. C. Dr. Cabell is a man of fine appearance, charming personality and unusual executive and professional ability. His selection, as regards the success of the work of which he has been made chief, is most happy; and, as regards the medical profession of the United States and of the Medical Department of the Army, he may be relied upon to prove himself their worthy representative in whatever position he may be placed.

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Miscellany.

INFECTIOUS DISEASE AND PUBLIC LIBRARIES.

Referring to the reports circulated in the daily newspapers of the danger of infectious diseases being acquired through the books of public libraries, and especially circulating libraries, and of the recent deaths from consumption of several clerks who had been engaged in sorting old files of books and MSS., the *Medical News* expresses the opinion that, "formalin is the best agent for use in this work. It neither discolors articles subjected to its action, nor does it render them more liable to the corrosive action of time. On the other hand, it renders articles subjected to treatment entirely clean. The time has come, therefore, for all public libraries to have attached to them a disinfecting plant where all books, pamphlets, magazines, or documents that have been taken from the library may be thoroughly disinfected before being returned to their shelves."

No doubt precaution in this regard is desirable, but to make a routine practice of adequately disinfecting all books returned to a library seems neither necessary nor practicable.

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THE INTERNATIONAL ASSOCIATION OF ACADEMIES.

AN attempt has been made for several years to establish an international association of scientific societies. The project has grown, and has finally assumed a definite form, through a conference held at Wiesbaden on the 10th and 11th of October.

The immediate outcome of the conference has been, as stated in *Science*, that it is resolved to found an international union of the principal scientific and literary bodies of the world, the object of which will be to initiate or promote scientific enterprises of general interest recommended by one or more of the associated bodies, and to facilitate scientific intercourse between different countries. It is to be known as the International Association of Academies. A number of important bodies besides those represented at Wiesbaden are to be invited to join. General meetings of delegates from the various constituent academies are to take place, as a rule, at intervals of three years, but the interval may be varied and special meetings held, if necessary. The Royal Society had proposed, prior to the conference, that the first general meeting should be held in Paris next year. A council is to be appointed which will carry on the business in the intervals between meetings. The formation of committees of experts to initiate and promote scientific investigations of international importance is also contemplated. The Washington Academy was represented at Wiesbaden by Newcomb, Remson and Bowditch.

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ATHLETICS AND PATRIOTISM.

DR. CONAN DOYLE, in presenting the challenge cups and medals to the winning teams of the Victoria Park Cricket Association, made some remarks with which the majority of Englishmen will agree. In most European countries conscription prevails, and consequently the younger men are compelled to undergo a certain amount of gymnastic exercises. On completion of the military training, however, such practices are usually neglected, and in no country are manly sports so continuously practised as in Great Britain. Compulsory games at school, and the large number of cricket, football, rowing and other clubs that exist throughout our land are of incalculable advantage to the country at large as tending to improve the physical condition of the race. Dr. Doyle spoke very enthusiastically on the subject and stated that the true reserves of this country are the cricketers, the footballers and the hunting men. "If ever England got in a hole it was the sporting men and the sporting spirit that would pull her out of it." He also maintained that the State had as much right to compel men to keep themselves in physical fitness as to insist on the necessity for education. — *Lancet.*

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THE CONCEPTION OF DISEASE.

WE learn from the *British Medical Journal* of November 4th, that at the annual public night of the Medical Society of University College, London, Professor Clifford Allbutt delivered an address, in the course of which he observed that what was meant by the word "disease" was a matter on which there was, philosophically speaking, a good deal of difference of opinion. Judging from the theses presented for the M.D. degree at the University of Cambridge, a meaning was attached to the word which he could not accept. Candidates would say that such and such events occurred in the body, but they would not be disposed to give them the name of a morbid entity. In his opinion there was no such thing as a morbid entity; the term was founded upon conceptions which had long ago become in other subjects entirely exploded. Disease was merely a state in which the human body happened to find itself at one time as opposed to the state in which an average man found himself at another time. There was the same sort of difference between a healthy man and a diseased man as there was between a cold poker and a hot one. Diseases were merely an infinite number of various states of the body divided up purely for convenience under certain heads or names, and the names for states could not be regarded in any sense as separable entities. All classifications were fictions of the human mind, and classifications of diseases were particularly fictitious because the transitions between these various states were so many and the gradations so infinite that there was no real distinction in nature, although artificial classifications were necessary for convenience. If the various types of disease were considered, it was found that the word type had been introduced into the domain of disease from the field of biology. Biologists used types for convenience of reference, and in biology it was not difficult to do so, for it dealt with beings which had a separable and real existence. But when the use of a system of types was brought into the field of disease, the difficulty was met that disease had not only no independent existence, for it was merely a state of a particular man, but that also there were never two diseases exactly identical in this world. That is to say, if there were twenty men with cirrhosis of the liver they were all different, and it was only by sinking all the differences that a type was arrived at at all. Further, he contended that disease was not a positive, but wholly a negative, condition. Disease was something less than should be in function, some defect in the system of movements and functions. The question would naturally be asked, how was the enormous variety of disease to be accounted for if it was merely deprivation or defect. The variety arose because man was an exceedingly complex organism. By the word "disease" was meant nothing more than that, on a fairly rough average, a particular disease was a group of symptoms. If a group of symptoms was given the name of Bright's disease, it merely meant that out of a vast variety of symptoms melting one into another but of different magnitudes, fictitious groups had been formed to which various names were for convenience arbitrarily applied.

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THERAPEUTIC NOTES.

Treatment of Psoriasis Vulgaris. — Unna[1] succeeded in curing an obstinate case of psoriasis that resisted all treatment, by the following salve:

℞	Acidi salicyl. Acidi pyrogallici Ammon. sulph. ichthyol } āā	gr. xlvi
	Olei oliv.	ʒ iiss
	Adipis lanæ	ʒ iv

By the aid of the salicylic acid of the ichthyol the effect of the pyrogallic acid was greatly enhanced. In this form the salve may be safely applied also to the face without producing any irritation or discoloration of the skin.

For Local Anesthesia. — M. W. Herman[2] resorts to ethyl chloride only in abscesses surrounded by very thin and inflamed walls. He also uses one-half to one-per-cent. solution of cocaine in two-per-cent. boric-acid solution warmed previously to 50°–55° R., while before the injection one-fourth grain of morphine is administered hypodermatically. For anesthesia of mucous membranes (as in the urethra), author employs ten per cent. aqueous or alcoholic coca in solutions. Schleich's method has been of great value in his hands.

Treatment of Lupus Erythematosus.—Hebra[3] claims to have treated successfully six cases of this disease with the external application of alcohol. By the aid of medicated cotton the alcohol is brought into contact with the affected region, without, however, exerting any pressure thereon, but simply by moistening it with the saturated cotton. After several moistenings the cotton is removed until the alcohol is evaporated, and then the process is begun anew. The more frequent and the more thorough the application, the sooner does the cure ensue. The effect here is evidently that of cold and abstraction of water. To enhance this antiphlogistic procedure, Hebra resorted lately to the following mixture: Absolute alcohol, sulphuric ether and spir. menthæ piper. in equal parts. Soap is to be absolutely prohibited. Several cases have already been cured, without any recurrence as yet.

For Arthritis. — The *Riforma Medica* recommended the following as an external application for arthritis of acute rheumatism:

℞	Extr. hyoscyami	gr. xv
	Iodoformi	gr. xxx
	Sodii salicyl.	ʒ iss
	Vaselini	ad ʒ v

M et ft. salve. Sig. For external use.

METEOROLOGICAL RECORD

For the week ending November 4th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...29	29.91	62	73	52	87	81	84	S.W.	N.W.	16	10	O.	O.	.16
M..30	30.24	54	61	46	80	67	74	N.W.	N.	8	7	O.	C.	
T...31	30.09	52	55	49	75	98	86	E.	N.E.	21	24	O.	R.	.47
W...1	29.56	56	66	46	97	88	92	N.E.	S.W.	4	13	R.	O.	.70
T....2	30.17	40	46	33	84	66	75	N.W.	N.W.	25	8	C.	C.	
F....3	30.39	40	46	33	74	72	73	N.	E.	4	20	C.	F.	
S....4	29.91	50	58	41	97	70	84	N.W.	W.	6	13	G.	G.	.74
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* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☛ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 4, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,550,053	1049	343	8.81	12.05	1.53	1.62	2.61
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,266,832	—	—	—	—	—	—	—
St. Louis . . .	623,000	—	—	—	—	—	—	—
Boston . . .	539,416	195	50	9.18	11.22	2.04	2.04	4.59
Baltimore . .	506,389	145	31	15.64	11.56	6.80	4.76	4.08
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	305,000	81	34	37.50	3.69	7.38	8.61	12.30
Washington .	277,000	89	21	12.40	19.84	—	8.68	2.48
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	50	10	12.00	20.00	6.00	—	—
Nashville . .	87,754	33	5	9.09	6.06	3.03	—	6.06
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	111,732	22	18	8.30	4.15	8.30	—	—
Fall River . .	103,142	28	13	21.42	10.71	21.42	—	—
Cambridge . .	92,520	22	11	8.30	4.15	—	4.15	4.15
Lowell . . .	90,114	35	13	17.16	11.44	—	8.58	8.58
New Bedford .	70,511	21	4	19.04	—	—	4.76	—
Lynn	68,218	18	6	11.11	11.11	5.55	—	—
Somerville . .	64,394	16	3	12.50	12.50	12.50	—	—
Lawrence . .	59,072	16	5	6.25	6.25	—	—	6.25
Springfield . .	58,266	22	7	20.75	8.30	—	4.15	12.45
Holyoke . . .	44,510	13	4	7.69	7.69	—	—	7.69
Brockton . .	38,759	9	1	22.22	—	11.11	—	—
Salem	37,723	16	7	12.50	—	—	6.25	—
Malden . . .	36,421	7	—	—	14.28	—	—	—
Chelsea . . .	34,235	8	1	—	—	—	—	—
Haverhill . .	32,651	2	—	—	—	—	—	—
Gloucester . .	31,426	6	3	16.66	—	—	—	—
Fitchburg . .	30,523	8	1	25.00	—	12.50	—	—
Newton . . .	30,461	8	2	12.50	12.50	12.50	—	—
Taunton . . .	28,527	11	4	—	—	—	—	—
Everett . . .	28,102	5	1	20.00	—	—	—	—
Quincy . . .	24,578	—	—	—	—	—	—	—
Pittsfield . .	23,421	8	2	—	25.00	—	—	—
Waltham . .	22,791	3	1	—	33.33	—	—	—
North Adams .	21,583	4	—	25.09	25.00	—	25.00	—
Chicopee . .	18,316	4	3	25.00	—	25.00	—	—
Medford . . .	17,190	2	1	—	—	—	—	—
Newburyport .	15,036	3	1	—	—	—	—	—
Melrose . . .	14,721	4	—	—	—	—	—	—

Deaths reported 1,866; under five years of age 607; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 230, consumption 230, acute lung diseases 229, diphtheria and croup 67, diarrheal diseases 56, typhoid fever 52, whooping-cough 17, cerebro-spinal meningitis 11, scarlet fever 11, measles 11, erysipelas 3, small-pox 2.

From whooping-cough New York 11, Pittsburg 2, Boston, Providence, Gloucester and Fitchburg 1 each. From cerebro-spinal meningitis New York 6, Providence, Brockton and Everett 1 each. From scarlet fever New York 9, New Bedford 2, Lynn

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[1] Monatschr. f. prakt. Dermat.
[2] Klin. Woch.
[3] Wien. med. Woch.

1. From measles New York 9, Providence and Springfield 1 each. From erysipelas Washington, New Bedford and Salem 1 each. From small-pox New York and Everett 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending October 28th, the death-rate was 21.1. Deaths reported 4,623: acute diseases of the respiratory organs (London) 478, diphtheria 130, measles 98, fever 93, diarrhea 89, whooping-cough 37, scarlet fever 36, small-pox (Hull) 4.

The death-rates ranged from 10.1 in Cardiff to 29.7 in Bristol: Birmingham 20.5, Bradford 21.0, Gateshead 20.6, Huddersfield 14.1, Hull 19.8, Leeds 22.1, Liverpool 27.7, London 21.1, Manchester 24.4, Newcastle-on-Tyne 20.8, Nottingham 19.6, Portsmouth 19.1, Sheffield 27.3, Sunderland 23.3, West Ham 18.9.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 11, 1899.

R. G. Brodrick, passed assistant surgeon, ordered to Washington, D. C., November 17th, for examination for retirement and then home and to wait orders.

O. D. Norton, surgeon, detached from the "Ranger" and ordered to the "Monadnock," *via* the "Solace."

R. K. Smith, passed assistant surgeon, detached from the Naval Hospital, New York, and ordered to the Naval Hospital, Mare Island, Cal.

O. M. Eakins, assistant surgeon, ordered to the Naval Academy.

W. M. Wheeler, assistant surgeon, ordered to the Naval Hospital, New York.

H. E. Odell, assistant surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the "Ranger."

R. A. Marmion, medical director, promoted to medical director.

M. H. Simons, medical inspector, promoted to medical inspector.

L. G. Heneberger, surgeon, detached from the "Indiana," November 10th, and ordered home and to wait orders.

W. A. McClurg, ordered to the "Indiana," November 10th.

G. D. Costigan, passed assistant surgeon, promoted to passed assistant surgeon.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING NOVEMBER 9, 1899.

Banks, C. E., surgeon. Upon expiration of leave of absence to proceed to Boston, Mass., as inspector of unserviceable property. October 28, 1899.

Perry, T. B., passed assistant surgeon. To proceed to Titusville, Fla., for special temporary duty. October 28, 1899.

Wertenbaker, C. P., passed assistant surgeon. To proceed to Atlanta, Ga., and report to the Governor of the State for special temporary duty. October 28, 1899.

Blue, Rupert, passed assistant surgeon. Relieved from duty at Portland, Ore , and directed to proceed to New York, N. Y. (Immigration Depot), for temporary duty. November 2, 1899.

Vogel, C. W., assistant surgeon. Relieved from duty at Boston, Mass., and directed to proceed to New York, N. Y. (Stapleton), for duty and assignment to quarters. October 30, 1899.

Dudley, D. E., acting assistant surgeon. Granted leave of absence for thirty days. October 31, 1899.

Kenan, Spalding, acting assistant surgeon. Granted leave of absence for six days. October 28, 1899.

Carter, H. R., surgeon. To proceed to Miami, Fla., for special temporary duty. November 9 1899.

Smith, A. C., passed assistant surgeon. Relieved from temporary duty at the Tortugas Quarantine Station and directed to proceed on steamer "Powhatan" to the Reedy Island Quarantine Station. November 3, 1899.

Nydegger, J. A., passed assistant surgeon. To report at Washington, D. C., for special temporary duty. November 3, 1899. Granted leave of absence for six days. November 6, 1899. To proceed to Cadiz, Spain, for duty. November 6, 1899.

Sprague, E. K., passed assistant surgeon. Granted leave of absence for two days. November 3, 1899.

Greene, J. B., assistant surgeon. Granted leave of absence for twenty-one days. October 28, 1899.

Tabb, S. R., assistant surgeon. To rejoin station at Savannah, Ga. November 8, 1899.

Anderson, J. F., assistant surgeon. Granted leave of absence for four days. November 3, 1899. To proceed to Barcelona, Spain, for duty. November 6, 1899.

Fricks, L. D., assistant surgeon. Relieved from special temporary duty at Key West, Fla., and directed to proceed to Miami, Fla., for temporary duty. November 6, 1899.

Schereschewsky, J. W., assistant surgeon. To report to Surgeon L. L. Williams, Immigration Service, New York, N. Y., for assignment to duty. November 3, 1899.

Lord, C. E. D., assistant surgeon. To report to medical officer in command, New York, N. Y. (Stapleton), for temporary duty and assignment to quarters. November 3, 1899.

Gregory, G. A., acting assistant surgeon. Granted leave of absence for five days. November 6, 1899.

Moncure, J. A., acting assistant surgeon. Granted leave of absence for thirty days from November 15th. November 3, 1899.

Goodman, F. S., hospital steward. Granted leave of absence for thirty days from December 1st. November 9, 1899.

PROMOTION.

J. B. Greene, assistant surgeon, commissioned as passed assistant surgeon. November 2, 1899.

APPOINTMENTS.

Jos. W. Schereschewsky, of Massachusetts, and Charles E. D. Lord, of Maine, commissioned as assistant surgeons. November 2, 1899.

APPOINTMENT.

M. Manges has been appointed to the professorship of diseases of the chest and general medicine in the New York Polyclinic, which was made vacant by the death of Dr. R. C. M. Page.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, November 20th, at 8 o'clock.

Dr. Richard C. Cabot, "A Clinical Study of 168 Cases of Valvular Heart Disease."

Dr. Walter E. Paul: "Epilepsy: Diagnosis, Prognosis, Treatment."

A. K. Stone, M.D., *Secretary*, 657 Boylston St.

Suffolk District Medical Society. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, November 22, 1899, at 8 p. m.

Papers: Dr. Frederick W. Johnson, "Steam in the Treatment of Chronic, Hyperplastic and Senile Endometritis, Putrid Abortion and Puerperal Sepsis."

Paper: Dr. W. M. Conant, "Tumors of the Female Bladder, and Report of a Case of Papillary Angio-Sarcoma."

R. A. Kingman, M.D., *Chairman.*
C. H. Hare, M.D., *Secretary.*
285 Marlborough Street.

RECENT DEATHS.

Charles H. Holzhausen, M.D., one of the physicians of the outdoor department of Bellevue Hospital, died on November 4th, of typhoid fever. He was twenty-nine years of age, and a graduate of the College of the City of New York and of Bellevue Hospital Medical College.

Edward Bleecker, M.D., the most prominent practitioner of medicine in the Borough of Queens, died on November 5th, of pneumonia complicating cirrhosis of the liver, at his home in Whitestone, L. I. He was born in Albany in 1844, and was graduated from the College of Physicians and Surgeons, New York, in 1865. He first served as a surgeon at the State Barracks at Albany, where several thousand sick and wounded soldiers were quartered, and afterwards went to the New York Quarantine Station on Staten Island as assistant to Health Officer Swinburne. The greater part of his professional life was spent at Whitestone, where he was a member of the Board of Education for twenty-five years.

Walter M. Hoffman, M D., formerly United States Consul at Manheim, Germany, died in Reading, Pa., recently, aged fifty-three years. He was formerly connected with the Smithsonian Institution, and before that with Western scientific expeditions. He received decorations from a number of foreign rulers and scientific bodies. He was a surgeon in the Franco-German War.

BOOKS AND PAMPHLETS RECEIVED.

A Text-book of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease. By Arthur R. Cushing, M.A., M.D. (Aberd.), Professor of Materia Medica and Therapeutics in the University of Michigan; formerly Thompson Fellow in the University of Aberdeen and Assistant in the Pharmacological Institute of Strasburg. Illustrated with 47 engravings. Philadelphia and New York: Lea Brothers & Co. 1899.

Progressive Medicine: A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Vol. III., September, 1899. Diseases of the Thorax and its Viscera, including the Heart, Lungs and Blood-vessels; Diseases of the Skin; Diseases of the Nervous System; Obstetrics. Philadelphia and New York: Lea Brothers & Co. 1899.

Original Articles.

TYPHOID FEVER AT THE MASSACHUSETTS GENERAL HOSPITAL DURING THE PAST SEVENTY-EIGHT YEARS. MORTALITY; INTESTINAL HEMORRHAGE; PERFORATION; RELAPSE.[1]

BY REGINALD H. FITZ., M.D., BOSTON.

The recognition in this country of typhoid fever as an independent disease and its identification with the typhoid fever of Paris were the outcome of investigations carried on at the Pennsylvania Hospital in Philadelphia and at the Massachusetts General Hospital in Boston. The discoveries in the first quarter of this century of the French pathologists, above all, of Louis, received but little attention from the American physicians of that period. In fact, the observations on typhoid fever of this eminent physician were known to James Jackson, professor of the theory and practice of physic in Harvard University, only through a review in the *Edinburgh Medical and Surgical Journal* for 1830, until the return from Paris, three years later, of his son, James Jackson, Jr. This gifted young physician, in the words of Dr. Osler, "the young Marcellus among the physicians of the country," between 1831 and 1833 was a fellow-student in Paris of William W. Gerhard, and Casper W. Pennock, both of Philadelphia. These young men became devoted followers and admirers of Louis. Jackson, in particular, came into such intimate personal relations with him as to look upon him as a second father. Louis has placed on record the warmth of his friendship for the younger Jackson and his thorough appreciation of his exceptional talent for the observation of disease. Dr. Gerhard, soon after his return to Philadelphia in 1833, received the appointment of resident physician in the Pennsylvania Hospital, occupying this subordinate position for the purpose of devoting himself for a while to medical research. The results of his investigations in typhoid fever were published in the following year.[2] James Jackson, Jr., within two weeks after his return from Paris, closely studied the cases of disease in the Massachusetts General Hospital (both in the wards and in the autopsy-room) until he was taken sick with typhoid fever. Soon after recovery from this disease he died of dysentery, early in 1834, just as he was about to begin the practice of medicine in Boston. Although his opportunity of active research at the hospital was limited to a few weeks only, his influence seems to have been the most powerful factor in bringing about, both in the hospital and in New England, the more exact knowledge of the nature of typhoid fever. Until his return the examination of the intestines in this disease was not properly conducted; indeed they were most frequently left unopened. Within six weeks after his investigations were begun the evidence obtained with regard to typhoid fever was strongly corroborative of the observations of Louis. "He found that this disease exhibited in the living and in the dead the same characters which his master had so accurately delineated."[3]

The names of two other Bostonians, Drs. Bowditch and Shattuck, also pupils of Louis, and who eventually became physicians to the Massachusetts General Hospital, likewise were intimately connected with the early history of typhoid fever. Henry I. Bowditch in 1832 was a fellow student in Paris of the younger Jackson and shared in his enthusiastic admiration for Louis. He translated the "Recherches Anatomiques" of this author,[4] and thus in 1836 opened to most of the practitioners of the United States and of the British Kingdom what hitherto had been a sealed book. Geo. C. Shattuck, Jr., was sent to England by Louis in 1838 to observe the cases of continued fever in that country, all of which were then regarded as the one affection, typhus, with the view of determining to what extent they resembled and differed from those occurring in Paris. He found examples of both typhus and of typhoid fever and reported that the latter disease in England was identical with the one observed by Louis in France. His investigations were communicated to the Society for Medical Observation in Paris and were published subsequently in Philadelphia.[5]

The influence of James Jackson, Jr.'s, work at the hospital was first made evident in June, 1838, when his father presented to the Massachusetts Medical Society a "Report founded on the Cases of Typhoid Fever, or the Common Continued Fever of New England, which occurred in the Massachusetts General Hospital from the Opening of that Institution in September, 1821, to the End of 1835."[6]

The number of cases serving as the basis of this report was 303, but reference to the records of the hospital during this period shows that they were entered as *typhus*, *enecia*, *enecia typhus*, *enecia synochus* and *enecia cauma*. These diagnoses at some later period were overwritten by the term typhoid fever. Dr. Jackson, in the paper now under consideration, was led, "after much hesitation," to use the term typhoid fever through the influence of Dr. Gerhard, although he had recognized in 1833 the identity of the continued fever of Boston with that described by Louis.

During the earlier part of the period covered by the report Dr. Jackson thought that in most cases the early use of active remedies, especially of antimony, would diminish the violence of the fever and, in many instances, would arrest it.[7] In almost all the patients, therefore, "vomiting or full purging or both, were induced by medicine, in the first or second week of the disease."[8] After 1881 emetics were used much less frequently than before, although but few patients were allowed to go without a cathartic, and between 1883 and 1835 cathartics were not used as often after the first day in a large proportion of the cases. Mercurials, almost exclusively calomel, were employed during the first or second week until the mouth was made sore, but after 1830 their use almost entirely ceased.

In 1838, however, doubts arose, especially in the mind of one of his colleagues, as to the benefit of any continued active treatment. Notwithstanding these doubts, Dr. Jackson, from 1838 to 1835, during the first week of the disease, usually prescribed tartar emetic every two hours in constantly increasing quantity, until it was ascertained how large a dose the patient could bear. It was found that from one-half a grain to four grains thus could be taken without any important effect upon the stomach or bowels. Bleeding was used in one-fifth of the cases, not as a remedy for the disease, but always with reference to particular symptoms, and opium was given to check diarrhea and cough, to procure sleep, and to alleviate pain.

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[1] Read before the New York State Medical Association, October 25, 1899.

[2] American Journal Medical Sciences, 1834, xv, 32.

[3] Memoir of James Jackson, Jr., M.D., 1835, p. 40.

[4] Anatomical, Pathological and Therapeutic Researches on Gastro-enterite, Putrid, Adynamic, Ataxic or Typhoid Fever. By P. Ch. A. Louis. Translated by Henry I. Bowditch, M.D. Two vols., 1836.

[5] Medical Examiner, 1840, iii, 133.

[6] Medical Communications, Massachusetts Medical Society, 1841, vi, 79.

[7] Memoir, p. 41.

[8] Report, p. 91.

Dr. Jackson concluded, apparently by deduction according to the numerical method of Louis, that at the onset of typhoid fever the patient should receive an emetic, followed by a cathartic, or the two should be given in combination. If the vomiting and purging were not followed by great relief, venesection was to be practised on the following day unless the patient's constitution was very feeble or the attack mild. If the disease did not subside after the evacuations, tartar emetic was to be given every two hours in increasing doses, the bowels being kept open in the meantime. It was advised that calomel should enter into the medicines used for this purpose. Evacuations, at least vomiting and purging, might be resorted to in the second week, and some benefit might be obtained if the use of small doses of antimony was begun in this week. After the second week no active treatment was to be employed, at all events none which would cause any serious inconvenience to the patient.

As a result of Dr. Jackson's experience, but not capable of being demonstrated by the numerical method, was his adherence to the mildest articles of liquid diet until the patient was "fully reinstated." Then extra food was allowed cautiously, the caution being the more necessary the earlier the return of the appetite. Vinous liquors might be tried if desired by the patient when greatly enfeebled at a late stage of the disease.

In the following year, 1839, Enoch Hale, attending physician of the hospital, also addressed the Massachusetts Medical Society on the subject of typhoid fever.[9] His paper was based chiefly upon his experience at the hospital from October 1833 to 1839, during which years 197 cases had been admitted. The former date was selected since it represented the time at which especial attention began to be directed to the study of the symptoms and lesions of this affection. He stated that the knowledge of the disease of Peyer's glands in typhoid fever "serves to guard us especially against inappropriate, irritating medicines, such as were formerly in use, in the expectation of arresting the progress of the fever. . . . Up to a very recent period, if it be not so in some places even now, it was a common practice to give not only antimonials, but irritating cathartics, not only occasionally to evacuate the intestines, but daily, and several times a day, to 'break up' or arrest the progress of the disease, or to cure diarrhea by removing the supposed cause of irritation.[10] 'Hence the necessity of a mild and unstimulating diet during convalescence as well as during the more active period of the disease,' and 'most important . . . to abstain from attempting too much by active treatment.' . . . Violent, persevering efforts to arrest the disease, after it has fairly begun its course, cannot be successful. They may do much harm by increasing the irritation and inflammation; but it is scarcely possible that they can do good. We may allay the general irritability of the system, we may watch against the attack of unfavorable symptoms, we may soothe the irritated state of the intestinal canal, and, sometimes, perhaps moderate the severity of its local inflammation, and thus contribute greatly both to the comfort and the restoration of our patient. In the beginning of disease, before the process of inflammation is fully established, we may, perhaps do more, and by early removing the causes of irritation, prevent its formation, and cut short its course. It is only then that active remedies can be used with benefit, or even with safety. If persevered in at a later period, they may exhaust the patient, but they will not subdue the disease."[11]

During the past sixty years the treatment of typhoid fever at the hospital has not varied materially from the plan pursued by Dr. Hale and his colleagues. For the purpose of more exact information with regard to the modifications in carrying out this plan and their results, my former assistant, Dr. Louis W. Gilbert, has undertaken the laborious task of examining the original records. He has prepared the accompanying table, which shows the mortality in successive years and the frequency of intestinal hemorrhage, perforation and relapse. The results of this investigation are presented for your consideration.

Year.	No. cases.	Deaths.	Mortality Per cent.	Hemorrhage.	Per cent.	Perforations.	Per cent.	Relapses.	Per cent.
1821									
1822	1								
1823	5								
1824	15	3	20						
1825	18	2	11.1						
1826	26	3	11.5						
1827	19	3	15.7						
1828	22	2	9						
1821-1829	106	13	12.2						
1829	25	1	4						
1830	14	4	28.5						
1831	29	2	6.8						
1832	23	4	17.3						
1833	37	6	16.2						
1834	34	6	17.6						
1835	35	6	17.1						
1836	59	6	10.1						
1837	29								
1838	20	1	5						
1829-1839	305	36	11.8						
1839	33	4	8.3						
1840	40	7	17.5	1	2.5				
1841	11	1	9.1						
1842	15	1	6.6						
1843	15	4	26.6						
1844	38	7	18.4						
1845	36	4	11.1						
1846	29	1	3.4						
1847	90	5	5.5	2	2.2				
1848	53	6	11.3						
1839-1849	360	40	11.1	3	.8				

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[9] Remarks on the Pathology of the Typhoid Fever of New England as exhibited in its Physical Signs, and its Anatomical Appearances. Medical Communications, Massachusetts Medical Society, 1841, vi, p. 183.

[10] Loc. cit., p. 253.

[11] Medical Communications, Massachusetts Medical Society, 1841, vi., p. 255.

Year.	No. cases.	Deaths.	Mortality Per cent.	Hemorrhage.	Per cent.	Perforations.	Per cent.	Relapses.	Per cent.
1849	36	5	13.9	2	5.5				
1850	32	5	15.6						
1851	37	7	18.9	3	8.1				
1852	31	6	19.3						
1853	32	5	15.6	2	6.2				
1854	32	4	12.5	1	3.1				
1855	36	1	2.8			1	3.1		
1856	22	3	13.6						
1857	33	9	27.2	1	3.3				
1858	27	6	22.2	1	3.7	1	3.7		
1849–1859	318	51	16	10	3.1	2	.6		
1859	55	5	9	1	1.9				
1860	28	4	14.3	1	3.5				
1861	41	4	9.7						
1862	19	4	21.5	1	5.2				
1863	42	9	21.4	3	7.1				
1864	33	3	9	1	3.3				
1865	24	6	25						
1866	23	2	8.7						
1867	16	3	18.9			1	6.2		
1868	20	8	40					1	5
1859–1869	301	48	15.9	7	2.3	1	.3		
1869	31	4	12.9					1	3.2
1870	- 50	7	14	1	2			3	6
1871	41	13	31.7	2	4.8	2	4.8		
1872	45	5	11.1	1	2.2	1	2.2	2	4.4
1873	37	9	24.3	1	2.7			2	5.4
1874	27	3	11.1	1	3.7			2	7.4
1875	46	5	10.9	1	2.2			6	13.2
1876	39	6	15.4	4	10.2	1	2.5	6	15.4
1877	23	1	4.2	1	4.2			4	16.8
1878	16	5	31.2					5	31.2
1869–1879	355	58	16.6	12	3.4	4	1.1	31	8.7
1879	23	5	21.7	1	4.3			1	4.3
1880	52	4	7.7	2	3.8			7	13.4
1881	75	17	22.7	2	2.4			9	12
1882	56	10	17.8	5	8.9			4	7.1
1883	63	13	20.1	4	6.3	1	1.5	8	12.7
1884	74	17	22.9	4	5.4			14	18.9
1885	90	12	14.2	3	3.3			10	11.1
1886	84	12	14.3	2	2 3	1	1.1	16	25
1887	161	20	12 3	6	3.7			23	14.3
1888	115	17	14.7	11	9.5	1	1.1	16	13.9
1879–1889	793	127	16	40	5	3	.3	108	13.6
1889	119	13	10.9	11	9.1	4	3.3	17	14.2
1890	68	6	8.8	6	8.8			8	11.7
1891	98	16	16.3	8	8.1	2	2	8	8.1
1892	92	13	14.1	5	5.4			7	7.6
1893	81	9	11.1	4	4.9	2	2.4	9	11.1
1894	89	16	17.9	14	15.9	4	4.4	8	6.9
1895	88	16	18.1	12	13 6	1	1.1	10	11.4
1896	120	13	10.8	7	10.8	1	1.5	23	19.1
1897	86	11	12.8	11	12.8	2	2.3	4	4.6
1898	159	22	13.2	12	7.5			19	11.9
1889–1899	1,000	135	13.5	90	9	16	1.6	113	11.3

Totals, 1821–1899: Number of cases 3,538; deaths 509; mortality per cent. 14.3.

For the entire period of seventy-eight years but one volume of the clinical records of the medical cases is missing, namely, Volume CCCI, covering a part of the year 1871. The number of patients with typhoid fever assigned to this year, therefore, is, probably, somewhat smaller than was actually the fact, and the data obtained for 1871 are less valuable for purposes of comparison than would have been the case were the missing volume at hand. The table includes only those cases of typhoid fever which were treated in the hospital for a longer period than two days. Convalescents from typhoid, admitted for the purpose of recovery from the effects of the disease, are not entered in the lists. With these exceptions the total number of patients included is 3,127 from 1839 to 1899, and 3,538 from the admission of the first patient in 1821 to the year 1899. The average mortality for the seventy-eight years from the opening of the hospital is 14.3 per cent., and for the past sixty years it is 14.7 per cent. The percentage of mortality in successive decades does not differ widely from the above figures, as appears from the following statement:

Decade.	Mortality.
1829 to 1839	11.8%
1839 " 1849	11.1 "
1849 " 1859	16 "
1859 " 1869	15.9 "
1869 " 1879	16.6 "
1879 " 1889	14.7 "
1889 " 1899	13 5 "

The years of low mortality were, 1837, no deaths; 1835, 2.8 per cent.; 1846, 3.4 per cent., and 1877, 4.2 per cent. On the other hand, years of unusually high mortality were 1843, 26.6 per cent.; 1857, 27.2 per cent.; 1878, 31.2 per cent. and 1868, 40 per cent. That these variations were independent of any sudden changes in treatment will appear from contrasting them with the mortality in contiguous years. Although in 1855 the mortality was only 2.8 per cent., in 1854 it was 12.5 per cent., and in 1856 it was 13.6 per cent., while in 1857 it was 27.2 per cent. In 1877 the mortality was 4.2 per cent. and in 1878 it was 31.2 per cent. The highest mortality in any one year was 40 per cent. in 1868, but in 1867 it was 18.9 per cent. and in 1869 it was 12.9 per cent.

Such variations in mortality and an appreciable prolongation of the period of convalescence led Dr. Jackson, in 1838, to question whether the increased mortality and the prolonged convalescence during the period of radical changes in the treatment from 1833 to 1835 inclusive were due to the greater severity of the disease or to the less active treatment during this period. It would appear from his concluding advice that he preferred to return to the more active treatment to which he had long been accustomed than to recommend the blander methods preferred by some of his colleagues, and of which he had made a trial for a number of years. Dr. Hale,[12] on the contrary, in the following year answered Dr. Jackson's query by stating that during the three years subsequent to the period included in Dr. Jackson's report the treatment was perhaps even milder than ever before. Although the mortality from 1833 to 1835, inclusive, was from 16 per cent. to 17 per cent., it fell to 10 per cent. in 1836. In 1837 there were no deaths; in 1838 the mortality was 5 per cent. and the average mortality for the three years was in the vicinity of 6 per cent. The higher mortality of the earlier years was attributed, therefore, by Dr. Hale to the difference in the severity of the disease at different periods.

Although the study of the mortality table makes it doubtful if modifications of treatment carried on at the hospital have produced any essential change in the death-rate, it is desirable to consider this question from the other side and inquire what changes, if any, have followed alterations of treatment.

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[12] Medical Communications, Massachusetts Medical Society, 1841, vi, p. 254.

For the thirty years after the publication of Dr. Hale's paper, namely, from 1839 to 1869, the diet of the patients was liquid, the fluids often containing some farinaceous ingredient. From 1869 to 1879 beef tea and beef juice were largely used in addition to the milk, and from 1879 to 1899 the liquid portion of the diet has been chiefly milk. Between 1893 and 1898 the patients under the care of Dr. F. C. Shattuck have received, in addition to the milk, minced meat, raw and soft-boiled eggs, macaroni, soft crackers, toast and puddings. Patients under the care of Dr. E. G. Cutler during a like period have been fed on skim milk, buttermilk, eggs and milk, albumin water, chicken broth, and beef juice with barley water. The mixed foods were so strained as to be freed from solid particles.

During the thirty years of liquid, farinaceous diet, the average mortality was 14.1 per cent. In the milk and beef-tea decade it was 16.6 per cent., although in the immediately preceding liquid, farinaceous decade it was 15.9 per cent. From 1879 to 1899, among those patients using milk as the principal article of food, the mortality was 14.6 per cent., which was about the same as during the period of liquid, farinaceous diet. The mortality was only 11.3 per cent., however, among the patients between 1893 and 1898 who were fed upon the liquid and soft-solid diet prescribed by Dr. Shattuck. This mortality compares very favorably with that of 15.1 per cent. noted among the patients using a largely milk diet, and with the 16.6 per cent. mortality occurring among patients taking strained, starchy and proteid fluids.

Since 1839 emetics and purgatives have no longer been in use and antimony has been discontinued. Calomel has been employed only occasionally in the decade following 1838, and again in 1887, when ten grains of calomel were given as a matter of routine to about one-half of the patients when they entered the hospital. The treatment in general use consisted of an alkaline fever mixture, mild laxatives or chalk mixture and laudanum, as the condition of the bowels might demand. After 1868 rectal enemata instead of laxatives by the mouth were used when a movement of the bowels was desired. In 1878 quinine and other antipyretic drugs were added to or substituted for the alkaline fever mixtures, and were used with greater or less frequency during the subsequent ten years. The external use of water in the treatment was begun in 1873. At first some of the patients were sponged with tepid water two or three times daily. From 1878 to 1888, however, the frequency of the sponging was increased to six or eight times a day, and the temperature of the water was often as low as 65° F. Since 1888 sponge baths and tub baths, at a temperature of 65° F. and upwards, have been in constant use as often as every four hours when the temperature of the patient was 102.5° F. As the average mortality from 1878 to 1888 was 16 per cent., and that from 1888 to 1898 was 13.5 per cent., it is evident that a definite lowering of the rate has taken place during this period of cold-water treatment. It does not follow, however, that this change for the better was due to the use of cold water, since a lowering of the mortality of even 5 per cent. in successive decades took place between 1839 and 1859, wholly independent of any obvious modification of treatment. It remains to be learned whether the external use of cold water and the changes in diet have been attended with variations in the occurrence of such complications of typhoid fever as intestinal hemorrhage, perforation and relapse.

In the earlier years of the hospital, patients with typhoid fever were allowed to walk to the closets for the purpose of emptying the bowels; hence, presumably, the occurrence of hemorrhage from the intestine was often overlooked. Notwithstanding this fact, Dr. Jackson [13] notes 10 per cent. of hemorrhage from the bowels in his series of 303 cases.

From 1849 to 1899 the occurrence of intestinal hemorrhage is recorded in 159 cases out of 2,767 patients, a ratio of 5.7 per cent. The extremes in the decades here included are 2.3 per cent. from 1859 to 1869 and 9 per cent. from 1889 to 1899. The table shows that during the last twenty years, and especially during the past ten years, hemorrhage from the bowels has been much more frequent than during the previous twenty years. Indeed, the average occurrence has been nearly as high in the past ten years as during the days of emetics and the active use of purgatives. That this is not a question of consistence of food appears probable from the study of the records between 1893 and 1899. In this period the frequency of intestinal hemorrhage among patients living chiefly on a milk diet was 10.6 per cent; among those fed upon strained proteid and amylaceous fluids it was 16 per cent., while it was only 9 per cent. among the patients living upon fluids and soft solids. The inference from this comparison is: A diet of soft solids not only does not provoke intestinal hemorrhage, but also rather lessens the tendency to this complication. On the other hand, a strained mixed diet may increase somewhat the frequency of hemorrhage.

In like manner the question of perforation of the intestine has been investigated. The difficulties in the way of determining the occurrence of this complication of typhoid fever are obvious to all physicians. Its presence is suggested by the onset of symptoms of peritonitis, and is made apparent by the discovery of the perforation after a laparotomy or at a post-mortem examination. The symptoms of perforation may exist, however, and no perforation be found at a laparotomy or after death. Perforation, indeed, may have taken place and no characteristic symptoms have announced its occurrence. Bearing in mind these difficulties, all the cases of suspected perforation have carefully been scrutinized, and those instances only admitted to the table in which the perforation was demonstrated, or the clinical evidence was of the strongest possible nature. It is only within the past thirty years that the data were considered sufficient to permit comparisons to be made. From 1869 to 1879 the average frequency of perforations was 1.1 per cent., from 1879 to 1889 it was 0.3 per cent., and from 1889 to 1899 it was 1.6 per cent. These differences are so slight as to make it doubtful if diet or treatment has had any effect in modifying the tendency to this grave complication of typhoid fever. Of 10 patients with perforation between 1893 and 1897, five, or 2.8 per cent., were using a largely milk diet; two, or 1.8 per cent., strained liquid diet; and three, or 3.4 per cent., were fed upon liquid and soft-solid diet.

Any accurate observation concerning the frequency of relapse has been made trustworthy only since the introduction of the thermometer in the study of disease. Careful thermometric records have been made at the hospital since 1869. From 1869 to 1879 the average frequency of relapse was 8.7 per cent.; from 1879 to 1889 it was 13.6 per cent., and from 1889 to 1899 it was 11.3 per cent. The average for the thirty years is 11.2 per cent. It may be that the increased frequency during the past twenty years is due largely, as has frequently been maintained, to the hydriatric treatment of the disease.

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[13] Report, p. 117.

The possible influence of diet has also been considered. Under the largely milk diet the ratio of relapse was 13.1 per cent. It was 11.1 per cent. among patients living upon the strained proteid and amylaceous diet, and 10.2 per cent. among patients fed on fluids and soft solids. Relapses thus were rather more frequent among patients living upon a largely milk diet.

The conclusions reached from this study of the records of the Massachusetts General Hospital for the past seventy-eight years are as follows:

(1) The treatment of typhoid fever does not differ in essentials from the principles laid down in 1839.

(2) The average mortality from this disease has not materially changed from the days of active treatment with emetics, purgatives, venesection, antimony and calomel down to the present time.

(3) Intestinal hemorrhage, perforation and relapse, upon the whole, are quite as frequent now as at any period in the history of the disease.

(4) A considerable variety in diet may be permitted not only without detriment, but also with possible benefit to the patient.

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ON THE VALUE OF BLOOD EXAMINATIONS IN THE DIAGNOSIS OF CAMP FEVERS — A REPORT OF THE BLOOD EXAMINATIONS IN TYPHOID FEVER AND IN THE MALARIAL FEVERS.[1]

Cases occurring in the U. S. Army General Hospitals at Fort Myer, Va., and at Savannah, Ga.

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This report is simply a preliminary one, and only an abstract of the report which will appear later. Necessarily a paper like this can only treat of such a subject in a brief and unsatisfactory manner. There are several very important points, however, which it will give me an opportunity to bring out. If I can but impress forcibly and clearly on your minds, and on the minds of the medical profession at large, the great and vital importance of careful and systematic blood examinations in the diagnosis of fevers, especially those occurring in military camps, I shall have accomplished something.

It would seem that every intelligent medical man of this day must appreciate the value of such examinations in the differentiation of typhoid fever and the malarial fevers. We have had ample proof, both in civil and military life, that this is not so. Witness the number of deaths from typhoid fever, and the wide spread of this disease during the past year, both in civil and in military communities.

Confining ourselves to the military side, — that in which I have lived and worked for the past year, — let us consider the large number of cases of typhoid fever occurring in the various camps, and the number of deaths resulting therefrom. Statistics show that casualties of the army in action are few as compared with the deaths and disabilities caused by camp fevers.

When we stop to consider the great advance made in medical science during the past decade, and then look at our slight control over such widespread diseases as typhoid fever, we must be amazed. After all our progress in knowledge of the etiology and pathology of typhoid, have we gained in the same ratio in our ability to prevent this disease? No; we certainly have not. And why? Because the first cases of typhoid fever were not recognized and treated as such. Nowhere has this failure to recognize the disease been so forcibly illustrated as in the military camps during the war.

If the word "malaria" could have been eradicated from the vocabulary of the camp surgeon last summer, many lives would have been saved. It was due to the pernicious diagnosis of all fever cases as malaria, malaria, malaria, that typhoid fever became almost an epidemic in some of the camps.

We know positively from our experience in the past year that typhoid fever may spread throughout a military camp without any contamination of the water supply. At first the disease spreads slowly and gradually, but it grows on gaining and gaining, until it assumes the proportion of an epidemic. The investigations of the Surgeon-General's Commission on typhoid have proved this, and my own observation and study of cases brought to Fort Myer from Camp Alger, as well as my inspection of Camp Alger and of other camps, has confirmed it. If two cases, or, indeed, if one case of typhoid fever occurs in a command and is followed by another case, then is the time to act, to prevent an epidemic. The Sanitary Commission, appointed on the recommendation of the Surgeon-General of the Army, General Sternberg, will show in its report that if the first cases are recognized, typhoid-fever readily succumbs to strict hygienic measures and *morale* of camp.

In his address on the "Sanitary Lessons of the War," delivered before the American Medical Association, at Columbus, O., a short time ago, the Surgeon-General of the Army, Dr. Geo. M. Sternberg, says: "This failure to recognize typhoid fever during its earlier stages, an error in diagnosis made on a very extensive scale during the Civil War, has been made on an equally extensive scale by the surgeons of the British Army on duty with troops in India, and is still being made by a majority of the practitioners of medicine in certain parts of our own country." And again in the same address General Sternberg says: "I consider it my duty to speak plainly with reference to one of the principal causes of the epidemic prevalence of typhoid fever in our camps. As a rule this disease was called by some other name by the medical officers on duty with regiments, who first saw the cases. Usually it was assumed to be malarial fever, and was treated as such until the patient became so sick that it was found necessary to send him to the division field hospital or to a general hospital. This general statement is based upon the carefully made investigation of a board of medical officers appointed on my recommendation."

During the summer and fall of 1898, I was attached to the United States Army General Hospital at Fort Myer, Va., only a few miles distant from Camp Alger. I was on duty as pathologist to the General Hospital. My duty was to investigate all cases received and to establish, if possible, an accurate diagnosis in each and every case. In this work it is a pleasure to acknowledge the assistance and encouragement of the Surgeon-General of the Army and of the commanding officer of the General Hospital, Wm. B. Davis, major and surgeon, United States Army.

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[1] Read before the Massachusetts Medical Society, Boston, June 14, 1899.

We received some 800 cases from Camp Alger alone, from the camp at Jacksonville, Fla., by way of hospital train, some 135 patients, 50 from Knoxville, Tenn., some 240 from Camp Meade, Pa., about 250 from Santiago by way of Montauk, L. I., and a number from various other camps. In all something over 1,600 patients were treated at Fort Myer. Of these 1,600 cases, the great majority of all were fever cases; practically all doubtful cases and a good part of the entire number had careful blood examinations made upon them. Not only this, but I saw every case personally, diagnosed malaria and made careful blood examination not only for the plasmodium but for the "Widal." It was part of the routine work to take a specimen of fresh blood at the same time as specimen taken for Widal's test. This fresh-blood specimen was examined immediately for the malarial parasite and roughly whether there was any marked leucocytosis or not. These examinations were repeated often in negative cases. In all I made something over 1,000 Widal tests and fully as many examinations of fresh blood for malaria and for leucocytosis.

It is a most remarkable thing that of all the blood examinations made from the soldiers coming from Camp Alger, Jacksonville, Knoxville and Camp Meade, that is, men who had not been to Cuba, I failed to find a single malarial parasite during the months July to October. From this we cannot say that not a single case of malaria existed in the camps last summer and autumn, but it does show that malaria must have been very uncommon in these military camps. Mild cases of malaria might have come to Fort Myer so under the influence of quinine that it was impossible to find the parasite, but it is entirely improbable that there could have been more than a very few of even very mild cases, for not only was there no microscopical evidence but no clinical evidence of malaria among these men coming from the camps (save those from Montauk) in the United States during this time.

On the other hand, among the soldiers from Camp Wikoff, Montauk, L. I. (all men from the Fifth Corps from Santiago) malaria was the rule; typhoid fever not so common. The cases of typhoid brought to Fort Myer from Camp Alger, Va., from Jacksonville, Fla., and Knoxville, Tenn., were diagnosed by their regimental surgeons as malaria in the great majority of instances. Practically all of them had been treated to liberal doses of quinine. From Camp Meade, too, cases received later in the year, many bore the diagnosis of malaria. Among the number of soldiers of the Fifth Army Corps, coming from Montauk, some 250, only 10 were typhoid, and the majority of these came in with the same diagnosis of malaria. There was reason for this diagnosis in these cases, as most of them were combined typhoid fever and malarial fever. The accuracy of diagnosis of the cases from the Fifth Army Corps was remarkable, as the inaccuracy of the diagnosis of the regimental surgeons of Camp Alger and other camps was also remarkable.

It is clear now, even to the most unthinking layman, that the great, vital, important thing is the early recognition of the first cases of typhoid fever as such. How can this be done? Only by the careful examination of the blood in all cases of fever occurring in camp, no matter what they are supposed to be. By the blood examination we can detect these cases. When I say blood examination, I mean not only the performing of "Widal's test" but the examination of the fresh blood, both for malaria and for leucocytosis. Often the blood will not react to the Widal till the second or third week, and sometimes, uncommonly, not at all, but when we can eliminate malaria after repeated negative examinations for the plasmodium, and we have a case presenting clinically typhoidal symptoms, negative to malaria, and the blood showing no leucocytosis, we can almost make an absolute diagnosis of typhoid fever on this data alone. Our experience has shown that all such cases should be regarded as typhoid, and treated as such, until proved to be otherwise. But as the Widal reaction does occur in certainly 95 per cent. of cases, we have a means of detecting typhoid and of making the diagnosis sure beyond all doubt in the vast majority of cases. The clinical examination is of the greatest importance. It is a great mistake to separate the clinical and the pathological. They both go to make up the whole. The sum is complete only when they are joined It is equally incomplete if either is absent.

Perhaps I have dwelt too long on this side of my subject, so I will pass to a brief analysis of the results of my work. However important as is the clinical and scientific observation, I regard what I have already said as vastly more important, for what is the use of all our knowledge gained by investigations of so many workers if we fail to make practical application of it, or fail to show others the true value of it?

I wish here to call attention to the great value of fresh-blood examination in addition to "Widal's test." I do not think text-books and hematologists as a rule lay sufficient stress on its value. In our work in the military hospitals it was part of the routine examination to take a drop of blood as one does for examination for the malarial parasite and examine it fresh in every case. From the fresh blood we can learn so much: (1) we can determine the presence of the malarial parasite; (2) whether or no there is any leucocytosis, at least whether there is any marked leucocytosis; (3) the general character of blood, that is, approximately by the color of the red cells, any great diminution of hemoglobin, any poikilocytosis, fibrin formation, etc. By the examination of the fresh blood, while except in malaria and luekemia we cannot make an absolute diagnosis — it serves as a very valuable guide board directing our attention toward certain things. Thus if we have a leucocytosis and marked fibrin formation it suggests the possibility of a pneumonia, and we naturally make a careful clinical examination. We might possibly have in a case where leucocytes are increased an otitis media, a cerebro-spinal meningitis, or some other disease which a careful systematic examination will reveal, but the great value of it is that it stimulates and directs us to look and keep looking for the trouble. If we have no leucocytosis, no malarial parasite, and a continued fever, we naturally have suggested a typhoid, so, in brief, it is an exceedingly good guide board, directing our energies to a correct diagnosis.

The method used in performing "Widal's test" was chiefly that by dried blood. The technique was the same as that used in the Army Medical Museum by Major-Surgeon Walter Reed, United States Army, Pathologist to Army Medical School, and his assistants. Upon starting my work at Fort Myer, I looked about and tried various techniques, and found that used by Dr. Reed to be best adapted to work in a general hospital, and giving excellent results. I carried along for some time the fluid serum method, dilution 1–10 and 1–20, with dried blood of the same patients, but the dried method was so much more easily done and the results so satisfactory that the fluid serum method was abandoned. It was in fact impracticable to carry along the examinations in such a large number of cases by the fluid method under the conditions existing there.

Dr. Reed's method.— Glass slides were used for collecting the blood instead of filter paper. These slides were labelled with patient's name, ward, date, etc. The ear was pricked by a surgical needle and three or four drops of blood placed on the slide a distance apart. These drops were allowed to dry a few hours to a day before being examined, as a rule. When dried, the edge of the drop was covered with distilled water by means of a platinum loop, and a watery extract of blood made on the slide by stirring with platinum needle, as one would mix a color on a painter's palette. The drop of water should be tinged a faint yellow; a drop of twenty-four-hour bouillon culture of bacillus typhosis is placed on a cover-glass and then a drop of the same size of this faintly yellow-tinged watery blood extract mixed with it (of course the platinum needle is sterilized in the flame at every step). This cover-slip is then inverted over a hollow slide, which has had the edges of the ring surrounded by a thin layer of vaseline. The hollow slide is numbered with a number corresponding with the one on the original slide containing the blood specimen, and the time of mounting noted also on the slide with a glass-marking pencil. The time limit is one hour, though the reaction, if it occurs, does so almost invariably in less than half an hour.

This method has the advantage of being a rapid and also a severe test. After a year's work and over 1,500 Widal tests by myself, I have never once obtained a reaction by this method that did not also give it with a dilution of at least 1–30 by the fluid serum method. Of course I did not do all the positive cases by the fluid serum method, but in a number of cases, where there was any doubt expressed as to diagnosis, I did the fluid method also, and in none of these cases did I fail to get a reaction in a dilution of 1–30 up. In hospital practice the slide has an advantage too, in that one may place a drop covered by a cover-slip for fresh-blood examination on the same slide, and, as I have stated above, learn a great deal from it. As an illustration, a request was made by a ward surgeon to me last fall while in charge of the laboratory at Fort Myer, for examination of the blood of a patient, a soldier, for malaria. Clinical diagnosis: Typhoid fever with malaria. This man was convalescing from typhoid, and had a rather sudden attack of chills accompanied by fever. Examination of the blood was negative for malaria, but showed a very marked leucocytosis. This suggested some acute infection, so I visited the ward, and upon examination found the man to have an acute follicular tonsillitis. Another case, similarly reported, was found to have an exudate on the tonsils extending up on the soft palate. Bacteriological examination showed the diphtheria bacillus.

If the slide is placed over a white surface while mixing the blood, one can readily detect the faint yellow tinge. It takes some little practice, but one soon learns to judge the right color. I tried several ways of estimating the amount of blood in the drop, in order to get somewhere near exactness in dilution, but was unable to find any method by which a large number of cases could be examined satisfactorily. There was some objection to every one. I did try taking up the blood by a platinum loop from the drop of blood hanging on the ear and transferring it to the slide, and then mixing the blood with water, using the same sized loop and placing drops of water around the blood drop and then mixing. If we could always get the same sized drop of blood we could then get a fairly exact dilution, but it is an almost impossible thing to do. I believe the method described as Dr. Walter Reed's is the most practical and satisfactory.

Results. — First, percentage of cases in which the Widal reaction occurred — 445 cases in which the final clinical diagnosis was typhoid fever. In this series I will only consider those cases which we had in the hospital during the acute part of the disease, that is, while they had fever. We received many from distant camps and civil hospitals, when they were convalescent and able to travel. These 445 cases represent those whose blood I examined during their illness at the general hospitals at Fort Myer, Va., and Savannah, Ga.; 353 came from the Second Army Corps from Camp Alger, 42 from Jacksonville and Knoxville and 50 from the camps about the general hospital at Savannah, Ga. Some of the diagnoses I am sure were not correct. The exclusion of these would bring the per cent. of positive results higher.

Out of these 445 cases, 417 gave a positive Widal test, 28 gave a negative result. In other words, 94 per cent., that is, practically 94 per cent., were positive and 6 per cent. negative. Of these 28 cases, only 13, which were examined two or more times, could be considered as probably typhoid fever. Of the other 15, seven were clearly not typhoid, and the remaining were examined but once. There was no good reason why the diagnosis of typhoid fever was allowed to stand in any of these latter cases. Taking out the seven cases clearly not typhoid, we have 21 negative and 417 positive results. This is certainly only fair. I might add to this that many undoubted typhoids did not have their blood examined, owing to the large amount of work on hand at the time. These were among the Camp Alger cases last summer, at a time when every medical officer at Fort Myer had all the work he could possibly attend to, and typhoid cases were being admitted daily in large numbers, so that the doubtful cases were given the preference in the examination. Undoubtedly if all typhoids could have been examined the positive percentage would be considerable more even than 95 per cent.

Negative side.— Of the 21 negative cases entered on the hospital register as typhoid fever and showing negative result to Widal, two cases died, one after severe hemorrhage and the other after severe diarrhea and cerebral symptoms; upon the latter case I performed a post-mortem. This is a most interesting case. This man, Catherman, private in Twenty-Second

Kansas Volunteer Infantry, came into hospital from Camp Alger with continued high fever, diarrhea, tympanitis, etc., apparently a typical typhoid; mental symptoms developed and there was low delirium, etc. His blood, examined many times for Widal, was negative; negative also for malaria and for leucocytosis. Blood examined the last time twelve hours before death with negative result. At post-mortem, typical typhoidal ulceration of ileum, corresponding to about end of third week; acute splenic tumor and acute mesenteric lymphatic hyperplasia. The typhoid bacillus was recovered from his spleen. I tried both his dried ante-mortem blood and his post-mortem blood with his own bacillus with negative results. The bacillus recovered from his spleen was agglutinated by all the specimens of typhoid blood I had. It behaved just the same as the stock culture, a culture obtained from the Army Medical Museum in Washington. I also tried his blood with a culture of the colon bacillus, obtained from Dr. Reed, of the Army Medical School, with negative result. This man also had pemphigus with his typhoid. Whether or not this would modify the reaction I do not know. I was unable to open the head of this case. The other bacteria were obtained in cultures.

The case of death due to hemorrhage was without doubt a typhoid, too. The last examination of blood in this case was, however, made some time before his hemorrhage. In connection with this case, it is interesting to relate our experience with the Widal in three other cases in which hemorrhage of the bowel occurred in course of typhoid. One, a soldier of the Ninth Massachusetts Volunteer Infantry, at Fort Myer, had typical symptoms of typhoid. Repeated examinations of blood showed negative Widal and negative malaria. Last examination, day before intestinal hemorrhage, was negative. The evening of the same day, after patient had severe hemorrhage, his blood gave a very prompt and marked Widal. This attracted my attention to such cases, and I found the same thing occurring in two others.

In addition to these 417 cases of typhoid in which the Widal test was obtained, I have the record of considerably over 500 cases of diseases other than typhoid in which the Widal test was made. In many of these cases the diagnosis was clear at the time the test was made. In others the test was made as part of the routine work for diagnosis. Of these 500 cases a small number gave Widal, but in every one of these positive cases a clear history of typhoid was obtained, save in one case; our negative results were therefore practically 100 per cent. Even in this case there might have been a mild typhoid in Cuba, instead of a malarial attack. The list includes many malarias, also small-pox, chicken-pox, amebic dysentery, yellow fever, meningitis and pneumonia.

Time of reaction.— I have not had the opportunity to go over and analyze carefully every case, and in many instances it is hard to fix the date of the beginning of the disease, but on the average the reaction appeared rather later than the time usually given by most observers. While we had four on the fourth day, and many between the seventh and tenth day, still, as many, I think, as 50 per cent. did not show reaction till the fourteenth day. In a number of cases it was the third week, and in several not until a relapse had occurred.

Persistence of reaction.— This, also, I have not had time to study sufficiently, but I can say this, that the reaction does persist for a long time after convalescence in a considerable percentage of cases. I have record of one case showing marked reaction after three years, two after two years and as many as six from nine months to one year, and a number three to six months. In one case, with a history of typhoid sixteen years before, while there was not a complete reaction, there was marked clumping.

The first case referred to above, that is, the one showing reaction three years after the disease, illustrates how sometimes this Widal reaction may mislead us. This man, W., private in Second Louisiana, was admitted to Savannah General Hospital in March. He came from a regimental camp two miles away. Upon admission he had high temperature, greatly distended abdomen, with history of fever and diarrhea for some days. Blood showed marked Widal; also marked leucocytosis. The blood examinations and physical signs led to the diagnosis of typhoid, and perforation of typhoid ulcer and general peritonitis. At autopsy no typhoid lesions were found, but extensive tuberculosis of both lungs, tubercular ulceration of intestines, cheesy mesenteric glands, etc. There were small tubercles on peritoneum over intestinal ulcers. The case was one of perforation of tuberculous ulcer. This seemed strange until a history of long-continued severe typhoid fever three years before at New Orleans was obtained from his brother. I had several times found the reaction when the patient presented typical malarial symptoms among soldiers who had been in the Santiago campaign, and then had typhoid at Montauk or some other camp. These men were very susceptible to malaria, and in several instances they showed at the same time the Widal reaction and the presence of the malarial parasite. These cases emphasize the necessity of a careful history and clinical examination, together with the blood examination.

Mixed infections, typhoid and malaria.— It is hard to find a term fitting to this condition, in which we find malaria complicating typhoid fever. The term "typhomalaria" is absolutely unfit and an unscientific term. We have no such disease as typhomalaria. It is a typhoid fever, in which generally during convalescence the malarial parasites appear in the blood, either as a recurrence of an old malaria, which existed before the typhoid, or as a fresh invasion of the malarial parasite, the patient at the time being in a malarial country.

We have met in our investigation 12 cases in which both the malarial parasites were found in the blood, and at the same time the Widal reaction was obtained. In but one of these cases was the malarial parasite found in the course of the fever of typhoid. This case is of unusual interest, and I will refer to it later. I have the temperature chart, which I shall be glad to show any members of the Association. In eight of the cases the malarial parasites appeared with accompanying symptoms during the convalescence. In the remaining three cases the soldiers had had typhoid from two to six months previously to the malarial attack. At the time that the blood of these cases showed the malarial parasite it also gave the Widal. These cases, of course, do not come under the head of mixed infections, but their mention serves to illustrate a possible source of error in cases reported as mixed infections, simply because the Widal was obtained at the same time that the malarial parasite was found in the blood. In eight of these cases of "mixed" infection the malarial parasite occurred during convalescence only. In the other case the parasite was found both in the first week of the disease and on the eighteenth day of normal temperature, during convalescence. All these men came from Cuba, and had had malaria there. The earliest period that the malarial attack occurred during convalescence was on the fourteenth day of normal temperature: one case on the seventeenth day, one on the eighteenth day, one on the twenty-second day, and the others at varying intervals from one to two months after the temperature had reached normal. The case in which the parasite occurred during the acute stage of his typhoid deserves special mention. This soldier, a man about twenty-seven years old, native of Massachusetts, a first-class private, Signal Corps, United States Army, was in Cuba with Fifth Corps during the Santiago campaign.

History: He had chills and fever at Santiago, July and August, 1898; came to Montauk Point, and then to the command at Fort Myer about November 1st. On November 17th he had a chill and sharp rise of temperature. Blood examination showed double tertian (two crops of tertian malarial parasites — one mature, one half grown). His temperature reached normal on the 18th, but on the 20th the temperature was 100°; the temperature rose to 103° on the 22nd. Blood examination showed the estivo-autumnal parasite on this day; no tertian parasites; Widal negative. Blood was examined daily. The estivo-autumnal parasites (ovoids, crescents and round bodies), were found in gradually lessening numbers until the 27th day of November, that is, up to the eighth day of continuous fever; then they disappeared. The temperature came down to normal after nineteen days of fever. The highest point recorded on temperature chart was 104°, on November 27th. After repeated examinations for Widal, a positive reaction was obtained on the twenty-fifth day of the disease (after the temperature had been normal nearly a week). The man's temperature remained normal until December 26th, when he had a sharp chill, the temperature rising to 106°. The temperature fell to normal, but was followed by another chill and rise to 103.4° on the next day. Examination of blood showed double tertian (two crops of the malarial parasite). This first chill occurred after eighteen days of normal temperature.

In these nine cases the malarial infection was in five single tertian, in two double tertian, and in two double tertian and estivo-autumnal.

We have found malaria complicating or rather recurring during the convalescence from other diseases, and even in surgical cases. There appears to be no connection between typhoid and malaria other than that an attack of typhoid fever, by lowering the individual's resisting powers, gives favorable soil for a recurrence of his malaria, or affords a suitable condition for a fresh invasion by the malarial parasite. Probably careful investigation would reveal the fact that convalescents from diseases other than typhoid show quite as large a percentage complicated by malaria.

Blood examinations in the malarial fevers.— I regret that the time will not permit an analysis of these cases of malaria. In the series of malarial bloods examined (something over 300 in number) I failed to meet the quartan parasite. The double tertian occurred more frequently than is given in Thayer's report of his cases; also the combination of tertian and double tertian with estivo-autumnal were more frequent than is given in the same report of the malarial fevers of Baltimore. These cases all occurred among soldiers who had served in Cuba.

It was remarkable that certain districts, those of Santiago and the south coast, furnished nearly all the cases of estivo-autumnal fever, while the cases from Havana Province were nearly all of the tertian variety. We had many cases of tertian fever from Cuba, which were very resistant to quinine. One soldier, a hospital steward, on service at the United States General Hospital at Savannah, Ga., who had served in Cuba for some time, had five attacks during the three months he was stationed at that post. Each time the blood examination showed the tertian parasite. The man kept upon his feet, but took quinine quite regularly. After the fifth attack he was ordered to bed for a week, and with the combination of rest and quinine, there was no recurrence after one month. Several other similar cases came under my observation while at Savannah.

I wish to speak, in connection with malaria, of a stain which I have found very satisfactory. It is the writer's modification of the stain given by Thayer in his book. The great difficulty in staining the malarial parasite has been to get the parasite stained with the methylene blue not too strongly, and in such a manner that the pigment granules will stand out distinctly, and at the same time to have a good eosin stain in the red cells and in the eosinophilic granules. It is difficult to strike the happy medium, as all who have tried it well know. The method is that used by Thayer, namely: Stain with one-half per cent. of eosin in 70 per cent. alcohol two minutes, contrastain with saturated aqueous methylene blue or with Löffler's alkaline methylene blue for half a minute, with the additional step of washing specimen, after staining with eosin in a weak solution of acetic acid (about one-fourth of one per cent.) and then in water. The washing in dilute acetic acid seems to have the property of intensifying and setting the eosin stain so that there is no intermingling of the blue and red, and of preparing the parasite to receive a very delicate blue stain, in which the pigment granules stand out as distinctly as in the fresh blood.

We have found very satisfactory for ordinary work for a fixative of dried blood cover-slips a method which appeared some months ago in the *Johns Hopkins Bulletin*, namely, immersion in a one-per-cent. formalin solution in 90 per cent. alcohol for one minute. By this method of staining above described the red cells are stained beautifully.

In dried films of estivo-autumnal blood, using this stain, it will be seen quite clearly that the crescent, even in the degenerative stage, almost always is surrounded by at least a remnant of red cells.

Since completing this paper, I have had opportunity to look over the records of some 52 cases of malaria occurring on my service at Savannah. The study of the last 52 cases of malaria occurring among the soldiers sick at the United States General Hospital, Savannah, Ga., during the past three months is extremely interesting. All these men came from Cuba since March 10th. Some had only been there a couple of months; others for six months or more. Out of these 52 cases, 24 were single tertian, about

48 per cent., 10 were double tertian, nearly 20 per cent., 16 were estivo-autumnal, 32 per cent., one was estivo-autumnal and tertian, and one was estivo-autumnal and double tertian, 4 per cent., and among these, four showed the Widal at the time the malarial parasite was found. In two of these the parasite occurred during the convalescence from their typhoid, one on the fourteenth and one on the eighteenth day of normal temperature. The other two cases had had typhoid two and four months previously.

I hope I have brought before you clearly the great value, and, in fact, the necessity of careful systematic examination of the blood in obscure fevers, by not only the Widal method but also by that of the fresh blood. The greatest care is taken to furnish good operating sets and good operators to every camp, but when we compare the mortality from surgical cases and that from camp fevers (preventable fevers if early recognized), it must be admitted that even the surgical sets and the expert surgeons are not any more important to the army than the bacteriological set and the expert hematologist.

In conclusion I wish to acknowledge my indebtedness to General Sternberg, Surgeon-General of the Army, not only for permission to use the army records but for his personal encouragement in this work, and the opportunities he has given me for study. I also wish to thank Major-Surgeon Walter Reed, Pathologist to Army Medical Museum and President of the Army Typhoid Investigation Board, and the commanding officers of the United States General Hospitals at Savannah, Ga., and Fort Myer, Va., Major-Surgeons, United States Army, Drs. D. M. Appel and Wm. B. Davis.

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THE PHENYLHYDRAZIN TEST FOR SUGAR IN THE URINE.

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So many and so varied are the statements made in the text-books in describing this important test for sugar, that an attempt has been made in this paper to bring order out of chaos. As a reagent, both for laboratory and clinical work, phenylhydrazin possesses exceptional value and advantages — not only on account of its delicacy, but, as will be subsequently shown, as a positive test for the detection of sugar in the urine, even when present in minute quantities. As is well known, the reducing sugars possess the following chemical properties, which, although well marked, yet other substances are present at times in the urine which possess one or more of these properties, and thereby give rise to confusion:

(1) In alkaline solutions they reduce the salts of certain metals to their oxides, suboxides or the metals themselves — such as copper, bismuth and silver. This is shown in Fehling's, Trommer's, Nylander's and the silver tests.

(2) They decolorize and deoxidize solutions of indigo blue.

(3) They undergo fermentation with yeast — some of them, it is true, with difficulty.

(4) They turn the plane of polarized light either to the right or the left.

(5) They form with phenylhydrazin definite crystalline compounds possessing a fixed formula.

It is upon one or more of these properties that the clinical and laboratory tests for sugar depend.

Phenylhydrazin ($C_6 N_5 — HN — NH_2$) is derived from the group $H_2 N — NH_2$ by the substitution of a phenyl radical for one of the hydrogen atoms. It is strongly basic, and unites with acids to form salts, of which the best known is the hydrochlorate. It is but sparingly soluble in water, but readily soluble in acids, alcohol and ether, and combines with aldehydes to form hydrazones, and with sugars to form osazones. It reduces Fehling's solution in the cold with the evolution of nitrogen.[1] It was first brought to the notice of the medical profession, as a test for sugar, through the researches of E. Fischer.[2]

In order to test the delicacy of this reagent, and also to ascertain if it formed crystalline compounds with other basic bodies in the urine, so as to interfere with its accuracy, the following experiments were undertaken: One-half gramme each of the following carbohydrates was taken, dissolved in a test-tube in 10 cubic centimetres water, and to each solution was added one-half gramme sodium acetate and one-tenth gramme phenylhydrazin. They were all heated for one hour in the water bath, and allowed to cool, with the following results:

TABLE I.

Substance used.	Amount of precipitate.	Color of precipitate.
Lactose.	Heavy crystalline.	Yellow.
Glucose (dextrose).	" "	"
Levulose.	" "	"
Maltose	Large "	"
Saccharose (cane sugar).	Small "	"
Glycogen.	Slight amorphous.	Dark brown.
Potato starch.	Very slight (amorphous).	Light yellow.
Amylodextrin.	" " "	" "
Soluble starch.	" " "	" "
Inosite.	Slight.	" "
Control blank (phenylhydrazin and sodium acetate.	No.	

Under the microscope it was seen that some of these possessed a definite crystalline form, as tabulated.

TABLE II.—CRYSTALS.

Substance used.	Description of crystals.
Lactose.	Yellow needle-like crystals radiating from a centre.
Glucose.	Sheaves of long yellow needles.
Levulose.	Very long yellow needles, irregularly grouped.
Maltose.	Broad, radiating yellow flakes.
Cane sugar.	Very small fine needles and spicules.
Glycogen.	Dark-brown oily globules.
Potato starch.	Nothing.
Amylodextrin.	A few oily globules.
Soluble starch.	Nothing.
Inosite.	A few oily globules.
Control blank.	Nothing.

As will be seen from the above tables, all of the reducing sugars, including cane-sugar (which, however, will not reduce until it is split up), form definite crystalline compounds. In regard to cane sugar, it would seem at first as though the crystalline combination were due to the splitting up of the cane sugar into dextrose and levulose by the prolonged heating. However, a close study of these crystals shows that they possess a definite morphology, and in no way resemble the crystals derived from either dextrose or levulose. In spite of statements to the contrary, it seems that cane sugar does form an independent compound with phenylhydrazin, as is seen both by the form and grouping of the crystals. Although no attempt was made to determine the melting point, such a test would have undoubtedly greatly aided their identification as a separate compound.

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[1] A. H. Allen: Chemistry of Urine, p. 60.

[2] E. Fischer: Berichte den deutschen chemischer Gesellschaft, 17,579, 1884.

As dextrose (or glucose) is by far the most important of these sugars, and is what is meant in medicine by the generic name of sugar, the delicacy of the reagent with this carbohydrate was next determined, with the following results (amount used in each case was 10 cubic centimetres):

TABLE III.

Percentage.	Appearance of precipitate.	Crystals by microscope.
1	Very heavy.	Crystals.
0.1	Heavy.	Crystals.
0.01	Slight.	A few crystals.
0.001	Very slight.	Very few crystals, but well defined.
0.0001	No.	No crystals.

From the above it is evident that the limit of the delicacy of the test is about 0.0001, but this limit far exceeds that which would be necessary for practical purposes, as so small an amount of sugar in the urine has no clinical importance. The writer had occasion to examine a suspected urine for sugar in which Fehling's test was doubtful. Nylander's test gave but a faint brown coloration after standing, while phenylhydrazin gave well-defined crystals.

For the proper recognition of these crystals, and of the sugars from which they are formed, much stress has been laid upon their melting points. This, however, is of minor importance, because, as has been shown, the combination of each sugar with phenylhydrazin forms crystals which in every case have a definite morphology, and therefore each sugar can be recognized by these crystals alone without reference to their melting points. As applied to the urine, this would be of great clinical value. As it is well known that basic or other substances might occur in the urine which interfere with the usual clinical tests for sugar, the following substances were also tried with phenylhydrazin in the proportion that they exist in the urine.

TABLE IV.

Name.	Precipitate.
Urea.	None.
Uric acid.	Slight, a few oily globules.
Hippuric acid.	None.
Kreatinin.	None.

Neither the above bodies nor xanthin gives rise to crystals; the only substance that might cause confusion is glycuronic acid, which in alkaline or neutral solutions gives a yellow crystalline compound resembling phenylglucosazone, but whose melting point is lower. In von Jaksch's modification of the test in an acid solution, there is found only a brown resinous mass. This substance not only reacts positively with Fehling's solution, but also reduces bismuth and silver in alkaline solutions and is dextrorotary, but, however, it does not undergo fermentation with yeast.[8] This shows that we have in phenylhydrazin a reagent of great accuracy and delicacy, which not only enables us to detect sugar with certainty, but even to determine the kind of sugar present. Nothing else occurs in the urine, except the sugars, which gives rise to these crystalline compounds, each of which has a definite form and a definite melting point.

Outside of the sugars, Fehling's and Nylander's tests are interfered with by the following bodies — either existing in the urine as such, or following their ingestion. The principal ones are as follows:

Fehling's test. — Chloral, chloroform, sulphonal, glycosuric, hippuric, salicylic, benzoic, glycuronic and uric acids, kreatinin, kreatin, xanthin, pyrocatechin, hydrochinon, albumin.

Nylander's test. — Albumin, free sulphuretted hydrogen, rhubarb pigment, melanin, kairin, glycosuric and glycuronic acids, turpentine, quinine, eucalyptus, and the presence of large amounts of uric acid.

To apply the phenylhydrazin test to the urine, take 25 cubic centimetres urine in a small beaker, add one gramme phenylhydrazin and two grammes sodium acetate. Heat over the water bath from thirty minutes to an hour, and then cool by plunging the beaker in cold water. A yellow crystalline deposit is thrown down, which on examination by the microscope is found to consist of the yellow crystals of phenylglucosazone if this sugar be present. The reaction takes place according to the following equations:

$$\underset{\text{glucose}}{C_6H_{12}O_6} + \underset{\text{phenylhydrazin}}{NH_2 - NH.C_6H_5} =$$

$$\underset{\text{glycose-phenylhydrazone}}{C_6H_{12}O_5 - N_2H.C_6H_5} + \underset{\text{water}}{H_2O}$$

$$\underset{\text{glycose-phenylhydrazone}}{C_6H_{12}O_5 - N_2H.C_6H_5} + \underset{\text{phenylhydrazin}}{NH_2 - NH.C_6H_5} =$$

$$\underset{\text{phenylglucosazone}}{C_6H_{10}O_4 - (N_2H.C_6H_5)_2} + H_2O + H_2$$

From the above equation it will be seen that an excess of phenylhydrazin must be present in order that the crystals may be formed.

The experiments set forth in this paper seem to justify the following conclusions:

(1) Phenylhydrazin forms with the reducing sugars, crystalline chemical compounds, each having an individual and definite morphology.

(2) Albumin need not be removed.

(3) It is possible to recognize any of the sugars by their crystalline forms alone, with recourse to their melting points.

(4) Substances that interfere with Fehling's or Nylander's reagents do not interfere with this test, or form anything that would in any way be misleading.

(5) The test is an extremely delicate one, and of undoubted accuracy.

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Clinical Department.

AN INSTANCE OF URTICARIA OCCURRING AS AN INITIAL RASH IN TYPHOID FEVER.

BY FRANK WOODBURY, M.D., PHILADELPHIA,
Associate Professor of Laryngology, Philadelphia Polyclinic, etc.

ON April 10th I was called to see Mr. L. R., married, forty-three years of age, by occupation a special officer of one of our principal hotels, who gave the following history of his illness: He had been in his usual health and, in fact, felt perfectly well until five days before I saw him. As the weather had changed and become cool during the preceding day (April 4th), he thought it advisable, merely as a matter of precaution, to swallow two quinine (two grains) pills on going to bed, to ward off a possible cold. He had had no unusual feelings on that evening or during the night that he could think of, except that he was very thirsty and had drunk water several times before going to bed. The next day (April 5th) he took two more quinine pills. Later, as he was constipated and had headache, he took a bottle of citrate of magnesia solution and, in the evening on going to bed, he supplemented this with another bottle, which operated freely in the morning, but his headache continued. During the next three days he had no evacuation of the bowels and his headache increased and became associated with neuralgia of the right side of his face. He also had pain in the lumbosacral region, for the relief of which he applied a belladonna plaster. He gave up work (April 6th) four days before I saw him. He had not been losing strength for a few weeks, nor did he have epistaxis.

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[8] Halliburton: Phys. and Path. Chemistry, p. 793–4.

I found him lying in bed suffering with dull headache and neuralgia of the face. He also complained of pain in his back, and was still wearing the plaster. He had been very restless and had no sleep the night before. His skin was hot, dry and dusky, or slightly jaundiced. His temperature was 103°, pulse 120, respiration 24. He had no cough. Examination of the lung was negative, except that a few mucous râles were found posteriorly. Heart sounds normal. Intelligence perfect; no hebetude and no delirium. When questioned directly with regard to chills, he stated that he had the day before experienced some chilliness, but no decided rigor and no sweating. He thought that he had had an attack of intermittent when he lived in a malarial neighborhood some six years before. Two years previous to present illness, he had suffered with an attack of influenza, lasting a week or ten days. He had never previously had typhoid fever. His general strength and appetite, as already intimated, had been good and unimpaired until April 5th.

I ordered capsules containing three grains acetanilid and two of quinine hydrochlorate, to be given every two hours, and also a fever mixture of citrate of potassium, solution of ammonium acetate and syrup of red orange, on the alternate two hours, during the day. At ten o'clock at night he was given two grains of calomel with bicarbonate of soda (triturated), with directions to take a Seidlitz powder in the morning. He also was directed to have the entire body surface sponged with cool water at night. Diet restricted to tea and broth.

The next day he was better. He had enjoyed a few hours' sleep during the night. The bowels were moved twice in the morning, the discharges being light colored and in consistency like gruel. His temperature was not taken until afternoon, when it was again found to be nearly 103°. His tongue was less coated, but there was a distinct dryness towards the tip, suggesting the wedge-shaped dryness of typhoid fever. Upon examination no eruption was detected upon the skin. The abdomen was rather scaphoid and not tender. Liver dulness not increased, splenic area moderately extended. No pulmonary complications. He was advised to have the belladonna plaster removed, and the use of a little coal oil was suggested to clean the plaster from the skin. The medicines of the day before were continued, with the exception of the calomel at night. A specimen of blood was taken from the lobe of his ear for examination for the Widal reaction. Examination of the urine only revealed excess of urates and coloring matters, with deficiency of water, no albumin.

On the following day he was found covered with an eruption of urticaria, from which he had suffered all night, the wheals appearing principally on the trunk, thighs and arms. The fever temperature continued (102.5°), but his general condition seemed to be improved in spite of the irritation of the skin. Sponging with a solution of sodium bicarbonate was ordered, and a sulphonal powder (10 grains) given at night. In the morning he reported having had a better night, although some characteristic wheals could still be seen upon his body, which, however, disappeared during the day. A few, small, rose-colored spots, disappearing upon pressure, were found upon the anterior surface of the body, after diligent search. The bowels were moved once or twice daily, the stools soft, liquid, and light yellow in color, presenting a typhoid appearance. On the 13th, a report was received from the Bureau of Health Laboratory of Hygiene, stating that the test made of the blood "did give the typhoid reaction."

During the next two days he was kept upon a milk diet, and took beta-naphthol (three grains) every three hours, and had frequent cold sponging of the body. He was feeling much better, but, as the sickness was likely to be of some weeks' duration, it was thought best to have him admitted into the Pennsylvania Hospital (April 15th), where he received most careful and skilful treatment from Dr. F. A. Packard, attending physician, and Dr. C. F. Mitchell, resident, to whose courtesy I am indebted for the subsequent notes of the case: On admission, his temperature was 102°, pulse full and strong, face flushed, tongue coated, moist. Complained only of headache and weakness. No hebetude. Abdomen not distended or tender. Liver dulness normal. Splenic dulness increased. Few scattered enteric spots over abdomen and chest. Heart normal, sounds regular, 90. Lungs negative, respiration 24. Urine amber, cloudy, acid, 1.030, trace of albumin, no sugar, a few hyaline casts.

The treatment ordered was beta-naphol, three grains every four hours, with a cold bath when the temperature was 102° or over. April 17th the spots upon the abdomen were more developed. The Widal test was again positive. The subsequent course of the disease was that of an ordinary uncomplicated case of typhoid except that frequent soap and water enemata were required to overcome the constipation. Throughout the entire course of the illness there were no head symptoms. The daily temperature remained near to 102°, until the 28th, after which it gradually settled to the normal (on May 2d). He had twelve baths altogether while in the hospital. He was allowed to sit up on May 10th, and five days later was discharged cured. Since then his health has been excellent and he has gained largely in flesh. When he left the hospital his weight was one hundred and thirty pounds; it is now one hundred and eighty. He cannot recall ever having had an attack of urticaria previously.

This case appears to be one in which the typical typhoid rash was preceded or ushered in by acute urticaria. Similar cases have been recorded in medical literature, but they are of sufficiently rare occurrence to justify the publication of the brief history of this case, which also possesses some interest from a diagnostic point of view, as it at first presented the appearance of infection by grippe or malaria. It is barely possible that the hives may have been, after all, only *urticaria medicamentosa*, either due to the administration of acetanilid and quinine, or the local use of coal oil, but either supposition is more remote and improbable than the assumption that the urticaria was in this case simply the initial rash of the typhoid fever.

A CASE OF SUPER-ROTATION.

BY A. F. WHEAT, M.D., MANCHESTER, N. H.

Super-rotation, although not a rare thing, is still sufficiently so to be worthy of mention, especially in a case like this, where the opportunities for observation were so favorable for diagnosis.

Mrs. R., thirty-five years old; height, four feet, eight inches. F. H., mother of patient, had four successive deliveries with forceps. A cousin on mother's side had one delivery with forceps.

History of previous labors. — Seven years ago, nine-and-one-half-pound boy, three days in labor; five years ago, eight-and-one-half-pound girl, twenty-four hours in labor; three years ago, six-pound girl, twenty-four hours in labor; eighteen months ago, two-pound boy, born at eight months, having only two pains.

November 1, 1897. Patient had bearing-down pains for several hours, and she thought she was in labor, but nothing came out of it. This was the result of doing a heavy washing.

December 11th, noon. Pains began in earnest. External palpation showed a right position, breech at fundus. Fetus could be plainly mapped out. Fetal heart, 140, to right of and below umbilicus. Head not engaged at first visit; os size of twenty-five cent piece; membranes unruptured; pains regular, about every five minutes, lasting two to four minutes.

Nine P. M. Pains of bearing-down character and lasting longer; os size of fifty-cent piece; head fairly well engaged; pains continued good; os dilated very slowly; membranes bulging but very little. At midnight head was well engaged; os two-thirds dilated. From this time on there was no gain. Pains were excellent and patient worked well, but no further progress was made. Position was still a right one. At five A. M., under chloroform anesthesia, forceps were applied to a high O. L. A., the head having rotated to that position, though palpation still showed back for fetus to the right. Membranes were ruptured just before putting on forceps, and the application was rather difficult. Extraction was easy, and the head was shelled out with the finger in the rectum. External restitution was to the right. Cord was twice around the neck. There was a quarter-inch tear of the perineum.

Weight of the child, a girl, was eight and one-half pounds. Cord was of average length. The caput succedaneum was that of a right position, the head being moulded considerably.

This case is of interest, owing to the certainty with which the diagnosis was made of the position. The super-rotation is attributed to the exertions of the patient during the last four hours previous to the application of forceps; to the arrest of descent of the head, the latter being due, perhaps, to the relative shortness of the cord, and also to the disproportion between the head and the size of the maternal parts, that is, a large fetus and a small pelvis. No pelvic contraction was made out, but no accurate measurements were made.

Medical Progress.

RECENT PROGRESS IN THERAPEUTICS.

BY ELLIOTT P. JOSLIN, M.D., BOSTON.

(Concluded from No. 20, p. 498.)

GELATINE IN THE TREATMENT OF ANEURISMS AND HEMORRHAGES.

Lancereaux, of Paris, in the fall of 1898, published a new method of treating aneurisms by means of subcutaneous injections of gelatine. Though the method is still in an experimental stage, and I therefore do not recommend its general use, still either in the treatment of aneurisms, or more likely inoperable hemorrhages, it seems probable that gelatine will play a considerable rôle in the future. Futcher[8] reports four cases of aneurism treated in this manner from the medical wards of the Johns Hopkins Hospital. The method is as follows: 250 cubic centimetres of a two-per-cent. solution of gelatine in normal sterilized salt solution are injected into the thigh under aseptic precautions. The injection should always be made at a considerable distance from the aneurism, and the interval of time between injections should be from two to fifteen days. Lancereaux states about twenty injections are necessary to produce a cure, and he reports a large percentage of cures from a considerable series of cases. The saccular dilatations of the aorta or other vessels constitute the favorable cases for treatment.

The beneficial effect is supposed to be due to increased coagulability of the blood. Laborde claims that it is not, and Camus and Gley have found that there is no increase in the coagulability of the blood after intraperitoneal injections of gelatine in rabbits.

The first of the Johns Hopkins cases was a man with saccular aneurism of the arch of the aorta. He received six injections — two of the two-per-cent. solution and four of a one-per-cent. solution, because it was found that the first gave considerable pain. This pain was very intense, and most severe about six hours after the injection. The patient appeared to be doing fairly well, when he was suddenly seized with an attack of dyspnea, coughing and profuse hemorrhage, and died. At the autopsy there was found a general dilatation of the arch of the aorta, with a localized saccular dilatation about the junction of the transverse and descending portion of the arch. At the point of pressure of the sac on the left bronchus there had been a perforation causing hemorrhage and death. There was no deposition of fibrin on the sac wall.

The second case was a man with aneurism of the descending portion of the thoracic aorta. After 28 injections there was very marked diminution in the amount of pain and the pulsation appreciably lessened. During the treatment the patient gained nineteen pounds in weight and was the most satisfactory case of the four.

The third case at the time of writing had had 16 injections with little or no evident improvement; the fourth similarly 21 injections.

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[8] Johns Hopkins Bulletin, vol. x, No. 98, p. 95.

Paljakow[9] convinced himself of the hemostatic qualities of gelatine by experiments on animals. In cases of copious hemorrhoidal hemorrhages, where all other well-known therapeutic measures failed, he saw a prompt effect following enemata of a 10-per-cent. watery solution of gelatine. These experiences led him to try gelatine in a gastric hemorrhage where large doses of bismuth had failed. He gave 200 cubic centimetres of a 10-per-cent. solution of gelatine three times daily with success.

In the Leipsic Medical Society Curschman[10] reported his results with the use of gelatine. The cases to which the injections were given were six with gastric hemorrhage, six with pulmonary, one with an intestinal hemorrhage in phthisis, and one with hemorrhoids. For several days in succession 200 grammes sterilized gelatine solution were injected subcutaneously or into the muscles. In 13 of these cases the hemorrhage ceased in a strikingly short time, and it seemed to him that the method was worthy of further trial.

In the discussion of Schmidt's paper on the "Early Diagnosis and Treatment of Aortic Aneurisms," Senator reported one case of aneurism of the aortic arch in which he had tried the gelatine injections with good results. Schrötter, on the other hand, at the same time stated that his results had been unsatisfactory in two cases, and Unverricht added another of a similar character, but considers that the matter deserves further study.

Gutman used with great success gelatine in a case of melena neonatorum where there was bleeding from the rectum. He gave the gelatine solution, which he prepared on the spot, by the mouth and also by enema.

THE VALUE OF ALBUMOSES AND PEPTONES AS FOOD.

Many doctors and many more yet of the laity are so much in the habit of using predigested foods that a consideration of their value is worthy of attention. Voit[11] has recently discussed the question and rightly says the worth of the albumoses and peptones depends upon the answers which can be given to the following questions:

(1) Can they be looked upon as the equivalent of albumin?

(2) Under what circumstances is their administration indicated?

The first question can be answered as follows: The artificial albumoses as well as amphopeptone are the equivalent of albumin. Antipeptone, on the other hand, has not the same value. This being the case, those so-called peptone preparations are to be preferred which contain in reality little peptone, but much albumose. However, this does not cover the whole question, since the worth of any food is commensurate with its absorption from the intestinal tract. The poorer this absorption is, just so much poorer is this food compared with another of the same value in calories. In this relation the albumoses are far inferior to the undigested albumin in meat, eggs and milk. If the former are taken in greater amounts, the result is diarrhea, and their own assimilation as well as that of the food in which they are given is still further lowered. This has been worked out by Ellinger on dogs and by Hildebrand and Bornstein on men.

Food.	Nitrogen		Loss of nitrogen in per cent. of that ingested.
	taken in the food.	lost in the stools.	
Meat powder two days	17.84 grammes	1.0 gramme	5 6 per cent.
Somatose	17.84 grammes	10.6 grammes	59.4 per cent.

But it is not the amount alone but the concentration of these albumin substitutes which is irritating to the intestine. With the albumins of an ordinary diet the change into albumoses and peptones is gradual and those formed are absorbed so quickly that the concentration is slight.

The preparations can be taken only in small amounts — for example, 20 grammes in three or four portions — and yet here digestive disturbance is liable to occur. Should this not be the case, in the course of a few weeks the patient sickens of the preparation. Twenty grammes somatose corresponds to 16 grammes albumin, which is no more than there is in 80 grammes lean meat or somewhat more than in one egg. The cost of 100 grammes albumin in form of somatose is about fifteen times that of 100 grammes albumin in the form of eggs. Consequently the first question, namely, Are the albumoses and peptones equivalent to albumin? is to be answered in the negative. These products can replace the albumin, but on account of their deficient absorption, their unpalatableness and their high price, they are far from being its equivalent.

Under what circumstances is their administration indicated? Presumably to relieve the weakened or diseased gastro-intestinal tract of the digestion of proteids. But peptonization of all the albumin ingested is not necessary for its absorption. The elder Voit and Bauer, and recently Friedländer, have shown that soluble unchanged egg and serum albumin can be directly absorbed. Apart from this fact we know that it is an error to suppose that where the gastric juice is weak or even absent albumin is not digested, since the stronger pancreatic juice takes its place. This is best shown by Czerny's dog, which lived for six years after the stomach had been removed, and by the recently published cases of total resection of the stomach. Even in cases of fever, when sub- or an-acidity rules in the stomach, von Hösslin's work has shown that the albumin is nearly as well absorbed as in the normal individual. Therefore, disease of the stomach is not an indication for predigested foods.

If the pancreatic juice fails, only 44 per cent. of the albumin is digested and absorbed. In this condition of affairs then the predigested foods are indicated, or we might add the raw pancreas to the albumin in the food, since experiments show that the digestion then rises to normal limits. But such cases are rare.

It is claimed that the albumoses and peptones protect the gastro-intestinal tract, but do they achieve this end? The work of digestion requires the secretion of the digestive juices, the absorption of food materials and the driving onward of the residue. But peristalsis is increased by albumoses and peptones, and we may even get diarrhea; the secreting cells are stimulated to increased production of juices, as Cahn has shown for the stomach, and Ellinger for the intestine, and finally the work of absorption of the artificial foods is confined to a small portion of the intestine rather than to its whole course, as is more nearly the case with the undigested foods.

There are indications for the use of these albumin derivatives, but in quite other channels than we are accustomed to see indicated. They are to be prescribed to stimulate, not to spare, the gastro-intestinal tract. They help the appetite in small doses and tend to overcome constipation; that is, they are stomachics and purgatives.

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[9] Cent. f. d. gesammt. Therap., 1899, March, p. 185.
[10] Münch. med. Wochen., No. 11, 1899, p. 370.
[11] Loc. cit., Feb. 7, 1899, p. 172.

THE CASEIN PREPARATIONS AND THE ADVANCE IN THERAPY WHICH TROPON REPRESENTS.

Heim [2] is in agreement with the ideas of Voit, but advances the subject a step further. Pure peptones will be used in medicine, he says, but little longer, and even the albumoses, which are preferable, have not the great importance for nutrition which was once accorded them. But the principle which led to the use of these concentrated food-substitutes is sound and the only question that remains is to get the proper food. Impressed with the view that in casein we have an albumin of supreme importance, Salkowski and Röhmann have investigated the casein preparations and with others have shown their usefulness. Their capability of absorption, their power to replace the ordinary albumins in the food and the agreeableness with which they can be taken for long periods contrasts strongly with the qualities of the albumoses and peptones.

The chief casein preparations are eucasin, nutrose, sanatogen and sanose. These are all easily digested and soluble. The first two represent combinations of casein with ammonium and sodium respectively, and owe their solubility to this fact. Sanatogen is formed from casein by the addition of a five-per-cent. solution of glycerine phosphate of sodium. But there is one failure which these foods as well as the peptones share in common, namely, they are expensive. For instance, one kilogramme (2.2 pounds) albumin costs in the form of eucasin nearly $3.00; in nutrose, $5.00; in Merck's peptone, $5.25; in Kemmerich's, $15.25—prices so high as to prevent the general use. With this in mind, Finkler introduced last year a new albumin preparation — tropon — which is uncommonly cheap: one kilogramme albumin in the form of tropon costs only $1.00. Tropon is made out of various animal and vegetable albumins, and is a fine mealy substance of grayish-brown appearance, odorless, tasteless and insoluble in water. This latter fact does not interfere with its usefulness. Experiments with tropon show it is well borne by the stomach and bowels in infectious diseases, in cases of persistent nausea where little food can be given, and in the convalescence from conditions of under-nutrition. Large amounts can be given without unpleasant symptoms, and patients take it for long periods without disgust. It therefore represents the enormous advance modern chemistry has taken in nutritional treatment.

ARTIFICIAL FEEDING BY MEANS OF SUBCUTANEOUS INJECTIONS.

The recently started *Centralblatt für die Grenzgebiete der Medizin und Chirurgie* has contained most excellent summaries of recent work. In the June number Bass [18] reviews the subject of artificial feeding by subcutaneous injections. These have been in use since 1869, when Menzel and Perco, in Vienna, injected various oils under the skin of dogs. Whittacker, of Cincinnati, appears to be the first in America to apply this procedure to a human being. Others experimented with the matter in a very unscientific way, so that it was not until 1895, when Leube presented his work on the subject at the German Congress for Internal Medicine, that the subject was put on a rational basis.

Albuminous bodies are not serviceable for this purpose. The native albumins, egg albumins, casein, etc., are not assimilated by the blood, and acid and alkali albumin cannot be sterilized. Albumoses and peptones act as poisons when directly introduced into the circulation, and subcutaneously are of little account because such small amounts are absorbed. In the future something may be hoped for by the use of Blum's protogen, which is a soluble, uncoagulable albumin.

Carbohydrates were injected by Leube with poor success, but Voit and Rieder introduced into the thighs from 10 to 1,000 cubic centimetres of a 10-per-cent. grape-sugar solution with very good results. But 2.6 grammes of the sugar appeared in the urine when 100 grammes (1,000 cubic centimetres of the 10-per-cent. solution) were injected. Levolose, galactose and maltose could be used in place of the dextrose, but cane sugar and milk sugar were able to be recovered almost quantitatively from the urine after being injected. Pressure and an ice bag were applied to the seat of the injection for a short time.

Fats have worked satisfactorily for subcutaneous feeding in the hands of at least a dozen physicians. Leube proved that butter fat injected into a dog enabled the animal to "put on" fat, and that the fat so put on differed little from the ordinary fat of dogs. Further, the butter so injected was completely used up in the economy. Rochemond gives the results of 500 injections on 28 patients. By a special syringe, which could be wholly sterilized, the oil could be injected so slowly (100 cubic centimetres in one-half to one hour) as to cause no pain. Abscesses, necroses and emboli never occurred. As a rule only 60 grammes were injected in any one part.

Of the three food stuffs at present, the albumins are not practicable for subcutaneous injections; the carbohydrates in the form of a 10-per-cent. solution of dextrose have been used successfully, but the fats have produced results which have claimed the unanimous praise of all who have used them. The technique is simple, for a large subcutaneous syringe may be used or a simple trochar, tube and funnel.

THE EXCEPTIONAL NEED OF PEPSIN IN THE TREATMENT OF DIGESTIVE DISTURBANCES.

Pepsin is so often recommended in diseases of the stomach, even at the present day, that the excellent summary by Cushny [14] of its therapeutic value can be appropriately inserted in this report. In alkaline solution it is inert, and in fact is rapidly decomposed, so that when pepsin and alkaline carbonates or bicarbonates are prescribed together, the effects are due to the alkalies only. Pepsin is used in therapeutics on the theory that the stomach does not secrete enough of the ferment in certain conditions. But it may be questioned whether this is true in even a small proportion of the cases treated with pepsin. The gastric juice is almost always capable of digesting proteids if it is acid in reaction. In a number of forms of dyspepsia the acid secretion is insufficient, but the ferment is almost always present in quantity, for it digests proteids out-

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[12] Therap. Monats., 1899, 489.

[13] Cent. f. d. Grenzgebiete d. Med. u. Chirurgie, June 15, 1899, p. 481.

[14] Pharmacology and Therapeutics, 1899, p. 685.

side the body as soon as it is acidulated. Pepsin is indicated, then, only in the rare cases in which the contents of the stomach acidulated with hydrochloric acid fail to digest proteids. It is very often administered in other forms of dyspepsia, and certainly does no harm, but there is no question that it is entirely unnecessary in the great majority of cases in which it is prescribed.

THE MODERN BLOOD PREPARATIONS AND THE ABSORPTION OF BLOOD-IRON.

All will agree that these preparations have enticing names, and are most ingeniously advertised, but in the first place, are they preferable to the old Blaud's pill which can be bought at the rate of twenty for a cent, and in the second place, heretical though it may be, we must ask, are they as good? Rosenstein has sought to answer these questions in the leading article of the *Deutsche medicinische Wochenschrift*[15] for April. He examined nearly two dozen varieties, and though these identical ones are not in so common use here as in Germany, still a perusal of the names is instructive because they probably serve as the counterparts of our home market: Radlauer's Hämoglobin-pastillen, Nardi's Hämoglobin, Pfeuffer's Hämoglobin-Syrup, and Hämoglobinzettchen, Hommel's Hämatogen, Fortuna-Hämatogen, Theuer's Hämoglobin-Albuminat, Dynamogen, Ferrhämin-Hertel, Dahmen's Hämalbumin, Hämoglobinum-Merck, Hämogallol-Kobert, Hämol-Kobert, Sanguinoform, Krewel's Sanguinalmedikamente, Fleischsaft Puro, meat juice, ordinary blood sausage in raw and cooked condition, Sanguis Bovinus Exsiccatus.

His conclusions based on spectroscopic examinations are as follows: Not a single one of the preparations examined consisted of entirely pure blood. All advertisements and publications which either pass over this fact or, on the other hand, make mention of the purity of the blood-coloring matter in an especial product give rise to a wrong idea in the doctor's mind regarding the composition of these medicaments, and consequently are deceptive.

But this is not all. The recommendation of blood preparations as blood-forming material rests on false conceptions. Even if the preparations contained pure blood, their effectiveness would not be increased, since the absorption of the "blood-iron" in the gastro-intestinal tract has been most emphatically denied by Voit and Cloetta. Further, clinical results do not justify their use, since their alleged action in no way surpasses that of inorganic preparations, whose absorption is an established fact.

"Blood-iron" can be administered subcutaneously, but this method is not practical, though in this instance the iron can be absorbed and retained by the system. Of late, injections of hemoglobin in physiological salt solution have been employed in place of transfusion. They are a sign of progress, because it is proven that such hemoglobin will be made use of by the organism. In contrast to this advance the recommendation of preparations of blood by the mouth is a backward step.

THE ABSORPTION OF HEMATIN AND THE IMPORTANCE OF THE HEMOGLOBIN PREPARATIONS.

Starck[16] reviews the work and calls especial attention to that done by Voit in 1892, who showed that oxyhemoglobin given to a dog was not absorbed, and to that of Cloetta, who proved that hemin, hematin and blood itself so administered underwent not the slightest absorption, but could be wholly recovered from the stools. Starck has confirmed their work by using other methods, which he describes in full. He concludes by saying: "These various hemoglobin preparations are just as little a 'perfect substitute for blood' as the blood which is poured out into the stomach in a gastric hemorrhage and is there submitted to the action of the gastric juice. No one has ever claimed that such blood was assimilated by the body. It is lost quite as much as if the hemorrhage was external."

All that has been said, it must be noticed, refers to blood-iron. Iron in combination with albumin, like Schmiedeberg's ferratin and carniferrin, is capable of absorption by the body.

Cushny[17] sums up his discussion of the matter in the following words: "The 'organic' iron preparations therefore seem to have little to recommend them as superior to the 'inorganic,' except that ferratin and carniferrin are probably more rapidly absorbed and are less liable to cause dyspepsia than many of the older salts. Where there is special difficulty in administering the more commonly used forms, these two may be substituted for them with advantage, but they seem to be unnecessary in ordinary cases."

DIABETES.

Williamson's[18] *milk for diabetes.* — As milk contains five per cent. sugar, it is only in an exceptionally mild form of diabetes that it can be included in the diet. A nourishing drink, however, is of so much value in diabetes that Williamson's suggestion of a method for removing the sugar is a welcome one. Williamson attains this end by diluting cream with several volumes of water and then allowing the fat in the same to rise to the top. The sugar remains in the watery solution. The rule is as follows: To about one pint of water, placed in a large drinking-pot or tall vessel, three or four tablespoonfuls of fresh cream are added and well mixed. The mixture is allowed to stand for twelve to twenty-four hours, when most of the fatty matter of the cream floats to the top; it can be skimmed off with a teaspoon easily, and on examination it will be found practically free from sugar. This fatty matter thus separated is placed in a glass and mixed with water. Then the white of an egg is added, and the mixture well stirred. The water and white of the egg are added in sufficient quantities to make a mixture which has the exact color and consistence of ordinary milk. If a little salt and a trace of saccharine be added, a palatable drink, practically free from milk sugar, is produced, which has almost the same taste as milk, and which contains a large amount of fatty material. With very little practice the right proportions can be easily guessed, and of course much larger quantities can be employed than those mentioned above. A drink may thus be prepared which contains a large amount of fat, and which can be taken *ad libitum* by diabetic patients, even if the most rigid diet be deemed necessary.

Lauritzen[19] has used this milk and confirms Williamson's statement that it is palatable and contains only a trace of sugar. He adds a few modifications as to its preparation. It is of little advantage to have the milk stand more than twelve hours, as the per cent. of fat in the milk thus prepared is 5.25 per cent., while in twenty-four hours it is but 5.88 per cent. It is important, however, that the milk be kept during the twelve hours in a cold place. It is not necessary that saccharine be added, and I can confirm Lauritzen's statement that the milk is preferable without artificial sweetening. To be appetizing it must be taken when freshly made, or else the cream rises to the top of the glass. If the patient is already taking too much albumin the white of egg can be left out.

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[15] Deutsch. med. Wochen., No. 17, 1899, p. 265.

[16] Loc. cit., No. 51, 1898, p. 805.

[17] Pharmacology and Therapeutics, 1899, p. 648.

[18] Diabetes Mellitus and its Treatment. Williamson, 1898, p. 334.

[19] Zeitschrift für diät. u. phys. Therapie, 1899, Bd. iii., H. III, p. 220.

I never suggest a new kind of food to a diabetic patient without being reminded of an experience I once had in recommending sardines to a boy with this disease. He was delighted at the prospect of a change in his diet, and that same night ate a whole box of sardines! and in his zealousness to follow my general advice about fat drank up all the sardine oil! He did not die, but for over a year the cathartic virtues of sardines and sardine oil were so vividly present in his mind that he could not bring himself to try them again, and so lost the advantage of a good diabetic food. Moral: In recommending a new food to a diabetic patient prescribe the amount.

A diabetic lunch. — Diabetic patients are hungry between meals, even if they are sugar free and gaining in weight. In the same way they are faint on rising in the morning. I have found the following little lunch especially serviceable at this time because it is easily prepared, is extremely nourishing (equivalent to one portion of lean beefsteak), is a stimulant, and patients take it daily without tiring of it. A tablespoonful of very thick cream is beaten up thoroughly with one egg. To this mixture sufficient coffee is added to fill a cup, and the whole is then stirred. If hot, it is very agreeable. No sugar need be added.

THE TREATMENT OF DIABETIC COMA BY SUBCUTANEOUS OR INTRAVENOUS INJECTIONS.

Weber [20] has collected 31 cases from the literature. Statistics, however, are not of much value in this connection, because the injections used have varied so much in quantity and quality. Of the 31 patients, two recovered from complete coma, five recovered from an incomplete coma, in 11 there was a transitory return to consciousness, and in 13 there was none or very slight improvement.

The real treatment of diabetic coma lies in its prophylaxis. Naunym, Minkowsky, Senator and Zinn all praise the use of alkalis in this connection. The presence of Gerhardt's ferric chloride reaction is the indication for their administration.

A Rat-trap for Plague-infected Rats. — United States Consul Heenan, at Odessa, writes: "I saw the other day a curious device attached to the mooring-rope or cable of a steamer which was loading at this port (Odessa). The cable was run through a piece of iron pipe about a foot in length, and welded on the end of the pipe was a flange, or funnel, which looked like the end of a trumpet, with the wide end facing the ship. The iron pipe was stuffed with oakum, to prevent it from slipping and also to prevent rats from passing through it. This novel construction was quite close to the ship." — *Medical News.*

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[20] Zeitsch. für diät. u. phys. Therapie, 1899, p. 54.

Reports of Societies.

NEW YORK STATE MEDICAL ASSOCIATION.

Sixteenth Annual Meeting, Held in New York Academy of Medicine, October 24, 25 and 26, 1899.

(Concluded from No. 20, p. 500.)

REOPENING THE ABDOMEN FOR POST-OPERATIVE SEPTIC PERITONITIS.

Dr. C. C. Frederick, of Buffalo, reported four cases, which brought up the question of the use of drainage, in addition to the main one of reopening the abdomen where there was general septic peritonitis. Two of these cases were, in all probability, examples of late infection from the drainage tube. Three of the four cases had been cured, and yet these four represented all the cases in which he had reopened the abdomen for septic peritonitis out of about one thousand abdominal sections.

Dr. Frederick Holme Wiggin, of New York, said that the use of the drainage tube in such cases was futile, and was dangerous because it opened new channels of infection. It was far better, even in bad cases of sepsis, to avoid drainage, and trust to the injection of saline solution into the veins or cellular tissue. The peritoneal cavity should be cleansed by the free use of peroxide of hydrogen, followed by saline solution.

Dr. Henry O. Marcy, of Boston, said that he was afraid to use hydrogen peroxide, believing that it tended to diffuse the infective material. As a substitute he made use of a 1-to-1,000 solution of bichloride of mercury, and followed this with a large quantity of saline solution.

MORPHINISM AMONG PHYSICIANS.

Dr. T. D. Crothers, of Hartford, Conn., read a paper with this title, in which he declared that 10 per cent. of all medical men used morphine, and that one of the chief causes was self treatment.

Dr. Leroy J. Brooks, of Norwich, spoke of several cases coming within his own knowledge, and of the temptations arising from the strain and weariness to which the country physician was subjected.

ALBUMINURIA: ITS PROGNOSTIC VALUE IN CHRONIC NEPHRITIS.

Dr. Charles Alling Tuttle, of New Haven, Conn., contributed this paper. In it he asserted that chronic interstitial nephritis might exist without symptoms of kidney disease or the presence of albumin or casts in the urine, and that these urinary symptoms need not be reckoned with in giving a prognosis.

CURABILITY OF EPILEPSY, AND HOW IT MAY BE ACCOMPLISHED.

Dr. William P. Spratling, of the Craig Colony for Epileptics, read a paper with the above title. He objected to prescribing for young children remedies designed to suppress convulsive phenomena, on the ground that they impaired digestion and assimilation, and, after all, only served to mask the disease. It was most important to look for and study the aura, and before giving a prognosis to inquire carefully into the family history. As the complete control of the patient's habits of life was very essential, the value of the colony plan was obvious. The diet should be simple and nutritious, and the whole mode of life should be changed.

DISCUSSION OF TYPHOID FEVER.

Dr. Herman M. Biggs opened this discussion by a consideration of

THE ADVANCE IN OUR KNOWLEDGE.

The first epoch, so to speak, was that from 1850 to 1880, the beginning of which had been marked by the appearance of articles written by such men as Shattuck and Flint, in this country, and Jenner, in England. A second period had been marked out by the discovery of the typhoid bacillus in 1880. Regarding the Widal test, he said that while it had but little negative value, a positive reaction was almost conclusive proof of the existence of typhoid fever. Between the third and seventh days, or in just that period in which the clinical symptoms were far from distinctive, and the Widal reaction was often not obtainable, it was frequently possible to obtain in the urine the diazo reaction of Ehrlich. The chief drawback to this diagnostic test was its occurrence with acute miliary tuberculosis, a disease often confounded with typhoid. Statistics were quoted to show the apparent value of preventive inoculations.

Dr. W. H. Park, of New York, discussed the

BACTERIOLOGY.

He stated that the typhoid bacilli remained in the feces from a few hours to several days; they could rarely be detected in water for a longer period than two weeks. There was abundant proof that flies and other insects were carriers of infection. The typhoid bacilli did not usually make their appearance in the urine until the third week, but after that time they were present in large numbers, often persisting for many weeks, necessitating the prolonged disinfection of the urine after convalescence.

Dr. William Osler, of Baltimore, discussed the

CLINICAL DIAGNOSIS.

He said that in severe cases death might occur before the Widal reaction could be obtained, and even without the characteristic intestinal lesions being visible at autopsy; on the other hand, in the short and mild cases the Widal reaction often proved exceedingly useful. Perhaps the greatest liability to err in diagnosis was in those cases exhibiting a cerebro-spinal, pulmonary or renal localization. Chills were exceedingly common and should not be looked upon as, in themselves, evidence of malarial infection. It was remarkable how many physicians insisted on diagnosticating malaria in cases of continued fever. He would advise all physicians practising in the Northern States to make it a rule to suspect typhoid fever whenever there was a continued fever of six or seven days' duration.

Dr. Edward G. Janeway, of New York, described a number of interesting cases. He cautioned physicians to be especially on their guard against the sudden development of a suicidal tendency in typhoid patients. He looked upon herpes labialis as so very rare in typhoid that if it were present he would feel like at once revising his diagnosis. In three instances he had known tetany to be associated with typhoid.

Dr. William H. Thomson, of New York, presented

STATISTICS OF TYPHOID FEVER AT THE ROOSEVELT HOSPITAL FOR TEN YEARS.

These figures were collected from the experience in his wards for the ten years ending September, 1899. The total number of cases was 368, 275 being males. The total number of deaths was 25, or 6.8 per cent. As a rule, diarrhea had been mild, and had developed after the first week in only 8.7 per cent. This infrequency of diarrhea was attributed to giving up the old beef-tea diet and substituting an exclusive diet of milk with an equal quantity of limewater. Pneumonia had occurred in seven per cent. and bronchitis in eight per cent. Relapses had occurred in 15 per cent. Phlebitis had been noted in seven cases. The medication had consisted in the use of pepsin and bismuth, and, when the tip of the tongue became dry, of ten to twenty minims of spirits of turpentine every three hours. The cool bath had been used whenever the temperature had reached 103° F., and rectal irrigation had also been employed with the idea of increasing elimination.

TYPHOID FEVER IN THE MASSACHUSETTS GENERAL HOSPITAL DURING THE PAST FIFTY YEARS.[1]

Dr. Reginald Fitz, of Boston, presented this historical sketch of the different methods of treatment employed in this hospital, and the different dietary of the corresponding periods. From 1839 to 1869 the diet had consisted of liquid farinaceous food; from 1879 to 1889 it had been of the beef-tea order, and from 1889 to 1899, chiefly milk. Since 1888 baths, often having a temperature as low as 65° F., had been frequently given. The author concluded that the average mortality had not changed materially, that relapses and complications were as frequent as ever and that it was perfectly safe to permit considerable latitude in diet.

Dr. A. A. Smith, of New York, spoke of

SOME PHASES OF TYPHOID FEVER AS SEEN IN BELLEVUE HOSPITAL.

Out of a series of 104 cases there had been 10 deaths, or a mortality of 9.6 per cent. Chills were present in 57 per cent. and the eruption in 77 per cent. Out of 59 cases, the Widal reaction was present in 82 per cent. and the diazo reaction in 74 per cent. He made it a rule not to give his typhoid-fever patients solid food until the temperature had remained at the normal for a week or ten days.

Dr. A. Jacobi, of New York, spoke of

TYPHOID FEVER IN CHILDREN.

He advised keeping the lips and tongue clean, and when the tongue was fissured making applications of a one- or two-per-cent. solution of silver nitrate. The bowel should be frequently irrigated with water at 100° F., bismuth, with sulphocarbolate of zinc or salol, given internally, and the tendency to stupor combated by cold affusions while the body is immersed in water at 95° F.

Dr. De Lancey Rochester, of Buffalo, contributed a paper on the

LOCAL, NON-SURGICAL TREATMENT OF THE INTESTINAL TRACT,

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[1] See page 509 of the Journal.

in which he directed attention to the need for carefully cleansing the mouth, and to the cleansing of the bowel by repeated irrigations and by the use of calomel purges at intervals of five or six days.

Dr. W. W. Keen, of Philadelphia, discussed the

TREATMENT OF PERFORATION OF THE BOWEL IN TYPHOID FEVER.

He stated that up to last year 83 cases had been subjected to operation, with a recovery rate of 19.3 per cent., whereas since that time there had been 67 additional cases, with a recovery rate of 26.9 per cent.

While, of course, the operation should be undertaken as early as possible, it was unwise to operate during profound shock. An important improvement had been introduced by Cushing, namely, the use of cocaine anesthesia instead of a general anesthetic.

Dr. A. T. Hubbell, of Buffalo, closed the discussion by a few brief remarks on the

EYE COMPLICATIONS IN TYPHOID FEVER.

Among those enumerated perhaps the most common were catarrhal conjunctivitis and lacerations of the cornea.

THIRD DAY.

Dr. Stephen Smith, of New York, presented the report of the

COMMITTEE ON QUARANTINE,

which favored supporting the McCaffrey Bill for the establishment of a national bureau of health. The report was adopted.

TWO CASES OF LARGE RETAINED HERNIA.

Dr. Henry O. Marcy, of Boston, reported these cases, which served to illustrate the great danger arising in such cases from excessive intra-abdominal pressure.

W. B. De Garmo, of New York, said that this danger could be greatly diminished by keeping such patients in bed, while efforts were made to reduce the hernia as much as possible.

THE ADMINISTRATION OF NITROUS OXIDE WITH AIR OR WITH OXYGEN.

Dr. Thomas L. Bennett, of New York, read this paper. The safety of this method of inducing general anesthesia was proved by the absence of recorded cases of serious disturbance of the heart, lungs or kidneys. Regarding the mode of administration, the speaker stated that if air were rigidly excluded narcosis would be secured in about one minute, but it would be associated with evidence of marked asphyxia, while if much air were admitted, the patient would become much excited. The ideal method was a definite combination of nitrous oxide and oxygen obtained through the use of Hewitt's apparatus. This anesthetic was most suitable for the following conditions: (1) Where ether or chloroform anesthesia was specially risky; (2) for very short operations. Thus, it could be used with advantage in opening abscesses, incising sinuses, doing curettings, breaking up joint adhesions and in dilatation of the sphincter ani.

THE SPHERE OF DRAINAGE IN SURGERY OF THE APPENDIX.

Dr. William S. MacLaren, of Litchfield, Conn., read a paper with this title. He said that where the suppuration about the appendix took the form of a localized abscess, the treatment should be the same as for abscesses in other parts, but where the pus had entered the general abdominal cavity drainage was impracticable and inadvisable. Gauze drainage was even worse than the use of a glass tube. The proper treatment, in his opinion, consisted in a thorough washing out of the abdominal cavity with salt solution, then the use of peroxide of hydrogen as a disinfectant, and finally filling the cavity with saline solution before complete closure of the wound. By this method the absorption of infective material was more gradual, so that the system was not in danger of being overwhelmed by it, and the surface of absorption was greater. Two cases of a severe type were reported, in which he had used this plan of treatment with much success.

APPENDICITIS: ITS TREATMENT FROM A MEDICAL AND SURGICAL STANDPOINT.

Dr. Thomas B. Scully, of Oneida County, in this paper directed attention more particularly to the medical treatment. He recommended giving in the early stages small doses of calomel and soda, and using high enemata. He also valued highly the administration, hypodermatically, of a combination of morphine and strychnia, the object being to allay the nervous irritability without interfering with intestinal peristalsis or locking up the secretions, as would occur with morphia alone, or particularly if the combination of morphia with atropia were used. If, however, signs of improvement were not observed in the course of twenty-four hours, a surgeon should be called in consultation.

Dr. Rochester thought the treatment just outlined was illogical. His personal preference was for the old opium treatment of peritonitis in these cases during the early stages.

CHOLANGIOSTOMY.

Dr. Merrill Ricketts, of Cincinnati, read a paper on this operation, reporting two successful cases. This operation, he said, was likely to be required in the following conditions: (1) When the gall-bladder is contracted down on one or more concretions, or when it is desirable to explore an atrophied biliary cyst that cannot be sutured within the abdominal incision, and when cholecystotomy is not considered expedient: (2) when, from any cause, the lobe of the liver is too large to allow of the gall-bladder being brought into the abdominal incision for suturing; (3) when one or more concretions have escaped from the biliary duct into the liver substance; (4) when such concretions have become encysted or impacted within the intrahepatic ducts; (5) when the common and cystic ducts have become occluded by a new growth, and the gall-bladder so much atrophied as to preclude either cholecystenterostomy or cholecystotomy, and (6) when, before opening the peritoneal cavity, it is found that an hepatic abscess has ruptured into the biliary tract, filling the gall-bladder with pus that cannot freely escape through the common duct.

THE DIFFERENTIAL DIAGNOSIS BETWEEN CHRONIC JOINT DISEASE AND TRAUMATIC NEUROSIS.

Dr. Reginald H. Sayre, of New York, read this paper. He summarized the subject as follows: (1) Neurosis is apt to follow injury sooner than joint disease; (2) the temperature is usually lowered in a neurosis and raised in inflammation of a joint; (3) the local temperature is usually much lower in a neurosis than in an arthritis; (4) atrophy is much more rapid after injury to a nerve, and (5) true muscular spasm is not present except in joint disease, though it may be simulated.

SUBNORMAL TEMPERATURE.

Dr. Leroy J. Brooks, of Norwich, discussed the influence of various toxemias and auto-intoxications in producing subnormal temperature, and suggested that by the persistence of a subnormal temperature the physician might, at times, be led to suspect the recurrence of attacks of melancholia, epilepsy and dipsomania.

Dr. E. D. Fisher, of New York, said that there had been nothing in his experience to lead him to think that the temperature record would give the physician much help in detecting the approach of attacks of melancholia and similar states, nor was this experience exceptional, according to the statements of those having charge of hospitals for the insane. The chief factor determining the temperature was the amount of bodily activity; hence, after a series of rapidly recurring epileptic seizures the temperature might be slightly elevated, while in melancholia and stuporous insanity, owing to the slight muscular activity, the temperature was apt to be subnormal.

ETIOLOGICAL RELATION OF AUTO-INFECTION AND AUTO-INTOXICATION TO DISEASES OF THE EYE.

Dr. A. A. Hubbell, of Buffalo, was the author of this paper. He stated his belief that retinitis might always be looked upon as the result of some blood poison, and the same was true of optic neuritis. Sympathetic ophthalmia, in his opinion, was another example of auto-infection.

THE EFFECTS OF CERTAIN OCCUPATIONS ON THE PHARYNX.

Dr. Seymour Oppenheimer, of New York, presented in this communication the results of an analysis of 50 cases. This showed that the inhalation of vapors, chemical agents and dust was the chief exciting cause of catarrhal affections of the larynx and was dependent on occupation. Persons entering such occupations quite young, and those having previously abnormal states of the upper air passages, suffered most severely.

THE TOPICAL APPLICATION OF IODOFORM IN THE TREATMENT OF TUBERCULAR PERITONITIS.

Dr. Zera J. Lusk, of Wyoming County, described in this communication the good results which he had observed from the local application of an "iodoform poultice."

AN EPIDEMIC OF INTERCOSTAL NEURALGIA.

Dr. Thomas F. Reilly, of New York, described, under this heading, a series of cases seen by him in New York City last summer at a time when, according to the report of the weather bureau, there were no unusual meteorological conditions. The disease ran its course in a few days, without the usual tender point observed in ordinary intercostal neuralgia, but associated, in many instances, with a herpes zoster along the intercostal nerves, or with an eruption of herpes labialis. Quinine had no restraining effect. The greatest relief had been afforded by strapping the chest with adhesive plaster.

SUPPURATIVE ETHMOIDITIS AND ITS TREATMENT.

Dr. Frank S. Milbury, of Brooklyn, read this paper. He stated that the antrum was involved in over 50 per cent. of the cases. Although he had met with suppurative ethmoiditis rather frequently, it had been decidedly exceptional to observe necrosis after it. The treatment should consist in cleansing the nasal cavities and removing obstruction to drainage.

Dr. R. C. Myles said that double chronic suppurative ethmoiditis was commonly the result of polypoid degeneration of the ethmoid bone. If suppuration occurred, it was essential that the polypoid growth be removed and good drainage through the cells be established. He had found drainage by external incision more satisfactory than the older internal method.

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ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL BENEVOLENT SOCIETY.

AUGUSTUS THORNDIKE, M.D., SECRETARY.

This Society held its annual meeting October 26, 1899, in the Boston Medical Library.

The Treasurer's report showed:

Balance October 17, 1898	$1,514 78
Receipts	8,757.59
	10,272.37
Expenditures	9,783.32
Balance October 17, 1899	489.05
	10,272.37
The amount of funded property is	$49,000

The Council recommended for election the present officers: Drs. D. W. Cheever, President; James C. White, Vice-President; Wm. L. Richardson, Treasurer; and Augustus Thorndike, Secretary. Also for three trustees: Drs. Edward Cowles, of Waverly, Francis H. Brown, of Boston, and Hasket Derby, of Boston.

The list of beneficiaries for 1898 comprised sixteen persons or families. There had been two deaths.

The President, Dr. Cheever, spoke of the sad loss sustained in the death of Dr. Francis Minot, of Boston, one of the original incorporators of the Society, and always its firm supporter. Dr. Minot had served faithfully as treasurer for thirty-two years. On motion of Dr. John P. Reynolds it was resolved that

"The Massachusetts Medical Benevolent Society gratefully records its warm appreciation of the service rendered by the late Dr. Francis Minot, and its consciousness of the deep loss which the Association, in common with the profession at large, have sustained in his death.

"A founder of the Society, he remained ever one of its heartiest and most intelligent promoters, showing by his zeal for its interests only one more instance of that earnestness for the general good which marked his entire professional life, and will always endear his memory to his associates and colleagues."

After some discussion on the desirability of enlarging the membership, in order to reach a greater number of deserving beneficiaries, it was voted, on motion of Dr. C. C. Williams, that a statement to that effect be printed in the *Boston Medical and Surgical Journal.*

STATEMENT.

The Massachusetts Medical Benevolent Society has about two hundred and fifty members. The admission fee is five dollars, the annual assessment only two dollars. Twenty-five dollars in one payment constitutes life membership. Those who give fifty dollars, or more, are called benefactors. Any member who shall become a benefactor, or the widow of any such member, shall be entitled to receive the interest of the sum given by him, as an annuity, whenever his circumstances shall, in the opinion of the council, be such as to entitle him to claim such annuity.

The aid of this institution shall be granted for the relief of those who are, or have been, members of this Society, and their families, and of other members of the medical profession who are, or have been, inhabitants of Massachusetts, their widows and children.

No annuity is granted under sixty years of age, except under peculiar circumstances.

Under these regulations annuities are now granted to sixteen beneficiaries, of whom two or three are physicians, and the rest their widows or children. Gratuities of moderate amounts are also given yearly, to emergencies and to distressed applicants.

The Society desires to increase its membership and to widen its benefactions. The cities and larger towns of Massachusetts are especially invited to contribute. Many physicians are able to afford the small annual fee, and to those who donate a large sum it is a species of life insurance should they need the interest of their money.

DAVID W. CHEEVER, M.D., *President*.

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Recent Literature.

Anemia and Some of the Diseases of the Blood-Forming Organs and Ductless Glands. By BYROM BRAMWELL, M.D., F.R.C.P. (Edin.), F.R.S. (Edin.), etc. Edinburgh: Oliver & Boyd. 1899.

This octavo volume of four hundred and forty-five pages is divided into thirteen chapters, and treats of anemia, chlorosis, pernicious anemia, leucocythemia, Hodgkin's disease, Addison's disease, myxedema, exophthalmic goitre, acromegaly — a very interesting group. Some of these affections have been brought to the field of general clinical observation within the last ten or fifteen years, on others much new light has been thrown during that time, while some still remain among the medical puzzles. The author gives a table setting forth the relative frequency of these diseases in 14,777 consecutive cases which came under his notice, as follows: chlorosis 314, pernicious anemia 45, leucocythemia 5, Hodgkin's disease 12, Addison's disease 12, myxedema and sporadic cretinism 40, exophthalmic goitre 79, acromegaly 3. The value of these figures as representing actual frequency is, as Dr. Bramwell points out, not a little affected by the fact that a considerable proportion of the cases were seen in consultation practice. This fact doubtless accounts for the large relative number of cases of pernicious anemia. On the other hand, the proportion of cases (five) of leucocythemia is not large, and certainly seems small, if compared with the statements of Stengel's personal experience ("Twentieth Century Practice") of 15 cases in four years and 12 cases in one year in Philadelphia. Stengel quotes from Limbeck to show how much the frequency of leukemia varied in different series of 10,000 cases, from 1 to 9.89.

The chapter on Pernicious Anemia, occupying more than eighty pages, about a fifth of volume, is of especial interest from the considerable number (15) of cases reported, and from the careful study which the author has made of the disease. Six cases are reported of patients over sixty years of age. Dr. Bramwell reports one case, previously recorded in the *Edinburgh Medical Journal*, November, 1877, and again in his "Atlas of Clinical Medicine," of recovery (temporary) under arsenic, the patient remaining well for twelve years and finally dying after a second relapse, thirteen years and nine months after the first attack. Dr. Bramwell regards the administration of arsenic as altogether the most hopeful treatment and thinks the prognosis may be measured by the tolerance of this drug. He attaches great importance to the more or less continued treatment in small doses after apparent recovery, and "is not without hope that if arsenic is steadily given for long periods of time after (temporary) recovery, the tendency to relapse may perhaps be prevented." As to prognosis, Stengel takes the ground that though always extremely grave it is not invariably hopeless.

Hale White reports a case remaining in good health eleven years after recovery (temporary ?) under the use of arsenic. Bramwell, who first pushed the arsenic treatment, was led to do so from the observations on the fatty condition of the heart.

Several chapters of the book contain frequent references to Cabot's book on the blood. The volume is a very presentable one, and is a valuable and serviceable addition to the subjects with which it deals.

Nursing: Its Principles and Practice for Hospital and Private Use. By ISABEL ADAMS HAMPTON, Graduate of the New York Training School for Nurses attached to Bellevue Hospital: late Superintendent of Nurses and Principal of the Training School for Nurses, Johns Hopkins Hospital, Baltimore, Md., etc. Second edition, revised and enlarged. Pp. 512. Philadelphia: W. B. Saunders. 1898.

The second edition of this compend on nursing is published without material change from the earlier edition. A chapter has, however, been added on the division of work, extending over three years of instruction, which is of interest as showing the rapid development in the conception of the scope of a nurse's training. In fact, the amount of knowledge expected of the modern skilled nurse is already quite appalling to a conservative onlooker. Here, for example, are some of the topics discussed in junior class lectures: the skeleton, gross, microscopic and chemical structure; principles of modern surgery; an outline of bacteriological methods. It is hardly to be supposed that such instruction is other than superficial, but it shows the tendency toward the extension of the nurse's training, which is everywhere apparent, and which we do not for a moment deprecate. The question will, however, arise, Where is it all going to end?

The volume is conveniently divided into chapters, which discuss systematically and in detail the various procedures with which a nurse should familiarize herself in the care of the sick. The binding, type and illustrations are satisfactory.

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THE PROPOSED ENLARGEMENT OF BOSTON'S INSANE HOSPITAL.

A CLASS of dependents which every community is called upon to provide for is its insane. Whether or not insanity is increasing as civilization progresses is certainly a question still in doubt, and one regarding which statistics are peculiarly likely to be fallacious, but, however this may be, the fact remains that the number is now sufficiently numerous to demand more ample provision than has yet been made. It is well known that at present about two-thirds of Boston's insane are obliged to go to State institutions at a very considerable cost to the city, not to speak of the expense to members of their families who frequently are ill able to afford the expense of a journey to Worcester or Taunton or Northampton to see their afflicted relatives. The consequence is that the city and its citizens are every year putting out money which should more properly be expended within its own confines, in providing adequate hospitals near at hand. Not only is there inadequate accommodation under the present arrangement, but many patients who should be properly cared for in hospitals for the insane are still kept at almshouses to the detriment of other inmates. In an enlightened system of classification, space should certainly be provided for the mentally deficient from whatsoever cause; institutions in which the insane are, nominally, not treated should not be burdened with the practical responsibility of large numbers of helplessly and hopelessly demented individuals, who are always a disturbing element when associated with persons not so afflicted. A proper classification demands their isolation and treatment in wards devoted to their care. Under such a plan they may be cared for with the maximum of efficiency and the minimum of expense, whereas their continued presence in almshouses where their stay is merely tolerated is unfair to other inmates and quite subversive of proper discipline. Particularly is this true in the hospital department of such institutions, in which proper methods of isolation are not yet forthcoming. One noisily demented patient is quite capable of disturbing an entire ward to the extent of rendering proper hospital care of other patients, perhaps critically ill, quite out of the question, to say nothing of putting a burden upon the nurses which they should not be called upon to bear.

Reform in this matter is imperatively needed and is gradually being effected. Either we must have totally distinct wards for insane, among which we include demented patients, at our city almshouse, or else we must transfer them to other institutions adapted to their care. If there is not room for them at the insane hospitals, as is frequently said, that in no way alters the principle, but simply forces more urgently upon us the absolute need that provision should be made as soon as possible, in order that a proper classification may be consistently carried out. The efficiency of the almshouse and its hospital would thereby be greatly increased, and the insane hospitals would experience no difficulty in caring for an additional number of the simply demented class.

We are glad to note that the Trustees of the Boston Insane Hospital have voted to recommend the purchase of more land, a vote which it is to be hoped the Board of Aldermen will approve. It is the hope of the trustees that enough land may be secured and sufficient buildings erected to meet all the demands of the city. Legislation of this sort is important from every point of view; it means the expenditure of money, but such expenditure is to be regarded rather as a profitable investment than as an experiment, the returns from which are in doubt. Such enlargement of the city's hospital work must inevitably come sooner or later, and no doubt steps in that direction taken now will be more advantageous, from a financial as well as from a humanitarian point of view, than if indefinitely delayed. We are entirely in accord with the recent editorial comments of the *Boston Evening Transcript*, when it says, in part:

"To be without adequate accommodations in any branch of a great city's hospital work reflects upon the public spirit and the municipal enterprise of that city. Yet that is the case in Boston to-day. The hospital for the insane was a great advance as far as it went. But it now only provides for a part, and the smallest part, of our needs. . . . Hospital experts have pronounced the present location a very suitable one for a hospital on a metropolitan scale, provided sufficient land could be obtained, and that decision now rests with the Board of Aldermen, who will doubtless best satisfy their constituents and best serve the city by carrying out the recommendations which the trustees have made. Ample provision for its unfortunate, whether sick, injured, insane, or otherwise physically or mentally afflicted, is one of the first duties to which a great city should devote itself."

Boston has already much reason to feel a just pride in its public charitable institutions, and the time has certainly come for it to assume the entire responsibility for its insane.

OUR ATTITUDE TOWARD INCURABLE DISEASE.

From time to time when our spirits are low and our view of life somewhat distorted, we are apt to feel that continued life under conditions of hopeless disease is something little to be desired. From this frame of mind it is a simple step to an attitude in which we transfer what we might think desirable for ourselves to others, whose frame of mind is quite unknown to us. It is easy, after a visit to an almshouse, or an institution for feeble-minded children, to grow pessimistic and condemn, in our mind, the inmates to a speedy death as the happiest outcome of their supposed sufferings, quite regardless of their own feelings in the matter. On the other hand, when our mood is in a lighter vein, we can hardly avoid being impressed with the general air of contentment noticeable in a well-ordered institution of whatsoever sort. Contentment is certainly the rule and dissatisfaction the exception. We are therefore convinced that from the patient's point of view, whatever his disease, life remains worth living under any and all circumstances. He may be unreasonable in his preference from another's more enlightened point of view, but it must evidently be respected to the end.

A physician's duty in cases of fatal disease is so clear that any discussion of it would seem quite superfluous did we not occasionally hear advanced, apparently with seriousness, the theory that life under certain circumstances of incurable disease is a thing to be lightly treated. Nothing is more absolutely abhorrent than the occasionally reported experiments on persons whose outlook for life is limited, and whose remaining years or months are therefore regarded as a legitimate opportunity for experimental research. Nevertheless such things have undoubtedly happened, and the so called justification has been that the approach of death removed responsibility. It is hard to find terms to express one's condemnation of this wholly unjustified attitude, which fortunately is rare. The *Medical Press and Circular* admirably comments on the matter as follows, apropos of a circumstance which had not before been brought to our attention:

"A silly paragraph has been going the round of the press to the effect that a Judge of the Supreme Court of Connecticut, having stated that for a physician to shorten the life of a person afflicted with an admittedly incurable disease was not a criminal offence, a certain doctor, who shall be nameless, has made it publicly known that he is willing to act on this *obiter dictum.* It is hardly necessary to point out that such an act would be deliberate murder, punishable as such in every country in the world. We are all afflicted with an incurable disease — life, to wit — and the mere question of the mean prospect of life does not affect the principle involved."

The argument summed up in the last sentence is incontrovertible and well worthy the serious consideration of all those who are inclined to be radical in this matter. If life is worth living at all, it is certainly worth living to the very end, a position from which the conscientious physician has no possible escape in the care of the cases which he is called upon to treat.

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MEDICAL NOTES.

Epidemic of Dengue in Philippines. — A report comes from Manila, through Chief Surgeon Woodhull, that a sharp and quite general epidemic of dengue has prevailed in Luzon for some months past, and that it appears to be spreading to the south.

Cerebro-Spinal Meningitis as Complication of Measles. — England reports (*Montreal Journal*, November, 1899) a case of cerebro-spinal meningitis complicating measles, the bacteriological diagnosis being made from a meningococcus culture taken from the navel.

Small-Pox in a United States Regiment. — It is reported that small-pox has broken out in the Forty-eighth Regiment (colored) at San Francisco. Three cases have thus far developed, all of which are progressing favorably. No fear of an epidemic is entertained.

Another Case of Neglect by Christian Scientists. — It is reported from Sioux City, Ia., that a child, whose parents profess Christian Science, has recently died of diphtheria, unattended by a physician. The health authorities are investigating the case, and arrests are likely to follow.

The Ravages of Ants in Manila. — A recent number of the *Indian Lancet* publishes the following extraordinary statement, with what degree of seriousness we are at a loss to say: "Swarms of ants have attacked the mail bags in Manila, and swallowed the letters. This is bad for the people and good for the ants. They also got hold of the paper money sent over to pay the troops with, and swallowed a million dollars' worth of this material." If this be true our Government will have still another responsibility thrust upon it, in keeping inviolate the mails of our new possession, to say nothing of its money.

Two Unusual Verdicts. — A Massachusetts jury has recently returned a verdict against a railroad company for $30,000, as damages for personal injuries sustained by the plaintiff. This verdict is one of the largest ever granted in this State. We note also that a Nebraska jury has recently rendered a verdict for the full amount of $5,000 in a suit against a railroad for the death of a man, occurring in an accident. The verdict is considered unusual, inasmuch as the man was riding on a pass and had signed the usual agreement waiving all claims for damages. The train, also, was derailed wilfully by a person now serving a sentence for the crime. The cases will probably be appealed, and one can have no doubt that a clearer appreciation of justice will prevail.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, November 22, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 80, scarlatina 36, measles 27, typhoid fever 16.

Diphtheria in Boston and Vicinity. — The health report of Boston shows that during the past week there have been about twice as many cases of diphtheria as there were at a corresponding time last year, but the number of cases was exceptionally low both last year and the year before. Several cases of diphtheria have recently been reported in Brookline, but the Board of Health has experienced no difficulty in handling the situation. The cases which occurred at the Country Club are believed to have been traced to the milk supply.

The Newton Hospital, — During the past two years improvements and additions to the hospital have been made, amounting to about $50,000. The cost of maintenance has thereby been increased about 30 per cent.

A New Almshouse for Somerville, Mass. — A new building for the dependent poor of Somerville is about to be opened in that city. It is a large and well-appointed structure, and is much needed.

Small-Pox at Chelsea, Mass. — Four new cases have been discovered within the last few days. Free vaccination has been discontinued, between 1,100 and 1,200 having availed themselves of the opportunity.

Typhoid Fever at Collinsville, Mass. — Strict care regarding the proper sterilization of water used for household purposes has checked the epidemic, which, as reported in our last issue, had begun to assume alarming proportions. No new cases have been reported for six days, and but two deaths have thus far occurred.

Scarlet Fever at Hardwick. Mass. — There is an epidemic of scarlet fever in this small town. Twenty cases have been reported during the month of November.

Free Vaccination at Malden. — Since free vaccination was begun by the Malden Board of Health more than five hundred persons have been vaccinated by City Physician J. W. Proctor.

Holy Ghost Hospital for Incurables. — The first anniversary of the opening of the new hospital building for incurables at Cambridge, Mass., has recently been celebrated. An address was made by Prof. Charles Eliot Norton, of Harvard University, who has been one of the most earnest workers in behalf of the institution.

NEW YORK.

Annual Meeting of State Association of Railway Surgeons. — The ninth annual meeting of the New York State Association of Railway Surgeons was held at the New York Academy of Medicine on November 16th, and the following officers were elected: President, J. S. Eddy, Olean; First Vice-President, W. R. Townsend, Manhattan, N. Y.; Second Vice-President, H. P. Jack, Canisteo; Secretary, C. B. Herrick, Troy; Treasurer, T. D. Mills, Middletown; Chairman of Executive Committee, George Chaffee, Brooklyn, N. Y. Papers were read by a number of members, and the special feature of the meeting was a discussion on Physical Fitness of Railway Employees, which was participated in by several invited guests. R. R. Richards, of the Chicago and Northwestern Railway, stated that the report of the Inter-State Commerce Commission for 1898 showed that 6,895 lives had been lost and 40,882 persons injured in railway accidents, and that many accidents had come to his notice which were directly attributable to the physical unfitness of employees. Dr. G. P. Conn, of Concord, N. H., chief surgeon of the Boston and Maine Railroad, directed attention to the proper bases for rejection or for special precautions, and L. L. Gilbert, of Pittsburg, Pa., assistant counsel of the Pennsylvania Railroad, in a paper on the "Medico-Legal Features of Physical Unfitness," expressed the opinion that the physical examination and a record of the condition of employees would save the companies from many of the numerous fraudulent claims for injury constantly being attempted by unworthy employees.

Hospital Saturday and Sunday Collections. — At a meeting of the Trustees of the Saturday and Sunday Association held November 14th, the general agent reported that the preparatory work for the annual collection in the churches, synagogues, trades and exchanges was well advanced, and expressed the hope that the amount contributed, which last year was somewhat more than $70,000, would this year reach a total of $100,000. The Association represents 38 hospitals, and according to the last annual reports of these hospitals to the Association they cared for 34,740 patients (of whom 21,052 were free patients), in addition to 300,995 out-patients in their dispensary departments. The whole number of hospital days aggregated 1,247,020, of which 730,606 were free days. The total cost of the hospital service in these institutions last year was $1,653,038. To meet this there were incomes from invested funds, paying patients, and city applications of $896,598; leaving a balance of $756,449 for current expenses to be derived from the contributions of the benevolent.

New Building Code Condemned. — In the annual report of the Charity Organization Society, just published, the features of the new Building Code bearing on the construction of tenement houses are strongly condemned, and agitation for the amendment of the tenement laws by the State Legislature is urged.

Surgeons and Nurses for the "Maine." — A party of three surgeons, two from New York and one from Philadelphia, and five female trained nurses, who have been engaged for service on the hospital ship

Maine, sailed for England on the Atlantic Transport liner *Mesaba* on November 12th. On the *Manitou*, which sailed on November 19th, were Dr. Hastings and twenty-nine dispensers, orderlies and male nurses.

Army Rations in Tropical Countries. — Dr. L. L. Seaman, of New York, formerly surgeon of the First Regiment, United States Volunteer Engineers, whose name has become identified with the subject of a change in the regulation army ration for troops serving in the tropics, has just returned from the Philippines, and is preparing a report for the Secretary of War and the Surgeon-General. His observations, which have been very extensive, have convinced him that by far the largest number of soldiers who have lost their lives in the Philippines have died from some form of intestinal trouble which could have been prevented by a diet suited to the climate, and he regards it as entirely unreasonable to supply the troops in the tropics with the same rations as those serving in Alaska. He states that the ration of the British troops in India contains from four to six ounces less of meat and two ounces less of bread than the United States Army ration, while considerably more rice is used, and yet hygienists are generally of the opinion that the allowance of heat-producing foods in India is far too great.

Two Cases of Plague in New York Harbor. — On the steamer *J. W. Taylor*, which arrived at quarantine on November 18th from Santos, Brazil, were two cases of bubonic plague, the first cases of the disease to reach the port of New York. The captain of the ship, who was one of the patients, reported that the steward, a young Englishman of twenty-two, had died of the plague and was buried at sea on November 7th. Later in the day a meeting of the Quarantine Advisory Board, consisting of Drs. E. G. Janeway, T. M. Prudden, J. D. Bryant, G. L. Peabody, H. M. Biggs, and other prominent physicians of the city, was held. Health Commissioner John B. Cosby was also present, and the most efficient measures for the prevention of the spread of the disease were discussed and acted upon. It was ordered that the two patients be transferred to the hospital on Swinburne Island, and the rest of the crew sent to Hoffman Island for observation, and that the vessel and cargo be disinfected in the most thorough manner. Three weeks previously the health officer's agent at Santos had cabled that the plague had made its appearance there, so that the quarantine authorities were fully prepared for the arrival of cases from that port, from much which coffee is shipped to New York. Dr. W. H. Parke, of the City Health Department, took some material from the glandular swellings in the axillæ and groins of the patients for examination at the Department laboratory, and on November 19th, Dr. Biggs, the director of the laboratory, made the following report: "The bacteriological examinations thus far made by Dr. Parke apparently show that the contents of the broken-down buboes do not now contain any living germs. It is possible that some may develop later in the cultures. The microscopical examinations were also rather negative. These negative results were such as might be expected in plague at the stage of the disease presented in these men, and would be very unusual in other conditions. They, therefore, afford some confirmatory evidence as to the existence of plague." According to the latest reports, the patients appeared to be well on the road to recovery.

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Miscellany.

THE PROPER ENDOWMENT OF THE SCIENTIFIC DEPARTMENTS OF MEDICAL SCHOOLS.

In the recent address[1] at the opening of the session of the Medical Faculty of McGill University, upon which we commented editorially in the last issue of the *Journal*, Dr. Osler makes the following timely remarks upon the above subject:

"Upon one feature in the organization of a first-class school permit me to dwell for a moment or two. The specialization of to-day means a group of highly trained experts in the scientific branches, men whose entire energies are devoted to a single subject. To attain proficiency of this sort much time and money are required. More than this, these men are usually drawn from our very best students, with minds above the average. For a majority of them the life devoted to science is a sacrifice; not, of course, that it is so felt by them, since the very essence of success demands that in their work should lie their happiness. I wish that the situation could be duly appreciated by the profession at large, and by the trustees, governors and the members of the faculties throughout the country. Owing these men an enormous debt, since we reap where they have sown, and garner the fruits of their husbandry, what do we give them in return? Too often beggarly salaries and an exacting routine of teaching which saps all initiative. Both in the United States and Canada the professoriate as a class, the men who live by college teaching, is wretchedly underpaid. Only a few of the medical schools have reached a financial position which has warranted the establishment of thoroughly equipped laboratories, and fewer still pay salaries in any way commensurate with the services rendered. I am fully aware that with cobwebs in the purse not what a faculty would desire has only too often to be done, but I have not referred to the matter without full knowledge, as there are schools with large incomes in which there has been of late a tendency to cut down salaries and to fill vacancies too much on Wall Street principles. From Harvard comes a most encouraging announcement. By the will of the late Dr. Calvin Ellis the Medical School receives nearly half a million dollars, the income from which is to be used in raising the salaries of the scientific chairs to $5,000 per annum. And not for relief of the pocket alone would I plead. The men in charge of our Canadian laboratories are overworked in teaching. A well organized staff of assistants is very difficult to get, and still more difficult to get paid. The salary of the professor should be in many cases that of the first assistant. When the entire energy of a laboratory is expended on instruction, research, a function of equal importance, necessarily suffers. Special endowments are needed to meet the incessant and urgent calls of the scientific staff."

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[1] Montreal Medical Journal, November, 1899.

The sum to be immediately realized from the bequests of Dr. Calvin Ellis and his sister, Miss Ellis, though very considerable, will not be as large, we regret to learn, as stated by Dr. Osler. Moreover, the salaries of the three scientific chairs in the Harvard Medical School, anatomy, physiology and pathology, which Dr. Ellis had in mind, have already been raised from other resources to the sum of $5,000 per annum. The income of the bequest will, however, doubtless be applied in accordance with the purposes of the testators directly to the advancement of the work of these departments in the medical school, and should be of great value in fostering those researches which Dr. Osler, in common with other broad-minded and progressive teachers, regards as so vitally important in their bearing upon general medicine.

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CHANCES OF DEATH IN WAR.

We have recently had occasion to realize how much more deadly is the effect of disease in an army than the enemies' bullets. The extent, however, to which this is true must be a source of surprise. The following statistics we take from a daily paper:

The most competent authorities state that on the average it takes a ton of shot to kill one man. For instance, it has been estimated that in the Crimean War the British and French troops fired between them the enormous amount of 45,000,000 projectiles, resulting in the death of only 51,000 Russians, while on their side the czar's adherents killed some 46,000 of the allies with an expenditure of over 50,000,000 projectiles, this representing a death for every 1,087 shots fired.

The American Civil War returns, which were got out with very great care, showed that the loss of both the Federals and Confederates was about seven per cent. of the forces engaged, to bring about which involved the expenditure of nearly 22 hundred-weight of ammunition per man.

At the siege of Mezieres, in the Franco-German War, the Prussians threw no fewer than 197,000 projectiles into that town, but, strange to say, less than 400 people were killed by them. At Trouville, two people only were killed after some 27,000 odd shells had been discharged. At Sedan, however, the aim of both the Germans and the French showed a marked improvement, for after 240,000 projectiles had been fired nearly 9,000 French and Prussians were killed.

For the Spanish-American War the returns showed a tremendous amount of shot and shell fired for very meagre results. Of course, in this case, although the mortality was not great, the damage to earthworks, fortifications and government buildings generally was enormous. When the American marines landed at Santiago, during a fusillade upon the enemy lasting two nights, the machine guns and rifles alone accounted for the consumption of over 25,000 rounds of ammunition. Sixty-eight dead Spaniards were found as a result of this enormous expenditure of ammunition.

Great Britain's experience in recent wars has been very little, if any, better than the results just recorded. Take, for instance, the Chartered Company's expedition into Matabeleland. Every one will remember how the warriors of Lobengula were mowed down by the Maxim guns like skittles, but even in this instance, which perhaps is the most effective on record, as the impi advanced on the British lines in solid masses it would have puzzled a blind man to miss shooting some of them. The mortality was very small, considering the vast number of cartridges expended, but this is accounted for by the fact that on examination some of the dead bodies contained more than 50 bullets each. On another occasion, at an attack on a laager some twenty miles south of Bulywayo, 14,000 rounds of ammunition were disposed of with a result of 346 dead Matabele.

Military authorities now regard rapidity of fire as being more essential than range and precision, and content themselves with giving general orders to aim low, and this perhaps accounts for the fact that most wounds are inflicted on the enemy's lower extremities, statistics showing that on the average 45 per cent. of wounds occur in the legs, 33 per cent. in the abdomen, 21 per cent. in the arms and chest, and only one per cent. in the head.

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OLIVER WENDELL HOLMES AT HIS THIRTIETH YEAR.

Elisha Bartlett and Oliver Wendell Holmes were colleagues at the Hanover Medical School in 1839. Bartlett, writing to Dr. John Orne Green, of Lowell, September 8, 1839, gives the following description of the Autocrat: "Dr. Holmes you know something of. As a teacher there is no doubt of his success, although he will not show himself during this his first course. He has his anatomy — some of it at least — to study as he goes on, and he has not yet got the whole hang of the lecture room; he does not give himself his whole swing. His attainments in medical science are extensive and accurate, and his intellectual endowments are extraordinary. His mind is quick as lightning and sharp as a razor. His conversational powers are absolutely wonderful. His most striking mental peculiarities consist in a power of comprehensive and philosophical generalization on all subjects, and in a fecundity of illustration that is inexhaustible. His talk at table is all spontaneous, unpremediated, and he pours himself forth, words and thoughts, in a perfect torrent. His wit and humor are quite lost in the prodigal exuberance of his thoughts and language."

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Correspondence.

REVIEWERS OF BOOKS ON MASSAGE.

Boston, November 14, 1899.

Mr. Editor: — Reviewers of books on massage, with rare exceptions, show a most lamentable ignorance in what they attempt to say on this subject; for every small book or primer on massage is to them almost invariably a step in the right direction, even though the methods of doing massage described in each is totally different from those laid down in the others. The issue of the *Journal*, November 9th, contained the review of a book on "Massage and Swedish Movements" written by a Swede, in which the use of oil is advocated in doing massage. This is not massage at all, it is inunction, for the purpose of preventing friction, obviating manipulation, spoiling a good grip, and hindering the hand from pressing firmly on the skin so as to make it move over the subjacent tissues. It requires no more skill to rub with grease than it does to put paint on a barn door, and those who use it continually for this purpose do so to prevent chafing of the skin and rubbing holes in the patient. It has its uses but more abuses. There is as much difference between this and genuine massage as there is between the work of the house-painter and that of the artist who can paint pictures and bring out expressions, lights and shades. Weir Mitchell in an article in the *New York Medical Record* of December 24, 1892, said: "Generally the Swedes rub badly and without method; are fond of mere *effleurage*, or slap and pound the distracted nervous woman into a condition of excitement. I have often been myself *masséed* in Europe, where such massage as rest cases need is ill understood. On the whole, it is far better done in this country. The American plan of muscle-kneading carefully and systematically done, with thought at the very finger-ends, is what we want."

The Swedes are everlastingly blowing about Sweden being the home of massage, and yet as recently as 1887, they had no books in their own language on this subject. The translation of my article in Wood's "Reference Hand-book," was probably the first book on massage in the Swedish language. This received a highly complimentary review in the *Boston Medical and Surgical Journal*, though the reviewer confessed that he could not read a word of it.

Dr. Symons Eccles' excellent book on the "Practice of Massage" was wilfully misrepresented in the *American Journal of the Medical Sciences* and I promptly called the attention of the editor to the proof of this fact. He kindly replied that he had sent my letter to the reviewer, who maintained an indiscreet silence. If it had been known that Dr. Eccles was not only a practical *masseur* but also president of a neurological society in London, his book would have received very different treatment. The chapter on Gynecological Massage in my "Treatise on Massage" was severely condemned in the *New York Medical Record*, and on the very next page of the same *Record* gynecological massage was highly commended as set forth in a "Primer on Massage."

Consistency is a jewel.

If you want a few more examples I can give them to you.

Very truly yours,
Douglas Graham, M.D.

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AMERICAN MEMBERSHIP OF THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS, PARIS, AUGUST 2–9, 1900.

Baltimore, Md., November 17, 1899.

Mr. Editor: — I fear that in speaking of the Thirteenth International Medical Congress in your issue of November 9th, p. 481, the impression may be obtained that physicians in the United States can only become members of that Congress by addressing the Treasurer-General in Paris. This impression is likely to diminish the number of American applicants for membership and I think it important to correct it. As you already know, an American National Committee has been formed, according to instructions from the Secretary-General, with full powers to receive applications and subscriptions, issue instructions, and, in general to act, so far as possible, for the French Executive Committee. I am sure you will aid the medical profession if you will insert in your news column the following notice:

Notice. — Thirteenth International Medical Congress, Paris, France, August 2–9, 1900. All doctors of medicine in the United States are eligible to membership. Application blanks and full instructions may be obtained by addressing Dr. Henry Barton Jacobs, Secretary, American National Committee, 3 West Franklin Street, Baltimore, Md.

Very truly yours.
H. Barton Jacobs, M.D.

EXCLUSION OF FAT FROM THE DIETARY IS NOT A CAUSE OF BERI-BERI.

New York, November 15, 1899.

Mr Editor: — In an article on "Etiology of Beri beri" quoted from the *Boston Medical and Surgical Journal* on page 263 of the November number of the *St. Louis Medical and Surgical Journal*, I read as follows: "There can be no doubt that suet dripping, fat pork, the fat of milk, and so forth, are most valuable articles of diet, *and their exclusion from the dietary a fruitful factor in the development of rickets*, tuberculosis and possibly of *leprosy* also." (Italics are mine.) How would the brilliant excogitator of that astounding theory explain the fact that in leprosy- and beri-beri-afflicted Japan, there is no such disease as rickets? Its absence from the pathology of Japan is the missing link in your author's chain of reasoning.

"The Non-Existence of Rachitis in Japan,"[1] is due to an abundance of fish-fat (whole blubber, etc.) and iodized sea-weed in the dietary of the people, and therefore the exclusion of fat could not be the cause of beri beri in Japan.

Very truly yours,
Albert S. Ashmead, M.D.

[Our correspondent is referred to this Journal, September 14, 1899, page 274, to the *British Medical Journal*, and to Drs. Laurent and Brémaud.— Ed.]

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A MOTTO FOR MEDICAL STUDENTS.

Baltimore, Md., November 20, 1899.

Mr. Editor; It is evident from the comment in your very kind editorial (November 16th) on my introductory lecture at McGill College, that my motto for a medical student, "Take no thought for the morrow," is liable to be misunderstood. Nothing could be farther from my meaning than to suggest the "unrestrained drifting" to which you refer. The sufficiency of the day's work, the total absorption in it, the stern resolve to put all the energies of one's nature into the task of the hour, doing with all one's might whatsoever the hand findeth to do — this surely is not an advocacy of drifting. As Carlyle somewhere puts it, our main duty is not to see what lies dimly at a distance, but to *do* what lies clearly at hand, an expression in other words of the motto which (backed by a far higher authority) I have found so helpful.

Very truly yours,
Wm. Osler, M.D.

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[1] See my article published in the Medical Record, 1894.

METEOROLOGICAL RECORD

For the week ending November 11th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....5	30.01	46	55	38	74	66	70	S.W.	W.	14	10	C.	C.	
M...6	30.23	43	50	36	72	72	72	N.W.	N.	12	8	O.	C.	
T....7	30.36	46	57	34	78	60	69	W.	W.	10	8	C.	C.	
W...8	30.28	49	58	40	72	64	68	W.	S.W.	8	9	O.	C.	
T....9	29.95	52	60	44	82	65	74	S.W.	W.	8	12	C.	C.	
F...10	29.79	51	60	42	68	66	67	S.W.	N.W.	11	13	C.	O.	
S...11	29.89	43	50	36	63	96	80	N.	N.E.	5	9	O.	R.	.44
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 11, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,550,053	1095	343	9.36	13.32	1.17	1.53	3.69
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,266,832	314	80	12.80	9.25	.64	2.56	8.32
St. Louis . . .	623,000	—	—	—	—	—	—	—
Boston . . .	539,416	194	57	8.84	13.00	1.04	3.12	2.60
Baltimore . .	506,389	153	36	11.05	10.40	2.60	1.95	5.85
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	305,000	100	31	15.00	21.00	4.00	7.00	4.00
Washington .	277,000	117	38	18.70	7.65	2.45	5.95	8.50
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	56	17	16.02	16.02	1.78	3.56	—
Nashville . .	87,754	29	10	13.80	6.90	13.80	—	—
Charleston . .	65,165	31	11	9.69	3.23	—	9.69	—
Worcester . .	111,732	28	10	7.14	—	3.57	3.57	—
Fall River . .	103,142	26	11	15.40	—	11.55	—	3.85
Cambridge . .	92,520	34	14	2.94	20.58	—	—	—
Lowell . . .	90,114	19	2	5.26	10.52	—	5.26	—
New Bedford .	70,511	23	8	8.70	8.70	4.35	4.35	—
Lynn	68,218	17	2	5.88	—	—	—	—
Somerville . .	64,394	15	8	26.66	13.33	13.33	6.66	—
Lawrence . .	59,072	18	7	5.55	22.22	—	—	5.55
Springfield . .	58,266	12	1	16.66	8.33	—	8.33	8.33
Holyoke . . .	44,510	8	1	12.50	12.50	—	—	12.50
Brockton . .	38,759	5	—	20 00	20.00	—	20.00	—
Salem	37,723	11	6	—	18.18	—	—	—
Malden . . .	36,421	6	—	—	—	—	—	—
Chelsea . . .	34,235	10	2	10.00	—	—	—	—
Haverhill . .	32,651	6	1	—	—	—	—	—
Gloucester . .	31,426	7	1	14 28	14.28	—	—	—
Fitchburg . .	30,523	6	3	16.66	—	—	—	—
Newton . . .	30,461	6	2	16.66	—	—	—	16.66
Taunton . . .	28,527	15	1	13.33	6.66	—	—	—
Everett . . .	28,102	5	—	20.00	—	—	20.00	—
Quincy . . .	24,578	7	2	14.28	28.56	14 28	—	—
Pittsfield . .	23,421	4	1		—	—	—	—
Waltham . .	22,791	9	2	11.11	22.22	—	11.11	—
North Adams .	21,583	6	2	—	16.66	—	—	—
Chicopee . .	18,316	3	1	—	—	—	—	—
Medford . . .	17,190	3	—	—	—	—	—	—
Newburyport .	15,036	3	—	—	—	—	—	—
Melrose . . .	14,721	2	—	—	—	—	—	—

Deaths reported 2,417; under five years of age 712; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 257, acute lung diseases 288, consumption 248, diphtheria and croup 102, typhoid fever 60, diarrheal diseases 41, cerebro-spinal meningitis 16, measles 12, scarlet fever 11, whooping-cough 10, erysipelas 4.

From cerebro-spinal meningitis New York 9, Boston 2, Washington, Providence, Lynn, Somerville and Gloucester 1 each. From measles New York 10, Providence and Cambridge 1 each. From scarlet fever New York 6, Philadelphia 4, Baltimore 1. From whooping-cough New York 5, Providence 3, Boston 2. From erysipelas New York 3, Washington 1. From small-pox Chelsea 1.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending November 4th, the death-rate was 18.8. Deaths reported 4,120: acute diseases of the respiratory organs (London) 418, diphtheria 97, fever 94, measles 77, diarrhea 74, whooping-cough 41, scarlet fever 40, small-pox (Hull) 6.

The death-rates ranged from 11.3 in Derby to 25.7 in Bolton: Birmingham 19 5, Bradford 17.4, Cardiff 13.5, Gateshead 21.5, Hull 18.7, Leeds 17.8, Liverpool 21.6, London 18.6, Manchester 21.6, Newcastle-on-Tyne 19.8, Nottingham 17.6, Portsmouth 15.6, Salford 22.9, Swansea 15 6, West Ham 16.3.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 18, 1899.

C. J. Cleborne, medical director, placed on the retired list of officers of the navy from November 10, 1899, under Section 1453, Revised Statutes, for incapacity incurred in the line of service; with the rank and three-fourths the sea pay of the next higher grade under Section 11, Navy Personnel Law.

L. L. Young, passed assistant surgeon, placed on the retired list of officers of the navy from November 10, 1899, under Section 1453, Revised Statutes, for incapacity incurred in the line of service.

H. E. Odell, assistant surgeon, apppointed from November 8, 1899.

J. S. Taylor, assistant surgeon, appointed from November 10, 1899.

R. G. Brodrick, passed assistant surgeon, placed on the retired list of officers of the navy from November 11, 1899, under Section 1453, Revised Statutes, for incapacity incurred in the line of service.

J. C. Rosenbleuth, passed assistant surgeon, sick leave extended two months.

G. B. Wilson, passed assistant surgeon, detached from the "Constellation" and ordered to the "Dixie."

R. P. Crandall, passed assistant surgeon, ordered to the "Constellation."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING NOVEMBER 16, 1899.

Irwin, Fairfax, surgeon. Department letter of June 16, 1899, granting Surgeon Irwin leave of absence for three months, amended so that said leave shall be for two months only. November 16, 1899.

Carter, H. R., surgeon. To proceed to Port Tampa City, Fla., for special temporary duty. November 10, 1899.

Magruder, G. M., surgeon. To rejoin station at Memphis, Tenn. November 15, 1899.

Blue, Rupert, passed assistant surgeon. Department letter of September 28, 1899, granting Passed Assistant Surgeon Blue leave of absence for one month and eight days, amended so that said leave shall be for twenty-seven days only. November 11, 1899.

Clark, Taliaferro, assistant surgeon. Granted leave of absence for fifteen days. November 13, 1899.

SOCIETY NOTICE.

The Southern Surgical and Gynecological Association. – The twelfth annual meeting will be held at the St. Charles Hotel, New Orleans, La., on December 5, 6 and 7, 1899. Members of the medical profession are cordially invited to attend.

Joseph Taber Johnson, M.D., *President.*
W. E. B. Davis, M.D., Birmingham, Ala., *Secretary.*

RECENT DEATH.

John A. McCreery, M.D., of New York, died on November 11th, at the age of fifty-two. He was graduated from Bellevue Hospital Medical College in 1871. He was one of the attending physicians of St. Vincent's Hospital.

BOOKS AND PAMPHLETS RECEIVED.

The Hygiene of Transmissible Diseases: Their Causation, Modes of Dissemination and Methods of Prevention. By A. C. Abbott, M.D., Professor of Hygiene and Bacteriology, and Director of the Laboratory of Hygiene, University of Pennsylvania. Illustrated. Philadelphia: W. B. Saunders. 1899.

Handy Book of Medical Progress: A Lexicon of the Recent Advances in Medical Science. By Charles Warrenne Allen, M.D., Consulting Dermatologist to the Randall's Island Hospital, etc., and Jacob Sobel, A.B., M.D., Dermatological Assistant at the Good Samaritan Dispensary, etc. New York: Wm. Wood & Co. 1899.

The Urine and Clinical Chemistry of the Gastric Contents, the Common Poisons and Milk. By J. W. Holland, M.D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College of Philadelphia. Forty-one illustrations. Sixth edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1899.

Minor Surgery and Bandaging, including the Treatment of Fractures and Dislocations, the Ligation of Arteries, Amputations, etc. By Henry R. Wharton, M D., Demonstrator of Surgery in the University of Pennsylvania; Surgeon to the Presbyterian Hospital and the Children's Hospital, etc. Fourth edition. Philadelphia and New York: Lea Brothers & Co. 1899.

A Treatise on Surgery. By American authors. For Students and Practitioners of Surgery and Medicine. Edited by Roswell Park, A.M., M D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Medical Department of the University of Buffalo, N. Y., etc. Condensed edition with revisions, illustrated. New York: Lea Brothers & Co. 1899.

The Nervous System and its Constituent Neurons, designed for the Use of Practitioners of Medicine and of Students of Medicine and Psychology. By Lewellys F. Barker, M.B. (Tor.), Associate Professor of Anatomy in the Johns Hopkins University, and Assistant Resident Pathologist to the Johns Hopkins Hospital. With two colored plates and 676 illustrations in the text. New York: D. Appleton & Co. 1899.

Original Articles.

THREE CASES OF PYLOROPLASTY FOR STRICTURE OF THE PYLORUS.[1]

BY MAURICE H. RICHARDSON, M.D., BOSTON,
Visiting Surgeon to the Massachusetts General Hospital; Assistant Professor of Clinical Surgery, Harvard University.

Obstruction at the pylorus seems not uncommon if we consider as causes of obstruction not only organic changes at the pylorus itself, but also changes in the position of the stomach by which a kink or flexure is produced at its outlet. It seems probable that many cases of gastric dilatation are caused by sharp bends at or near the pylorus, either in the stomach or in the duodenum. These bends, though not preventing the passage of food, do produce a certain amount of obstruction, with stasis and fermentation of gastric contents and a resulting dilatation. Such kinks and flexures may not even depend upon adhesions; they may take place without any changes whatever at or about the pylorus, the faulty position resulting from a simple overloading and sagging of the normal stomach, or from atony of the gastric walls, and dilatation. That such a cause should be effective may seem more or less a matter of theory; but the proof lies in the great efficacy of lavage. This is shown in the following case:

Edward S. C., of Denver. Seen at Union Springs, New York, on June 1, 1892. This was a man of thirty-five, with a good family history, who had been dyspeptic since the age of fourteen. He had suffered from acidity of the stomach, with vomiting and eructations of gas. For five years he had had attacks of pain in the region of the gall-bladder, gradually increasing in frequency, and supposed to be caused by gall-stones. He had never passed any gall-stones, however. The pain had always been in the gall-bladder region. He had been jaundiced at times. He had lost 16 pounds in weight. The pain would be at first intermittent, and then steady. The attacks were sometimes short, and sometimes long. The pain at the time of my examination was confined to the border of the ribs on the right side, running up as high as the fourth rib. The bowels were regular, except when he had to take morphine for pain. The stools for the past three or four weeks had been dark and tarry. There was intense suffering from gas in the stomach and bowels — so great that he feared rupture of the intestines. The vomitus had been like coffee grounds.

The patient was pale, very much emaciated, with a pulse of 124 and a temperature of 99.4°. The abdomen was tympanitic, except in the left lower quadrant, where there was a non-resistant, fluctuating tumor. There was neither pain nor tenderness in this tumor. I aspirated and got what seemed to be gastric contents. The pain was seated in the right anterior thoracic wall, three or four inches above the margin of the ribs, directly above the gall-bladder. From this point the pain radiated chiefly toward the pylorus and the tumor. It seemed clear that there was a dilated stomach, and that the pain was caused by its dragging weight; that a sharp bend was produced at or near the pylorus, which aggravated the original cause, whatever it might be, and increased the obstruction. I advised systematic lavage, which was carried out. On June 22, 1893, I examined this patient, and found him to be very well. There was no evidence whatever of dilatation. There was no pain. He was in perfect health, and was able to attend to his business. He reported himself perfectly well on September 2, 1894. There were no physical signs of dilatation.

This case illustrates well a gastric dilatation dependent upon a sharp bend at or near the pylorus. The cause of the original dilatation is conjectural. It may have been a moderate enlargement from the ordinary causes, the bend having been produced only after prolonged distention. That the constant sagging of a distended stomach was later on the chief factor was shown by the efficacy of lavage.

A case resembling this in some respects came under my observation in my present service at the Massachusetts General Hospital. A young girl under treatment for some slight trouble — neurasthenia with dyspepsia — without apparent cause suddenly became collapsed. She was in the West Medical Service under the care of Dr. Fitz, and was referred to the West Surgical Service. I found her in profound collapse. The lower abdomen was filled by a smooth, spherical tumor. It was dull, fluctuating and tender. There was sharp abdominal pain, with normal temperature and a high pulse. Her condition was alarming. Though no tumor had been detected previously on physical examination, it seemed to me possible that the tumor was an ovarian cyst with twisted pedicle, as I had myself once failed to find such a tumor before twisting occurred. The tumor proved to be an acute dilatation of the stomach. Dr. Mixter kindly operated for me and found an excessive and phenomenal dilatation. It was found impossible to pass a stomach tube and to wash out the stomach. An anastomosis was therefore made between the stomach and intestine, but this proved ineffectual. Whether the dilatation was caused by a sharp bend at the pylorus or not could not be determined.

Whatever the initial cause which produces the bend near the pylorus, it seems evident, even if that cause be a constriction, that the traction of the loaded stomach will tend to increase the obstruction. In many cases the only cause of dilatation may be an organic stenosis at the pylorus. In some instances this stenosis does not result in dilatation, but rather in a thickening of the gastric walls. In two of the cases reported herewith there was no dilatation whatever, though before operation that condition had been supposed to be present. In one the cause was too recent; in the other the gastric walls were evidently hypertrophied.

The influence of adhesions from external causes in producing stenosis seems clear. Such a cause may be found in an old cholecystitis, in which, after the acute infectious stage, with dilatation and adhesion-formation, has subsided, the gall-bladder contracts and drags upon the duodenum or upon the pylorus.

Localized peritonitis from other causes, with adhesions about the stomach, may produce serious disturbance of nutrition, even though there may be no organic disease of either pylorus or duodenum. In such cases nutrition is interfered with either from limitation of the normal physiological movements of the stomach, or, what is more likely, from a real obstruction to the flow of the gastric contents. This point has been recently illustrated in Dr. Porter's clinic at the Massachusetts General Hospital by the following brilliant case:

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[1] Read at a meeting of the Surgical Section of the Suffolk District Medical Society, April 5, 1899.

The patient, a man of twenty-nine, farmer and painter, had had for three years symptoms referable to the right hypochondrium. There were pain, tenderness, and vomiting. At one time there was wrist-drop and facial twitching. The last attack occurred five weeks before entrance to the hospital, in November, 1898, and from this attack he had not recovered. During this time his weight fell from 165 to 125, and he was very weak. The stomach could be distended until its lower border reached one-third of the distance between umbilicus and pubes. At times he vomited as much as a gallon of fluid. There were obscure physical signs in the right hypochondrium. The vomitus contained free hydrochloric and lactic acids.

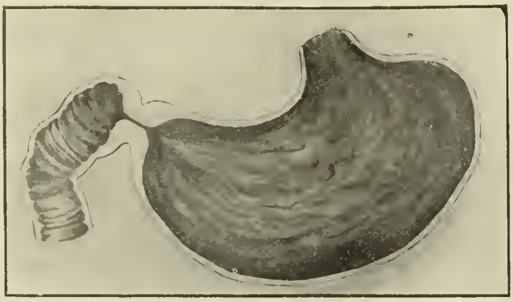

FIG. 1. Showing in vertical section a stricture of pylorus.

Dr. Porter operated December 30, 1898, and found the pylorus adherent to the gall-bladder and under surface of the liver. There were very fine adhesions along the attachments of the lesser omentum. These were divided and tied off in sections. The pylorus having been thus freed from the gall-bladder, the pyloric end of the stomach became freely movable. The pylorus itself was opened and carefully examined, but no lesion or constriction was found.

The patient made a rapid recovery. All his symptoms were relieved. He was discharged January 30, 1899. On March 23d he re-entered for examination. He was so improved that he was not recognized. He had gained 45 pounds. There was no distress after eating; he was in perfect health.

In this case the symptoms were undoubtedly due to the malign influence of adhesions upon the position and shape of the stomach, and consequently upon its physiological functions.

In other cases separation of adhesions about the pylorus has been followed by benefit, though I do not know of any case in which the benefit of operation has been so conspicuous.

The diagnosis of pyloric obstruction may be easy or it may be hard. The lesion may be unmistakable, or may be determined only after exploration. The facility with which it is recognized depends first upon the detection of an adequate possible cause. In Case I the boy's history gave no sign, his age no tendency, his physical examination no clue; yet the history and complaints, even without adequate probable cause, pointed directly to a pyloric stoppage, and to nothing else. In Case II the regurgitation of stomachfuls of food some hours after the eating, with constipation and progressive emaciation, would have proved a pyloric stenosis even had there been no history of a corrosive poison accidentally swallowed. In Case III, on the other hand, no symptoms pointed directly to a benign stenosis, and none to a complete one. The history pointed quite as strongly to a carcinoma as to a cicatrized ulcer; to a simple dilatation as to a constricting band. There was no history of ulcer.

The importance of a history of gastric ulcer may be, and often is, overestimated. The typical symptoms of such a lesion are often absent. There may be nothing whatever in the man's life to suggest an organic disease of any kind. Indeed, in a case of actual perforation recently operated upon the symptoms appeared suddenly in a robust young man in perfect health. In this lesion as in so many other acute abdominal emergencies, the patient may present anything but the classical history and appearances of organic disease. Were the signs of ulcer always so glaringly apparent as they are described to be, or as, in the majority of cases, they are, no one could mistake the lesion. Such cases are only too easy to diagnosticate. It is in the unusual, the atypical, that the unexpected is found; therefore in all cases of suspected pyloric stenosis the absence of these typical symptoms must not excite too great a confidence. Just as in gall-bladder lesions, and especially in acute inflammations dependent upon gall-stones, there is often no previous history whatever of gall-stones themselves upon which to base a guess, so in gastric lesions there may have been a lifetime of perfect digestion. I have seen, for example, a complete intestinal obstruction from a simple cholesterin stone in a man of sixty-five or seventy in whom there had never been a moment of conscious pain; yet in this case the stone was unmistakably a gall-stone, and it must have ulcerated through the gall-bladder and into the intestine. So in gastric cases the existence of a cicatrix closing the lumen of the pylorus cannot be disproved even by the most rigid elimination of a previous history of ulcer. Yet it may be stated that as a rule an ulcer in the pyloric region will be found to have given at some time or another signs of its presence. A history, even if obscure, may furnish the missing link in the chain of evidence. Fortified by such a history, the symptoms of pyloric obstruction acquire a meaning clear enough to indicate the approximate surgical remedy and to demand an exploration.

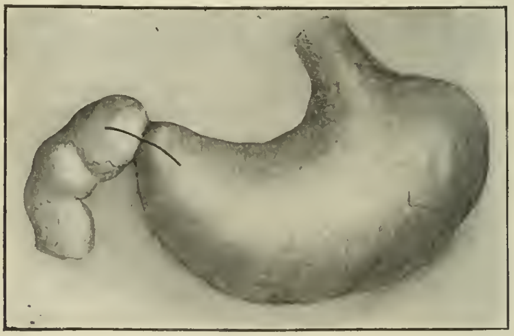

FIG. 2. The incision through the cicatrix, with sound tissues on either side.

The most important symptom of pyloric obstruction is vomiting or regurgitation of food some hours after it is taken. The more complete the obstruction the more the food will be regurgitated, until practically all that is swallowed will be returned. If the food is retained long enough, it will become decomposed and offensive. Pain may or may not be present. The stomach may be dilated or even contracted. Its walls may be hypertrophied. At exploration the peritoneal surfaces are reddened and its vessels injected. If dilated the stomach will present the usual characteristics of dilatation. One may think before operation that he detects a tumor; but I am skeptical about it, even when exploration shows a considerable thickening about the pylorus. In Case III and in two cases without stenosis which were explored there was an unmistakable thickening of the posterior gastric wall near the pylorus. In Case III the tumor had been felt by one of the consultants; yet I could not feel this thickening by direct pressure, even when my hand was in the abdomen. It was only by getting the mass between my thumb and fingers that I could even then be sure of it. It seems hardly necessary to assert that gastric tumors cannot be felt unless they are at the pylorus or in the anterior wall, except when they are very large and project forward. An excessively large tumor of the stomach escaped the notice of every examiner in a recent instance, and yet autopsy showed that it was present. The apparent thickening so often detected deep in the epigastrium overlying the abdominal aorta generally is either the pancreas or the normal pylorus, as I have time and again demonstrated. The anatomical structure of the epigastrium makes deep palpation deceptive and unsatisfactory, nothing being felt when a tumor actually exists, and tumors being felt when everything is normal. Exploration through an incision is the only way in obscure cases to be sure of the lesion.

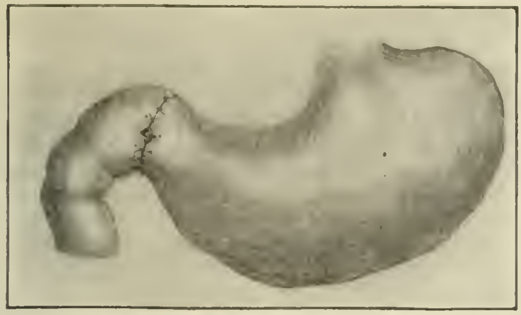

FIG. 3. The transverse suture nearly completed. The cut shows where the last sutures are to be applied, and where the greatest tension will be.

With characteristic vomiting, with or without pain or dilatation, progressive emaciation adds the required evidence for a reasonable diagnosis of pyloric stricture. If the vomitus contains blood, changed or unchanged, the question of an acute process, whether ulcer or cancer, must be considered. The opinion inclines toward carcinoma if the blood is changed, if there is cachexia, if the patient is over thirty-five. It becomes a conviction if there is a tumor. If the patient is under thirty-five, if he is anemic rather than cachectic, if the blood is bright, the opinion must incline towards an ulceration.

The stomach presents a field in which surgery may achieve some of its most brilliant results. From the anatomical, the physiological and the pathological standpoints this field is a most attractive and encouraging one. The size of the stomach, the thickness of its walls, its easily controlled blood supply, its physiological functions, which may be more or less completely dispensed with — these characteristics make the stomach favorable for all the technical possibilities of modern methods.

In strictures of the pylorus of benign origin no methods seem worthy of serious consideration which do not restore to its normal calibre the lumen at the point of constriction. Though in rare instances ideal restoration may be impossible, yet in practically all cases it can be accomplished. We may resort to plastic operations, or to resections with suture in continuity; we may make a communication between the stomach and the jejunum. In benign strictures, however, the lumen may be usually restored in continuity. We need not consider, therefore, the makeshifts by which the stream is diverted directly into the jejunum.

I have used the Heinecke-Mikulicz pyloroplasty in the three cases herewith reported (Figs. 1, 2 and 3). This procedure, whatever its theoretical beauties, has certain disadvantages which these cases have emphasized. On the cadaver no operation could be more perfect than that which enlarges a flexible cylinder by transforming a longitudinal into a transverse slit. Presumably this operation would be perfect upon a healthy pylorus. I have demonstrated its efficacy upon an obliquely inserted ureter [2] in hydronephrosis. No operation could be more satisfactory than this was in Case I. When, however, there is a wide annular ring of cicatrix at the pylorus the method is faulty and unsatisfactory, for reasons to be given presently. Upon the cadaver a longitudinal cut two inches long, transformed by suture into a transverse one, enlarges the lumen markedly. The posterior and lateral wall of the new lumen are made of the old pylorus, the extremities of the sutured wound representing the former anterior surface now separated by the length of the transformed incision (Figs. 2–4). The anterior wall of the restored pylorus is made up of gastric and duodenal walls brought together from the distance of one inch each way — the gastric wall one inch above the centre of the cut being in apposition with that of the duodenum one inch below the centre of that cut. From these sutured points the gastric and duodenal walls are gradually merged into the posterior and lateral surfaces that were taken from the anterior pyloric wall. This approximation of surfaces is satisfactory when the cicatricial ring is narrow,

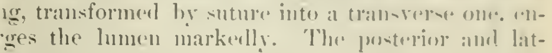

FIG. 4. Shows the depressed area about line of suture, when the cicatrization is thick and extensive.

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[2] Transactions of the American Surgical Association for 1897.

or when the cicatrix is confined to the posterior wall of the pylorus; for the new channel is then bounded everywhere, except behind, by normal mucous membrane. Even when the posterior half of the circumference of the new lumen is the old cicatrix, there is room enough. When, however, the cicatricial ring is broad, the new walls in front do not have enough mucous membrane, and the stricture may recur. In Case II, in which the stricture was comparatively long, this complication was supposed to have resulted. The lumen was a flattened slit, its posterior surface being the cicatrix, its anterior, mucous membrane from stomach and duodenum, and I was not sure that the relief was enough (Figs. 4 and 5).

In Case III this possible difficulty was anticipated. After making the longitudinal cut, I trimmed the edges into a lozenge — an expedient by which all the cicatricial tissue was removed except that comprising the posterior wall of the pylorus. The whole anterior and lateral portions of the circumference were thus normal gastric wall, and the joint was three-fourths mucous membrane on its internal surface. In such cases the Heinecke-Mikulicz operation is not as satisfactory as a resection of the anterior and lateral pyloric walls, because it is less efficacious and no safer. Moreover, resection of the lateral walls, leaving the posterior wall with its blood supply intact, is quite as rapid and much more secure, and makes a larger lumen. Another difficulty with the Heinecke-Mikulicz method lies in the stiffness of the cicatrix, which does not always permit a ready approximation. In Case II the tension was too great on the central sutures, for the stiff and thick pyloric wall would not adapt itself readily to the change in direction (Fig. 3). Moreover, the longitudinal tension was so great that when completed the line of incision was depressed in the centre (Figs. 4 and 5) without being rounded out or even bulging with the excess of transplanted tissue, as is desirable in plastics of this kind.

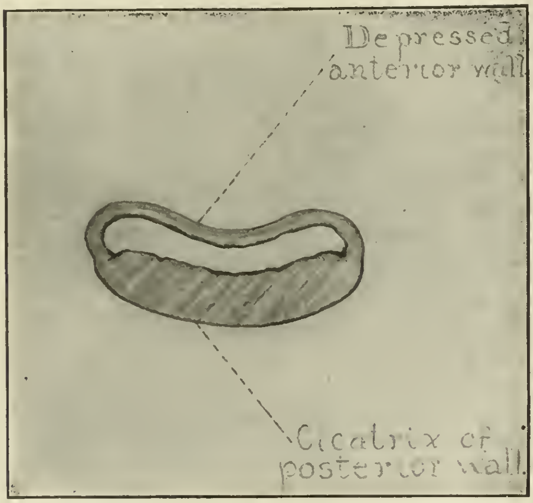

FIG. 5. A cross section of restored pylorus, showing depressed anterior wall.

The technique of the Heinecke-Mikulicz operation needs no amplification here. The longitudinal cut must not be very long — two or two and a half inches is enough (Fig. 2). If suturing is unsatisfactory, or if, on bringing the ends together temporarily with forceps, the new pylorus is unsatisfactory, a cut should be made from the ends of the longitudinal cut to the lateral borders of the pylorus above and below (Figs. 6 and 7). These additional cuts should be so made that the opposing surfaces of stomach and duodenum will fall together in full and easy approximation, even if it becomes necessary to remove entirely the cicatrix of the posterior wall. The last procedure would, of course, be a complete resection of the cicatrized pylorus.

For suture material I use only silk. The mucous membrane should be united separately by suture, continuous or interrupted, to control bleeding and to secure accuracy. One row of Lembert sutures is enough for the peritoneum, though there is no objection to a second fortifying row. A strand of gauze should be left for forty-eight hours in contact with the line of suture.

The results in this, as in most operations upon the stomach, are very encouraging; all my cases of gastric surgery have recovered except two, one a digital dilatation for a benign stricture — a most unsatisfactory and useless operation — and a gastro-enterostomy. The latter was performed with a Murphy button, and was followed by general peritonitis from extravasation. The list of successful operations includes two gastrostomies for foreign bodies, a pylorectomy, and a total extirpation — not to mention several gastrotomies. I have no doubt that many chronic and distressing gastric cases could be permanently relieved by an exploration, and the immediate application of the appropriate surgical remedy. In most instances, however, the favorable moment is lost by waiting for positive diagnostic signs. The operation often is not resorted to until the patient is so reduced that he cannot successfully undergo even the rapid manipulations of a pyloroplasty.

CASE I. Frank C., aged seven and one-half, a patient of Dr. Nason, of Newburyport, I saw on April 28, 1896. He had always been well. Twelve weeks before, he was taken with violent epigastric pain and vomiting. The vomitus contained a little blood. The pain lasted two or three days, but the vomiting continued. The bowels moved regularly for three or four weeks, then became obstinately constipated. He was extremely emaciated. The stomach was dilated. Fluids by mouth would accumulate in the stomach, and finally would be vomited. The diagnosis of pyloric stricture and gastric dilatation was made. The Heinecke-Mikulicz pyloroplasty was immediately performed (Figs. 1, 2 and 3). He made a good recovery, and is now shown in perfect health.

CASE II. Charles D. G., aged forty-eight, married, shoemaker, a patient of Dr. Marshall, of Lynn, entered the Massachusetts General Hospital in February, 1899. The family history was negative. The patient was a man of good habits, and had always been well. On December 11, 1898, he took by mistake about a third of a tumbler of muriatic acid, by which an immediate burning pain in the stomach was caused. This grew worse for three days, and then gradually subsided. On the eighteenth day there was bloody vomitus — a pint in amount. There has been no blood since. Food remains in the stomach from three to thirty-six hours. He is always hungry. The vomitus is at times foul. Food causes some distress in the stomach a short time after ingestion. He has been on nutritive enemata for past two weeks.

The patient was a fairly-developed and poorly-nourished man — evidently starving. The pulse was weak and the face thin and drawn. He asked for food and drink; but, when this was given, regurgitation of everything occurred. He was placed on nutritive enemata every six hours. It was evident that there was an obstruction at the pylorus, caused by a corrosive poison, with ulceration and subsequent cicatrization and stricture.

On February 11, 1899, a median incision was made, three inches long, beginning about one inch below the ensiform cartilage. The anterior wall of the stomach and pylorus presented, between which could be seen the depression of an annular stricture. A longitudinal incision three inches long was made directly through the stricture and the contiguous surfaces of stomach and duodenum. The pylorus was found quite impervious. It was very difficult to bring the ends of the longitudinal cut into immediate transverse approximation. Owing to the rigidity of the cicatricial tissue, the tension was so great upon the stitch which brought the ends of the longitudinal cut to the centre of the transverse line that it immediately tore out. It was necessary, therefore, to begin at the sides, half-way between the ends of the incision. The change of direction from longitudinal to transverse was thus gradually attained without too great tension upon any one suture (Fig. 3). The sutures were the interrupted Lembert of fine silk. Two small wicks were placed down to the line of suture, and the rest of the abdominal wound was closed with silkworm-gut.

The patient bore the operation well. The pulse was 120 and of good quality. He was given a morphine suppository of one-fourth grain. This was repeated during the evening. Every four hours the patient was given an enema of beef juice, brandy, salt solution, each one and one-half ounces, an egg, strychnia, grain one-thirtieth, deodorized tincture of opium ten minims.

On February 12th the patient was fairly comfortable. He slept four or five hours during the night. Twenty-four hours after operation drachm doses of peptogenic milk were given every hour, and well retained. The amount was increased in the evening to two drachms every hour, with sips of warm water every hour. The enemata were well retained. On February 19th the stitches and wicks were removed. On February 21st he was taking liquids and soft solids without nausea. The patient's face was filling out rapidly, and his general appearance was much improved. On February 22d he vomited. All food was therefore omitted for twenty-four hours, when he was given liquids and soft solids. On February 24th he was put upon house diet. He was improving daily in appearance. On February 28th the patient was apparently doing well. He said that he had no nausea, and kept down all he ate; the nurse, however, saw him vomiting, and, on questioning, found that for the last three days he had been vomiting at night all that he had eaten during the day. He carefully hid the vomitus in the bedpan and the urine cup, till he could empty it unnoticed. The reason given for this deception was that he would be deprived of food if he confessed the vomiting. On March 4th the patient's general appearance was improving, and he was gaining in weight. In the last two days he has gained four pounds. On March 6th he was discharged relieved. He reported once or twice afterwards. Dr. Marshall reports that he has returned to his work and is perfectly well.

In this case the occurrence of vomiting suggested the reclosure of the pylorus. I was prepared, therefore, to perform a more extensive plastic — to remove if necessary, the cicatrix by a more or less complete resection (Figs. 6 and 7). It is possible that such a procedure may in the future become necessary. For reasons already given, linear pyloroplasty does not seem likely to be so efficacious as a V-shaped excision of the cicatrix, or even a complete cylindrical resection. Guided by the experience in this case, a modification of linear pyloroplasty was used in Case III (Fig. 6).

CASE. III. George L., aged fifty-four, married, ship-carpenter, of Charlestown, a patient of Dr. Morris, entered the Massachusetts General Hospital in March, 1899. The family history was negative. He had always been well, and of good habits.

This patient had been unable to work since June, 1898, on account of pain in pit of stomach. In November, 1898, he vomited tarry-looking material, but there had been no vomiting since. For the last four weeks he has passed tarry-looking feces. At times he is constipated, and at times he has diarrhea. The pain is not constant. There is some tenderness in the region of the epigastrium all the time. He has had to give up everything except soft food. For a time he lost weight; then regained it. At times he vomits nearly everything at varying periods after eating. At other times he vomits not what he eats, but a thin, green liquid, though it may be soon after eating. He has himself felt a tumor in the epigastrium. The bowels have been constipated of late; the appetite has been poor. He is a well-developed but poorly-nourished man. The body is not much emaciated, but the face looks drawn, thin and pale. Abdominal examination is negative, except for an indefinite mass, about the size of an English walnut, which can be felt on deep palpation in the right epigastrium.

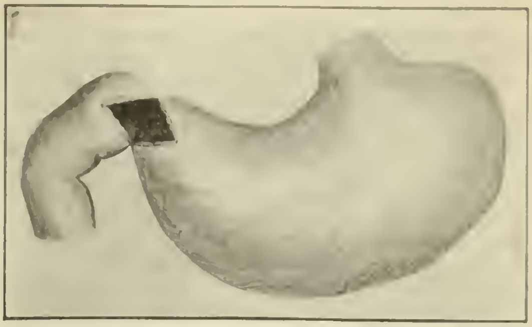

FIG. 6. Partial resection of cicatrized pylorus, a method preferable to the linear incision when cicatrization is extensive.

March 8th. He has had a poor night; he vomited this morning. The vomitus on examination shows presence of free hydrochloric and lactic acid. March 9th. About middle of last night, the patient again vomited what seemed to be chiefly blood.

March 11th. Examination by Dr. Fitz shows the stomach to be dilated, its lower border being about two inches below the umbilicus. There is a leucocytosis of 15,000. Hemin crystals are found in vomitus. Undigested food resembling rice is found in stomach washings. The red blood count is 5,712,000; hemoglobin, 62 per cent.; whites, 7.45 A. M., 13,000; 11.15 A. M., 12,600; 4.30 P. M., 12,250. Butyric acid is present. The urine is high colored, acid; 1.030; no albumin; chlorine normal; no sugar; bile, slight trace. March 15th. Patient has been fairly comfortable during past few days. Stomach washed out to-night and found to contain considerable undigested food of a very sour odor.

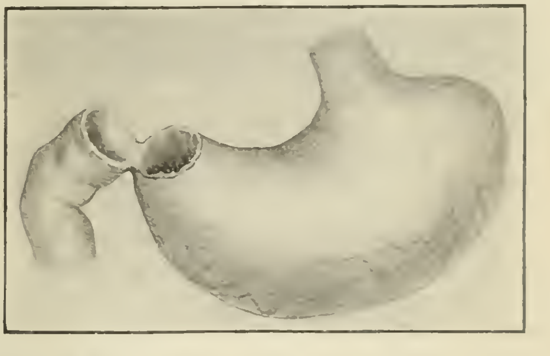

FIG. 7. A still more extensive resection; a method to be used in exceptional cases.

On March 18th an incision four inches long was made in the median line, beginning just below the ensiform cartilage. No evidence of malignancy was found, but the pyloric end of stomach was adherent to liver and gall-bladder, and there was evidence of an old adhesive peritonitis. The gall-bladder was contracted from side to side, but elongated, its fundus being attached to the stomach by old and firm adhesions. These adhesions were dissected from the stomach until the gall-bladder was perfectly free. The pylorus was extensively thickened and tightly constricted — probably by the cicatrization of an old gastric ulcer. An incision three inches long was then made longitudinally in the pylorus, directly through the constriction, extending into both stomach and duodenum. The longitudinal incision was converted into a lozenge or a broad V by removing a considerable portion of the cicatrix of the anterior wall of the pylorus (Fig. 6). By bringing together the opposing surfaces of duodenum and stomach an abundant artificial lumen was procured. The mucous membrane was first united by a continuous suture; the peritoneum by an interrupted Lembert of silk. Two gauze wicks were then placed on either side of the line of sutures, and the abdominal wound was closed with interrupted silkworm-gut sutures. The patient recovered from ether well. He vomited once, about an hour after coming out of ether. The vomitus consisted mostly of blood. The patient was very comfortable during the night, after a suppository of one-fourth grain of morphine.

March 19th. The patient was in good condition; there was no distention or abdominal tenderness. The following enema was given every few hours: Brandy, salt solution, beef juice each one ounce; eggs; tr. op. deod. m. x. There was good movement of bowels this morning. On March 20th the patient passed a comfortable night. This morning one pint salt solution by rectum was well retained. At noon to-day, forty-eight hours after operation, peptogenic milk, one drachm every hour, by mouth, was well borne. There was no vomiting or gastric distress. This evening peptogenic milk was increased to three drachms every two hours, with sips of water at frequent intervals. On March 21st the liquids were increased to peptogenic milk every two hours, with port wine one drachm, every four hours. The wound was redressed. One wick was taken out, the other loosened. On March 22d the liquids were increased to peptogenic milk, one ounce every four hours. The patient complains of no gastric distress. On March 23d the second wick was taken out. The wound was healed by first intention, except for a small granulating area where the wick was. Peptogenic milk, four ounces, was given every four hours; beef tea, two ounces every four hours, eggnog with sherry, half an ounce. On March 26th all the stitches were out. Peptogenic milk and beef tea were omitted. The regular liquid diet — soups, milk, etc. — was given, eight ounces every four hours.

The patient was discharged relieved. He reported several times after discharge. At one time it seemed probable that there was a recurrence of the pyloric disturbance. The last heard from him, through Dr. Morris, was that he was doing very well.

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THE HOSPITAL FOR CHRONIC DISEASE.[1]

BY E. W. TAYLOR, M.D., BOSTON,

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With the striking increase in hospital development which has marked the last few years, the victim of chronic disease has received but a small share of attention. Popular sentiment has demanded that the acutely sick be given the first care, a feeling with which no one would wish to take issue. The limitations of our hospitals have required that space be given to those whose needs are immediate, and whose ailments are capable of palliation or cure; residence in the wards is discouraged beyond a certain period, both on account of the necessity of making room for others, and for reasons of expense. This is as it should be. We have not yet attained to a great hospital in the sense of an all-inclusive one, where cases of long as of short duration may alike be treated. The necessity of discrimination is apparent, and may, no doubt, most conveniently be made between the so-called acute and chronic diseases. The inevitable result is that the victim of a chronic disease suffers, and often suffers severely, for want of the skilled treatment which it would seem an enlightened community should provide. His needs, it may be, are not immediate, his treatment may not demand heroic measures, but he requires above all that constant care which a properly equipped institution can alone give. Without that care it is hard to conceive a more wretched illness and death than is likely to fall to his lot amid the increasing squalor of a home rendered destitute by the length of his illness. There is certainly no class of persons more demanding of sympathy from a purely humanitarian standpoint. Within the last few years a decided advance has been made in the establishment of hospitals for certain classes of disease, ordinarily not accepted at general hospitals. I refer particularly to institutions for the treatment and care of tuberculosis; even in these, however, the preference is, and at present must be, given to those in whom treatment is likely to be efficacious. The fatally ill are therefore seldom gainers, and their disease must still run its course, a constant menace to their associates. With but few exceptions, and those absolutely inadequate to the needs, the sufferer from chronic disease remains an outcast, for whom the community provides no shelter, except under the declaration of absolute dependence.

The time will no doubt come in our country, as it has in others, when the sentiment of the medical profession, as of the people at large, will demand and find the means of providing institutions for the sick so comprehensive in scope that no worthy person who is diseased and disabled from whatever cause will be rejected. We are, however, far removed as yet from that consummation. We must recognize the conditions as they are, and make the most of present opportunities. That we have not even done that is sufficiently obvious. As at present organized, the hospitals in which chronic disease is treated are, with the exception of the hospitals for the insane and various smaller institutions, connected with almshouses. This is true of Massachusetts and Boston, and also, so far as I am aware, of other American cities. The development of these almshouse hospitals has lagged behind that of others for various reasons. Prejudice, politics, lack of scientific interest, a superficial feeling of the hopelessness of treatment have all entered in. Yet it is in these institutions that the first step must undoubtedly be made toward a broader spirit of scientific inquiry and toward a more liberal conception of the privileges and duties of medical charity.

Before entering upon what seem to me the very hopeful possibilities of the present situation in Boston toward the development of its almshouse hospital into a highly creditable institution it will be well to consider briefly the value of the hospital for chronic disease in general. This would appear hardly necessary had we not in this community been so slow in recognizing and taking advantage of our opportunities.

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[1] Read at a meeting of the Suffolk District Medical Society, October 28, 1899.

In the first place, the hospital for chronic disease is in no respect different from the hospital for acute disease in that it should subserve two chief purposes: first, the care of the sick in the best possible way, and secondly, as a centre for medical investigation and medical teaching. Experience has amply shown that the union of these two purposes conduces to the greatest possible efficiency and the maximum of usefulness. The patients are, as a class, benefited by the greater degree of attention bestowed upon them, and the physicians in charge and students are stimulated to better work through the possibility afforded them of investigation and study, and hence indirectly the community at large is the gainer. These arguments apply with peculiar force to the hospital for chronic disease. As already indicated, ordinary motives of humanity demand that we should provide proper hospital care for those sick with disabling or lingering disease. They need it badly. This aspect of the question is so self-evident that it certainly requires no extended exposition.

When, however, we turn to the general attitude of physicians toward this problem of chronic disease and its treatment, we are apt to meet with a discouraging apathy. We are told that one can do nothing for such cases, that they are not interesting from a medical standpoint, that little is to be learned from them, and that their care is a simple matter of nursing. This attitude, which is undoubtedly prevalent, is most sincerely to be deprecated. It implies a certain small and narrow view of the aims and problems of medicine, which should be combated at every turn. Evidently much may be done for the chronic sick in many cases, and something, no doubt, in all. The benefit to persons suffering from tuberculosis in its various forms is a case in point. We have had ample demonstration in Massachusetts of the effects of hospital treatment for lung tuberculosis; continued hospital care for persons with tuberculosis of bone, with the resultant deformities, is absolutely essential in many instances to the permanency of relief. That benefit may result from the hospital care of any of the chronic degenerative processes of internal organs, we are certainly in no position to deny; that symptoms may be palliated, when the underlying condition is beyond control, is self-evident. These in themselves are sufficient reasons for the establishment and maintenance of a hospital for chronic disease. As for such cases being uninteresting and uninstructive — that depends wholly upon the attitude of the physician toward his professional work. If he be merely superficial and seeking only for immediate results, his interest will naturally flag; if he looks below the surface, he will find many of the problems of medicine offered him in most attractive form, which can hardly fail to claim his deepest interest. He has the completest control of his patients; he may watch for many years the development of morbid conditions and study the signs and symptoms and ultimately the post-mortem appearances connected with them with a completeness which otherwise would be quite impossible. That such work is valuable and indispensable in a progressive medical community seems evident. The material always may be found in a hospital for chronic disease; it is rather the enthusiasm for investigation that is lacking. It seems to me, therefore, that the physician, certainly in many lines, should find in such hospitals a congenial field for positive and highly profitable scientific work.

The next proposition should meet with still less opposition, and that is, that a hospital for chronic disease is an invaluable adjunct to medical teaching. It goes without saying that very many conditions may be seen and studied to best advantage in hospitals devoted to the care of the acutely sick. Such, for example, are surgical disorders, fevers and the acute exanthemata. Training in the recognition and treatment of these conditions the student must certainly have, but we deprive him of a great deal when we fail to give him the opportunity of studying the course of disease as it manifests itself at varying intervals. The degenerative affections, which form so large a proportion of the diseases of adult life, cannot be properly studied by an investigation at any given moment; they demand a painstaking study extending throughout the course of the disease, in the same sense that a knowledge of typhoid fever demands study from its earliest prodromal symptoms to its terminal stages. A complaint, and to my mind a very just one, made by the medical student is that he fails to gain a definite idea of the progress of disease and of the effects of treatment during the short time a patient is at his disposal for purposes of study. This is, of course, peculiarly true of chronic disease. A student must in great measure learn for himself in after life what should have been a fundamental part of his earliest instruction. The hospital for chronic disease offers just the needed opportunity. Patients are there under complete control; the vagaries of their several diseases may be studied from month to month and year to year; the details of symptoms as they arise may be followed and tabulated; the influence of drugs may be investigated, and a knowledge of the natural history of disease made a part of the student's medical equipment. It is hard to conceive of the great foreign hospitals, like the Charité in Berlin, for example, deprived of their wards for chronic disease. They would at once lose much of their significance as teaching centres. Without such wards, where patients may be kept an indefinite time, it is evident that the student's ideas must remain fragmentary on many most important points. What can he know, for instance, of the day-to-day effect of the treatment of syphilis, or of the later aspects, when treatment is often most demanded, of many diseases of the nervous system? Argument in this line is, however, surely unnecessary. What I have said is offered merely as a protest against the too-broadly disseminated idea that an adequate clinical experience may be given students by the use merely of patients acutely sick. Until we have wards in all our hospitals for the main forms of chronic disease, they will fall far short of their possibilities for purposes of broad-minded medical teaching.

These, then, are some of the reasons which should lead us to take an active interest in the development of institutions for chronic disease; that the victims of chronic disease need the best possible care; that physicians may find among this class of patients a broad field for scientific research; that students require the instruction which the study of such cases can alone give.

When we face the facts regarding the development of a hospital on a broad scale for chronic disease in this community, we find that up to within a very few years nothing had been attempted. There have been such institutions, as of necessity there must be in any large city, but they have never excited the interest of the medical profession at large, and have therefore subserved their function in an inadequate way. What we want is a hospital for chronic disease, which will take rank with the best of our hospitals for acute disease, and which will completely fulfil the ideal of a hospital in that it will receive worthy patients needing medical assistance until they have recovered or have died.

It will be many years before philanthropy or public spirit will set aside funds sufficient to establish and maintain such an institution. In the meantime the city is forced to take care of its dependent poor, and the almshouse and almshouse hospital have come into existence. This public institution is now situated on Long Island, in Boston Harbor, and is accessible only by boat. Its location is salubrious and desirable in certain essential respects, but inconvenient, as any island deprived of constant communication with the mainland must be. Like many city institutions, this one has had its vicissitudes; it has in the last few years passed through various jurisdictions, each of which has left it with definite marks of improvement. The present management, and it is to be hoped it may be permanent, is through a board of unpaid trustees. The hospital connected with this institution numbers about three hundred beds. The building is adequate to the work, but somewhat old-fashioned in construction, and designed rather for an infirmary than a hospital in the modern sense of the word. The first step toward direct medical supervision of the hospital and its patients was made in 1895, when a visiting staff was appointed by the institutions' commissioner. Since that time visits of varying but, on the whole, increasing frequency have been made by members of the staff, and through this means and the constant co-operation of those in authority, the hospital has gradually but steadily emerged from its former condition as a mere refuge for the hopelessly sick into a hospital which should prove of wide usefulness to the community. We are hardly prepared as yet to say that more than a beginning has been made; the continuance of the work must depend in great measure upon the interest taken by the people at large and particularly by the medical profession, for it is only through such means that the financial support necessary is likely to be forthcoming. To excite public interest in this phase of the city's charity is no easy task, but it may certainly be done ultimately by the demonstration that the hospital is doing creditable work for a class of patients whose needs are great and who are worthy objects of medical care. As at present organized, with four resident medical officers and a responsible visiting staff, the hospital is in a position to care for any case which comes within its scope. The establishment of a training school for nurses has worked a transformation in the appearance and discipline of the wards, and has already demonstrated the wisdom of its foundation. There is ample opportunity for practical training and for experience in the work which properly belongs to nursing. What I have already said of the value of the hospital for chronic disease in general applies to the Long Island Hospital in particular. Attention to its development will benefit the patients, as has already been shown in a large number of instances. Closer attention to the patients will undoubtedly benefit the physicians in charge and lead to investigations of value, and, finally, the possibility of using the hospital as a centre for teaching will increase its range of usefulness as nothing else could.

Certain departments of the hospital's work are perhaps worthy of special mention. In the first place, its ward for syphilis. At present the city has no adequate means of detention of persons ill with syphilis. The Long Island Hospital theoretically permits of detention by order of the physician in charge. The arrangement is in many ways unsatisfactory, but it may, and should, lead to a more rigid system, which will finally bring the disease under absolute legal control. A hospital in which such cases are treated in the wards must be the starting point of more enlightened action in caring for this dangerous class.

Patients ill with diseases of the nervous system naturally form a large contingent of the inmates of the hospital. To those interested in this line of work a unique opportunity for investigation is offered. Remembering the Salpêtrière and its history, one has no hesitation in saying that such an institution offers the very broadest field for neurological work. Disease processes are seen there in their simplicity and in their complexity, and always in sufficient number to make comparisons profitable and instructive; one's regret is that such a material should so long have been cut off from medical instruction.

Finally, this institution should do much to further the study of pathological anatomy. The organic lesions, the understanding of which is so fundamentally important to the student of medicine, may be seen in greatest variety and abundance. Here again this hospital supplements others in providing material which is not readily obtainable elsewhere. In this department of the hospital's work we have accomplished gratifying results, largely through the indefatigable enthusiasm of Dr. G. B. Magrath, who tells me that within a year he has done about fifty autopsies. This material has been studied and used, and has formed the basis of the only systematic instruction which has yet been attempted.

These are some of the reasons which lead me to have confidence in the successful future of the hospital. To accomplish this end it must be well administered in each of its departments.

When all is said, however, the fact remains that it is a pauper institution and must struggle under the stigma which that unfortunate term implies. It seems quite unreasonable that a patient sick for six months should be the city's charge without comment, and with no loss of esteem, while the patient likely to be sick for as many years should be placed under the ban of pauperism before he is admitted to hospital care. Dr. Henry Jackson has so forcibly expressed this inconsistency, in a letter recently received from him, that I quote it with his permission:

"I regret that I cannot hear your paper next Saturday, especially as I should like to propose a radical change in the assignment of cases to our chronic hospitals. I feel that admission to our chronic hospitals at Long Island and Tewksbury should be on the same basis as admission to the other hospitals, unhampered by the stigma of a pauper institution. I realize that it is only the question of a name, and yet people dread to apply for admission to the hospital of the poorhouse, who would only too gladly go to a hospital for chronic disease. I am certain that hereby we do an injustice to many worthy people, and from a financial standpoint cause much unnecessary waste, in that patients are admitted for two or three months to the City Hospital, without any material gain to the individuals. I have expressed these views to Mayor Quincy. If you agree with me I wish you would say so at the meeting, and thereby perhaps inaugurate a reform that would prove a blessing to thousands. In other countries there are hospitals for chronic cases as well as for acute cases, but in Boston a person with a chronic disease must acknowledge that he is a pauper before he can be admitted to any public hospital."

With this statement of the case I should entirely agree. Some action must soon be taken in the direction indicated by Dr. Jackson if the Long Island Hospital and institutions of its type are to fulfil their completest function in caring for the chronic sick in a way consistent with justice and humanity.

THE NUTRITIVE VALUE OF ALBUMOSE PEPTONE.[1]

BY A. E. AUSTIN, A.M., M.D., BOSTON.

The term "peptone" has been used incorrectly for a long time to represent the digested product of albumin, irrespective of whether any separation of the albumoses and peptones has been affected or not. Practically, however, all peptones which have been placed upon the market, like Witte's peptone or somatose, consist of a mixture of peptone and albumose in varying proportions, dependent upon the agressiveness of the digesting agent as well as the length of time the digestion is allowed to continue. This must of necessity be true; because (1) as is well known, any enzyme is soon rendered inactive by the products of its own activity, so that no albuminous digestion can be carried to its final product, peptone; and (2) the separation of these two products requires so much time and care, while the amount of product obtained is so small, that pure peptone is probably never seen except in the laboratory, and never commercially. Nor is separation of any importance except as a matter of chemical interest, for practically it has been shown[2] that albumose is equally as well absorbed as peptone; and even under certain circumstances acid albumin itself may be absorbed. This presupposes, of course, some change in its passage of the intestinal wall, for in the blood we meet only the native albumins. Whether we are to suppose that this change takes place by the action of the cells of the mucous membrane or of the white blood corpuscles, which are so enormously increased during digestion, we do not know; probably the latter. At any rate, it has been proven when peptone is injected directly into the blood it appears almost at once as albumose peptone in the urine, and the animal suffers more or less.[3] That this is due to the presence of peptone, and not to the accompanying peptotoxin of Brieger, has been fully proven. We must also take into consideration, as substantiating this fact, that as soon as the peptone becomes absorbed in the usual manner, that is, through the intestinal wall, its toxicity is lost. On the other hand, in some experiments conducted by me under Liebriech, I was unable to show that Witte's peptone lost a large portion of its toxicity when injected, if it were previously extracted with alcohol, and then only the purified peptone injected. Rabbits, one kilogramme in weight, easily withstood an amount of the substance thus treated, which had previously proved fatal to rabbits of like weight.

But it is not with this phase of the subject that we wish to interest ourselves in the following work, but rather with the actual value of peptone preparations as food stuffs. Of course, under normal conditions, one would not think of employing such preparations, for the native albumins, casein, globulin, hemoglobin, and the like, are readily and easily converted into assimilable and absorbable forms of nutriment by the digestive juices; but rather in those cases where from disease the peptonizing functions of the various ferments are lost or very much impaired. We could mention many such, atrophy of stomach mucosa, cancer, malignant disease of the pancreas, etc., in all of which digestion suffered most seriously. It, of course, can make no difference in what form the albumin is absorbed; it must always serve as a source of power to the body; a portion of the same must also serve to replace the cells which daily disentegrate and are lost. In the latter case the cells must be formed from the converted products of the absorbable albumin, that is, albumose peptone; and from feeding experiments we can learn whether such digestive products can fully replace the native albumin in the formation of cells. This has been answered in the affirmative by v. Gerlach,[4] E. Pfeiffer,[5] etc., but their experiments were carried out during a period of only ten to fifteen days, a period much too short to settle a matter of this importance. Both of these investigators found what, as we shall see later, was not met with by me, an irritation of the stomach and intestines, as evidenced by diarrhea and nausea.

My experiments were performed with a solution of albumose peptone[6] containing 12 per cent. alcohol for preservative purposes. At first it was necessary to determine its value in terms of nitrogen, for no matter in what form albuminous food may appear, its actual nutritive value depends upon the amount of nitrogen which it contains. This was determined by the Kjeldahl process, and it was found that in every 250 cubic centimetres of this fluid there were 3.85 grammes of nitrogen in the form of albumose peptone, entirely albumin free, for it could not be precipitated by heat, but was precipitated by acids and redissolved by heating, tests amply sufficient to identify this substance as albumose peptone. According to Hammersten, this would be equivalent to 118 grammes of lean beef or 24.06 grammes of albumin; or by actual quantitative determination, one gramme of Witte's peptone is found to contain 0.0532 gramme of nitrogen, and hence 250 cubic centimetres of this solution contain 72.4 grammes of albumose peptone.

I. FEEDING WITH ALBUMOSE PEPTONE ALONE DURING THE FIRST PERIOD OF SIX DAYS.

A dog weighing 10.88 kilogrammes was given 250 cubic centimetres of this mixture daily, and as the dog refused to take it, the fluid was poured into the dog's stomach through a stomach tube. The dog received nothing but this, with the exception of all the water which it wished. On one day only was the feeding omitted. The dog rapidly lost weight and became weaker, weighing at the end of the second day 10.65 kilogrammes, and at the end of six days, when the experiment was interrupted, 10.2 kilogrammes, or a loss of 680 grammes. During this time the urine and feces were found to contain 28.552 grammes of nitrogen, while the food contained 19.25 grammes of nitrogen, showing a loss to the body of 9.27 grammes of nitrogen, which, multiplied by the constant factor 6.25, would give a loss of albumin in the body of 57.93 grammes, or 278.1 grammes of albuminous tissue as against the absolute loss of weight, amounting to 680 grammes. The difference may have been due to loss of water and fat, but of course is partially the result of error.

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[1] From the Chemical Laboratory of Tufts College Medical School.

[2] E. Bruecke: Ueber die Pepton-theorien. Setzungsber d. Wiener Akad., Bd. 59, ii, S 617, 1869.

[3] F. Hofmeister: Ueber das Schicksal des Peptones im Blute. Zeit. f. physiolog. Chemie, S. 127, 1881.

[4] V. Gerlach: Die Peptone in ihrer wissenschaftlichen und praktischen Bedeutung. Hamburg u. Leipzig, 1891, S. 63.

[5] E. Pfeiffer: Berliner klin. Wochenschrift, Bd. 32, No. 30, 1885.

[6] This solution was furnished me by the Bovox Co., Salem, and is sold by them under the name of Hemapeptos.

This proves conclusively that the peptone was absorbed and utilized as far as it would go, but though the dog was receiving much more albumin in proportion to its weight than a man of average weight (70 kilogrammes) would receive with a mixed diet (according to Bunge, 100 grammes), still the mere fact that the dog was compelled to supply the threefold function of food, namely, repair of cells, production of muscular energy and maintenance of heat with albumin alone accounts for the great nitrogenous loss. The most remarkable thing about the condition of the dog was the remarkable muscular weakness, so entirely out of proportion to the loss of weight. At the end of six days the dog was so weak that it was barely able to walk, and yet it did not appear to be so much emaciated as its weight shows.

II. ALBUMOSE PEPTONE AND CARBOHYDRATES.

The dog was given an abundant mixed diet for fourteen days, weighing then 11.33 kilogrammes. Then the second period was entered into with a diet consisting of 250 cubic centimetres of the peptone solution, daily, and 200 grammes of mashed potato, which contain, according to Bunge's tables, 4 grammes of albumin, 2 grammes of fat and 40 grammes of carbohydrate. This period lasted seven days, and while the dog lost the same amount of weight as in the previous period of six days, it remained strong and lively. During this period the dog took 23.1 grammes of nitrogen in the peptone (one day omitted) and 2.24 grammes of nitrogen in the potato, a total of 25.34 grammes of nitrogen, and during this time eliminated in urine and feces 34.62 grammes of nitrogen, showing still an enormous loss of the nitrogen constituents of the body in spite of the daily 40 grammes of carbohydrate. The weight diminished to 10.2 kilogrammes a difference of 1,130 grammes. The loss of 7.28 grammes of nitrogen (32.62 less 25.34) would be equivalent to 45.5 grammes albumin or 218.4 grammes albuminous tissue; the difference, as before, must be due to fat and water. Two agencies are evidently at work during this period to spare the albuminous tissue: (1) the additional amount of fat, as probably the additional weight at the beginning of this period was largely due to fat, and (2) to the albumin-sparing influence of the carbohydrate, for while the loss of weight is greater than in the first period, the loss of nitrogen from the body is less. This same method of feeding was now continued for eight days longer, making a total period of sixteen days, during which the dog's weight had fallen to 8.731 kilogrammes, but the dog was still active and showed no signs of weakness. During this period of eight days the amount of nitrogen taken was peptone 23.1 grammes and native albumin (potato) 4.48 grammes, a total of 27.58 grammes, and there were eliminated in urine and feces 29.25 grammes, or a loss to the body of 1.67 grammes, equivalent to 50.1 grammes albuminous tissue; the balance lost (1,469 grammes less this) must have been fat and water. Here we see illustrated the fact that the more emaciated the body becomes the more firmly it clings to its nitrogenous elements, and the nitrogenous loss steadily diminished in our three periods. This fact was also established by Senator and Munk[7] upon Cetti, the fasting man.

The nitrogen estimations were discontinued the next period, and weight of the dog was relied upon for the loss or increase of flesh. The food was now changed to 200 grammes of dried rice daily, well cooked, containing, according to Bunge, 16 grammes of albumin, 1.8 grammes of fat and 154 grammes of carbohydrates, and 250 cubic centimetres of the peptone mixture as before. Under this feeding the weight of the dog steadily increased from the initial weight of 8.731 kilogrammes to 9.978 kilogrammes on the eighteenth day and 10.499 on the twenty-eighth day. Here we find that while 24.06 grammes of albumin as peptone and 4 grammes of native albumin were unable to stay loss of weight, 24.06 grammes of peptone and 16 grammes of native albumin not only stay this loss but cause an increase of weight; hence a portion of the peptone is probably utilized to form increased albuminous tissue. To verify this still further the dog was now kept twenty-eight days upon a sole diet of 200 grammes of rice, or only 16 grammes of albumin. At the end of this time the weight of the dog was 11.565 kilogrammes, which shows that the peptone must be regarded as a tissue builder, as the dog had gained 702 grammes less than in the previous period of twenty-eight days. At no time during this entire experiment was there any vomiting or diarrhea. It seems to be conclusively proven:

(1) That it is impossible to maintain life upon peptone alone, as it is upon all other strictly nitrogenous foods.

(2) That, upon the addition of a small amount of carbohydrate, the nitrogenous loss from the body, with the same amount of albuminous food, is very much retarded.

(3) Peptone must be regarded as not only able to replace native albumin as a means of checking nitrogenous loss, but also as a means of increasing albuminous tissue.

(4) That, for a period of forty-five consecutive days, at least, peptone causes no diarrhea or disturbance of the stomach.

MR. TREVES. — Mr. Treves received a most enthusiastic send-off from a large number of students of the London Hospital at Waterloo station on Saturday last. A number of his colleagues and many personal friends were also present to say good bye. Mr. Treves sailed for Capetown in the *Dunvegan Castle*, which touched at Madeira on November 15th. The *Briton*, in which Sir William MacCormac and Mr. G. H. Makins are passengers, touched at Madeira on November 8th, and is due at Capetown on November 21st.

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[7] Berliner klin. Wochenschrift, 1887, 425.

Clinical Department.

A CASE OF OSTEOMYELITIS OF THE FEMUR. — A CASE OF KOCHER'S OPERATION FOR THE RADICAL CURE OF HERNIA.[1]

BY F. B. LUND, M.D., BOSTON.

Case I. This patient is of interest as being one of recovery from osteomyelitis of the femur in a very severe case in which, although amputation was thought of, a conservative operation proved successful. The patient, who is forty-two years old, is said to have strained his knee when seven years of age. A swelling appeared and afterwards broke, and in the course of a year or two several pieces of dead bone were extruded. He got about on his leg after that, but there has been ever since stiffness of the knee and more or less swelling. He has been engaged in an active employment. He came to the service of Dr. Monks at City Hospital the 29th of September, 1899, having had an attack of pain attended by swelling of the left knee seven weeks before. An incision had been made on the outer side of the thigh by a physician and considerable pus had escaped. The knee-joint was seen to be distended with fluid. There was great thickening and evidence of septic infection, extending up the whole length of the thigh, and a sinus discharging profusely on the outer side of the femur.

The writer operated under ether, making an incision on the outer side of the thigh. On reaching the bone it was found that the entire periosteum had been stripped off and the front and outer sides of the femur were bare. On chiselling through into the cancellous tissue of the lower end of the bone, it was found riddled with pus. The cancellous tissue was almost all gouged out and a continuous opening was chiselled on the outside of the femur almost to the trochanter, where the marrow appeared healthy, thus converting the bone into a trough instead of a tube. Incision of the knee-joint showed it was full of pus. It was drained by two anterior lateral incisions on each side of the patella and two lateral posterior incisions. The knee-joint was also opened from behind so that drainage of the knee was obtained by a large tube through the popliteal space. Another opening was made for drainage through the inflamed tissues on the outer side of the calf below, another on the front and inner side of the thigh. The whole shaft of the femur was packed with iodoform gauze, also the knee-joint.

The operation was borne very well, and the wounds steadily healed up without any interruptions, so that there are now no sinuses and his leg is in very good condition. He has a stiff knee, but he is now getting a little motion and is able to walk about without apparatus. It seemed almost a helpless case. The cultures from the marrow showed staphylococcus pyogenes and streptococcus. Nearly three months were required for complete healing. For one month there was quite profuse discharge from the femur and the knee-joint.

Various methods of draining septic knee-joints have been suggested, including the transverse incision across the patellar tendon and packing with gauze. This method does not give dependent drainage, and generally after ten days to several weeks the articular cartilage separates and another operation is required to remove it.

A limited experience with this method has been unsatisfactory and the case shown tonight, as well as others seen in the practice of colleagues have shown that for efficient drainage of the knee-joint the transverse incision across the patellar tendon is not necessary, as excellent results can be secured by lateral incisions and incisions through the popliteal space.

Case II. The other patient the writer had intended to show to-night, but who is not here, is a man upon whom Kocher's operation for radical cure of hernia was performed, in the service of Dr. William P. Bolles. It was an interesting case in many particulars. Of the various operations for the radical cure of hernia the writer has felt that the most satisfactory were those in which an attempt was made to restore the obliquity of the inguinal canal, employing the anatomical structures normally present, and in which the sac was not used as a pad to prevent hernia. The writer has therefore adopted Halsted's and Bassini's operations in a considerable number of cases, with very satisfactory results. If there has been any weak point after these operations, it has seemed to be at the internal ring where the cord came out. Attempts have been made to prevent that by carrying the cord upwards and outwards. Another difficulty has been that where the spermatic cord was surrounded by large numbers of veins which would have required a good deal of stretching to get the external aponeurosis over the top of it, it has been necessary to remove veins, and although no harm has resulted, it does not seem desirable to remove them all in ordinary cases.

The patient on whom Kocher's operation was performed was a laborer who had a hernia only six weeks, a left scrotal hernia as large as two fists. He had a severe bronchitis and had to hold the hernia in when he coughed. The ring was quite large. He had to be kept in hospital for a month before operation on account of this bronchitis, and when we did operate we wanted to do the quickest operation possible, and it seemed that Kocher's operation would be the quickest and best in that case; therefore that operation was performed. The sac was laid bare, dissected out and separated from the cord. A short incision was made outside and above the internal abdominal ring into the abdominal cavity and a pair of forceps passed down through the abdominal cavity to the bottom of the sac, which was turned inside out, drawn out through the little abdominal opening, sutured in place and cut off. This procedure brings the sac wrong side out lying as a pad along the back of the inguinal canal and of the spermatic cord. It is pretty hard to see how anything can get out after that is done and the canal sutured in front of the sac. The patient was troubled by constant cough during convalescence. He was kept in bed three weeks. After five weeks he went back to hard labor and he has now, three months after the operation, as solid a hernia scar as I have ever seen, with no weak spot at the internal ring.

A Test Case. — A test case brought in Omaha, Neb., to determine the legality of osteopathy in that State has resulted, according to the *Journal of the American Medical Association*, in the osteopath being found not guilty of the charge — practising medicine without a certificate. The case will be taken into the higher courts.

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[1] Cases presented at a meeting of the Surgical Section Suffolk District Medical Society, April 5, 1899.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D., BOSTON.

BACTERIOLOGICAL EXAMINATION OF OPERATION GLOVES.

Döderlein was the first to make bacteriological examination of operation gloves. He was led to make his experiments by having at the conclusion of an operation made cultures from the bloody fluid squeezed from the cotton gloves worn during an operation, and was astonished at the large numbers of colonies of bacteria which grew on an agar petri dish in the brood oven. In an article on this subject,[1] he states that he feared for the life of his patient, who, notwithstanding, made an uneventful recovery, demonstrating that the body possesses the power of destroying bacteria, providing they are not of a specific and pathogenic variety. He then began a systematic examination of cotton gloves worn by himself, both during and after the operation, with the following results:

After thorough disinfection of the hands by Furbinger's method, cotton gloves, sterilized by same, were put on. Within fifteen or twenty minutes after the beginning of the operation, from a drop of fluid squeezed from the gloves countless colonies of bacteria could be grown. He observed that the gloves of assistants who handled the instruments of suture material were much less infected, proportionately less the drier and more free from blood their hands remained. Experiments were then made after sterilizing the hands as before, moistening the gloves in sterile salt solution. Instead of operating, the hands were now moved through the air, cultures being taken at intervals, and within half an hour colonies were found to develop. Experiments made with gloves permeated with paraffine, as recommended by Menge, gave no better results. Döderlein then began experimenting with rubber gloves. After sterilizing the hands, after Furbinger's method, the rubber gloves, which were sterilized by boiling, were put on. Cultures made from time to time during the operation from the gloves succeeded in developing colonies of bacteria, but in much smaller number than when the cotton gloves were employed. The author now concluded that if Krönig's view is correct that bacteria were held in the crevices of the epidermis, deep in folds of the skin, the masceration of the epidermis resulting from prolonged wearing of the gloves must set free countless bacteria. Great was his surprise to find after a prolonged operation that after precipitating the corrosive sublimate from the hands by ammonia sulphide, according to Geppert, in case cultures were made from the hands, the culture media remained entirely free from bacterial growth in most instances. This, Döderlein concludes, would indicate that the skin may be made entirely sterile in its deeper layers as well as the superficial surface, and that we must therefore regard the bacteria suspended in the air as the source of bacteria found on the gloves. From the experiments Döderlein concludes that the use of cotton gloves, instead of increasing asepsis, diminishes it, on account of the texture, which, when moist, furnishes such a favorable lodging surface for particles of dust and bacteria suspended in the air.

BLOODLESSNESS AS A LOCAL ANESTHETIC.

Koffmann[2] calls attention to the fact that bloodlessness, as produced by the elastic tourniquet, makes the area below the band anesthetic if a sufficient time is allowed to elapse before the operation is undertaken, and if the area immediately below the bandage is not invaded. The bandage must in all cases be very tightly applied.

Braun,[3] in commenting upon this article, shows that it is only a revival of an old method which has long ago been rightly discarded. The anesthesia is not produced by the mechanical obstruction of the circulation and the bloodlessness of the region, but by the compression which the tightness of the band produces upon the main nerve-trunk. This is shown by the facts that it is produced by only the tightening of the band altogether, more than is required to effect the circulation, and also that the region immediately below the band is not anesthetized, although the blood supply is cut off.

This method is not only very painful in its after-effects upon the patient, but the compression is liable to result in an injury to the nerve trunk that is permanent, and may be followed by a necrosis at the point of pressure or by a permanent injury to the nerve.

INFILTRATION ANESTHESIA.

Heinze[4] has conducted a series of experiments that are of great value in determining the local anesthetic power of various agents that are now in vogue for this form of anesthesia. The tests were not made upon animals or upon various individuals seen in the course of clinical work, but upon his own person.

The action of varying anesthetic solutions he found to be due entirely to the amount of cocaine they contained, and not from peculiar properties that have from time to time been attributed to the combined action of their other constituents.

His experiments further demonstrated that the action of eucaine B and cocaine were equal. One reason of this is that, as shown by Braun's researches, their osmotic tensions are about the same. The anesthesia which they produce in 0.1 per cent., and still weaker solutions last about fifteen minutes. The irritant action of eucaine B is less even than that of cocaine; five- and six-per-cent. solutions were not as painful when injected as cocaine solutions of the same strengths.

The eucaine-B solution was found to be less toxic than cocaine, and has the advantage of being capable of sterilization. He recommends its employment in place of cocaine, and that it should be generally employed in infiltration anesthesia in weak solution, as in the following formula:

Eucaine B	gr. iss
Sodium chloride	gr. xij
Distilled water	f iij ij

Such a solution is capable of being sterilized at any time without interfering with its efficiency. It causes no swelling, and therefore does not injure the tissues or interfere with primary union. The eucaine B is the only anesthetic in the solution, the salt simply preventing irritation.

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[1] Beiträge zur Geburtshülfe und Gynäkologie, Bd. i, A. 1, 1898; St. Paul Medical Journal, May, 1899.

[2] Cent. für Chir., 1898, No. 40; American Journal of the Medical Sciences, June, 1899, p. 725.

[3] Cent. für Chir., 1898, No. 43.

[4] Arch. für path. Anat. und Phys., 1898, Band cliii, Heft 3; American Journal of the Medical Sciences, June, 1899, p. 726.

Braun[5] deals in a critical manner with the different methods that have been employed for local anesthesia — the mechanical form, that partly mechanical and partly due to drugs, and, lastly, that due entirely to the action of certain drugs on the terminal filaments of the nerves. This author agrees with Heinze that eucaine B and cocaine are the only drugs that really produce local anesthesia without harmful after-effects; they paralyze without irritation or injury to the tissues, and produce an anesthesia, in dilute solutions, that is sufficiently lasting for operative purposes. He recommends its employment in the same solution as given above, and for the same reasons prefers it to cocaine.

His researches and those of others have shown that while eucaine B, when employed in five- or ten-per-cent. solutions, cannot fail occasionally to produce symptoms of poisoning, it is an ideal and perfectly harmless drug when properly employed for infiltration anesthesia. When employed in the solution described above and sterilized it has never interfered with the normal course of healing in the wounds in which it was employed.

He notes the fact that this local anesthetic, like cocaine, cannot be employed where heat, as the actual cautery, is to be employed, as the heat destroys the anesthetic properties of the drug. The osmotically indifferent warmed solution of eucaine B is very serviceable in opening acute or chronic abscesses, and does not give rise to the pain so often noted with Schleich's solutions. He found the one-per-cent. eucaine-B solution far preferable to local infiltration anesthesia where it is desired to effect the conductivity of the nerve trunk and produce regional anesthesia, as in the fingers and toes. The action in these cases he considers all that could be desired. Six per cent. of salt should be added to all solutions. Undoubtedly there are cases in which the stronger solutions are preferable to infiltration of the tissues by the more diluted ones, but in general weak solutions should be employed where equally good results can be attained.

A NEW METHOD OF TEMPORARILY RESECTING THE PALATE.

Partsch, of Breslau, after criticising the various methods which have been devised to give access to nasopharyngeal tumors arising from the base of the skull, describes an operation which he has devised and carried out successfully in one case.[6] The operation is as follows: Incision along the line of reflection of the mucous membrane from the lip to the alveolus of the upper jaw. This cut is made from the second molar of one side to the second molar of the other. The bone is exposed with an elevatorium. The nasal cavity is opened by division of the mucous membrane all round the pyriform opening. The soft parts are retracted upward. With a chisel the nasal septum is divided just above the floor of the nose. In the same way the anterior and external wall of the antrum of Highmore is divided, just above the antral floor, as far back as the maxillary tubercle. With moderate pressure it is easy to turn the whole palate and alveolus downward like a trap-door. This gives a space in which the tumor will be found to lie within easy reach. After removal of the tumor the displaced tissues are readily replaced, and the wound in the mucous membrane is sutured. The bones readily unite and no visible scar is left.

THE DEVELOPMENT AND NATURE OF TUMORS OF THE SALIVARY GLANDS.

Hinsberg[7] summarizes the results of a careful clinical, microscopical, and pathological study of the various tumors that occur in these glands, as follows:

(1) The encapsulated tumors of the salivary gland, and probably those which involve them from other portions of the cranium, consist of epithelial elements and a stroma that is of the nature of bone cartilage.

(2) They are benign when they present an organic arrangement, as, for instance, the epithelium and connective tissue of a gland. They are malignant when this order is altered, and we find the epithelium, either from trauma or by operation, in a wrong relation to the surrounding tissues, as in the connective tissue of the parotid gland. It develops, then, without the early characteristic stroma. The latter is also wanting when the tumor is malignant; this the author has confirmed in a series of cases.

(3) Both components of the tumor — the epithelium and the stroma — develop from embryonal tissue in the Cohnheim sense. In the embryo the conditions for a common development are present, as the parotid as well as the submaxillary gland, before they are encapsulated, lie with individual acini close and firm in the periosteum of the inferior maxilla, that is, in the perichondrium of the Reichert's cartilage. The cylindrical epithelium comes undoubtedly from the gland itself, perhaps also the pavement epithelium, perhaps from the elongated layer of cells.

(4) The undoubted evidence which confirms the author in the opinion that the tumors develop from the endothelium of ths lymph spaces and ducts is the following:

He does not believe, with Volkmann, that these tumors commence in the endothelium or that the origin of the tumor can be found microscopically in the tumor itself. He believes that the tissues present in various stroma, especially the cartilaginous, osseous, and hyaline, are not the result of a metaplasia, but that they result from special conditions.

(5) He holds that the theory that they are the result of a combination of epithelium with osteochondromatous tissues from outside is justified by the fact that the nature of the epithelial cells has been shown to justify such a belief. The arrangement is epithelial in its exquisite delicacy, and the arrangement of the cells complex. The fact that sometimes there is no direct connection with the epithelium of the gland is not against this theory. Such connection is not to be expected since it is developed from embryonal tissue. The presence of osseous and cartilaginous cells admits of no other explanation, while the conditions for such development are present in the embryo.

THE OPERATIVE TREATMENT OF EMPYEMA OF THE FRONTAL SINUS.

Acting on the principle that in suppurative disease of a rigid cavity an outlet must be provided at the lowest point, Barth[8] has devised a simple and effective plan for the inspection, treatment and drainage of the frontal sinus. A vertical incision two and a half centimetres in length is made near the side of the root of the nose. Through this the nasal bone and the nasal process of the frontal bone are divided with the chisel and turned outward. While only one skin incision is required, it is necessary to make three cuts in the bone, one vertical and two horizontal, so as to form a bone flap. The mucous membrane of the sinus bulging into the opening is opened, then cleaned, and temporarily packed. The upper part of the nasal cavity is next rendered completely free and patent by work done with chisel, bone-forceps, scissors, and forceps. so that there results a wide communication between nose and frontal sinus. Through the trap-door, which is the feature of this operation, one can examine the ethmoidal cells, and if they are involved can treat them. After again cleaning, if necessary curetting the frontal sinus, a drainage tube is inserted between the nose and the sinus and the external wound closed with sutures. Barth's patients have been able to resume their work as day laborers in two weeks.

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[5] Archiv für klin. Chir., September, 1898; American Journal of the Medical Sciences, June, 1899, p. 726.

[6] Archiv für klinische Chirurgie, Band lvii, S. 847; Annals of Surgery, April, 1899, p. 529.

[7] Deut. Zeit. f. Chir., 1899, Band li, Hefte 3 u. 4; American Journal of the Medical Sciences, July, 1899, p. 102.

[8] Archiv für klinische Chirurgie, Band lvii, S. 756; Annals of Surgery, April, 1899, p. 523.

DIVISION OF THE MOTOR NERVES AS A CAUSE OF VENTRAL HERNIA FOLLOWING EXTRAMEDIAN ABDOMINAL SECTION.

Assmy [9] states that if ventral herniæ were simply the result of a stretching of the cicatrix, the following anatomical conditions should be observed:

The yielding scar should represent the external covering, the hernial covering—the peritoneum—whether free or adherent, should represent the hernial sac. The pillars of the hernial orifice should be represented by the edges of the rectus muscle on either side, if the original incision was through its substance, or if external to it, on the outside, by portions of the oblique and transversalis muscles. Or, if the incision was still further removed from the median line, these last-named muscles would be found on either side. Instead of the above conditions the following is the actual finding: The scar does not alone constitute the external covering of the hernia; we find, in addition, normal skin—in other terms, the protrusion has gone beyond the boundary of the original hernia and involved the neighboring tissue. In operations for the relief of this condition it is customary to excise the edges of the ring, the tissue immediately adjoining the hernia being seemingly too atrophied to use. Till recently no systematic attempts seem to have been made to analyze the constituents of such tissues. A careful study, such as was made in a case in the Heidelberg clinic by Dr. Assmy will reveal conditions that may be summed up as follows: In extramedian incisions, parallel or nearly parallel to the linea alba, the terminal branches of the intercostal nerves supplying the rectus muscle are divided. There is no anastomosis with the nerves on the opposite side, and in all probability none with neighboring nerves, certainly not in the central portion of the muscle. Consequently, that part of the muscle distal to the severed nerve loses its innervation and undergoes paralysis and atrophy. In the further development of a hernia, the atrophic and hence unresisting portion of the abdominal wall is protruded in response to intra-abdominal pressure, just as the cheek is puffed out in unilateral facial paralysis. On the median side the scar loses its support as the atrophic muscles are useless. When contraction of the oblique and transverse muscles occurs, there is naturally a giving way at this point where two layers of weakened tissue exist. In great increase of abdominal pressure there ensues a stretching at the border of the cicatrix as well as of the cicatrix itself, and by the adherence of the sheath of the muscle to the scar, more or less of the normal muscular substance becomes involved in the external protrusion.

A series of experiments on animals accurately confirms the clinical experience. In view of such studies one must conclude that in lateral laparotomy the hernia is due chiefly to a neurotic atrophy. More care must hereafter be employed in determining the site and direction of the abdominal incision that the least damage may be inflicted on the motor nerves.[10]

OPERATIONS IN GASTRIC ULCER.

Bidwell,[11] in a paper read before the West London District Branch of the British Medical Association, sums up the class of cases of gastric ulcer in which an operation should be done as follows:

(1) In all cases of perforation at the very earliest possible moment; also in subphrenic abscess.

(2) In cases of hemorrhage (*a*) when there is continual oozing of blood, especially if the stomach be dilated, and (*b*) in cases of repeated severe hemorrhage.

(3) In cases where there is severe pain and vomiting unaffected by treatment, and which is producing progressive emaciation.

(4) In cases of dilatation of the stomach from contraction within or from adhesions outside the stomach.

The operations to be performed are: In class 1, laparotomy and suture of the ulcer; in class 2, gastrotomy and suture of the ulcer, with a purse-string suture combined with gastro-enterostomy; in class 3, gastro-enterostomy, in order to give physiological rest to the ulcer; and in class 4, either gastro-enterostomy, or, if the pylorus be affected, pyloroplasty or pylorectomy.

As the surgery of gastric ulcer is a comparatively new subject, the author states that he has had, so to speak, to make a case in its favor. It has been his endeavor to show that no patient ought to be allowed to die either from perforation, or from hemorrhage from a gastric ulcer, without a surgical effort being made to save him; that the earlier such effort is made the better the chance of success, and, finally, that surgery offers much hope of success in other cases which resist the art of the physician.

RESULT OF OPERATIONS FOR PYLORIC OBSTRUCTION.

Mr. Rutherford Morison,[12] at a meeting of the Clinical Society of London, brought forward a very interesting series of cases illustrating the result of operations for pyloric obstruction. The patients were shown at the meeting and the growths removed were exhibited by the lantern.

His first case was that of recovery after pyloroplasty for stricture of the pylorus. The patient was a woman who was operated on in October, 1894, the case being published in the *Lancet* of February 16, 1895, page 396. At the time of the operation she was fed entirely by the rectum. She was now in perfect health and could eat anything. He made an incision one and a quarter inches from the pylorus, passed a guide through it, and then made an incision through all the coats, and then sutured the incision so that the line of union was transverse to the incision. Mr. Morison performed this operation nineteen times, and the patients had all recovered. Relapses did not occur.

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[9] Annals of Surgery, May, 1899, p. 655.

[10] Beiträge zur klinischen Chirurgie, Band xxiii, Heft 1.

[11] American Journal of the Medical Sciences, September, 1899, p. 251.

[12] Lancet, April 1, 1899, p. 901.

His second series of cases were cases of pylorectomy for malignant disease. The first of these was a woman, age forty years, who had had severe pain after food for six months, and vomiting and emaciation for two months. There was a tumor the size of an orange which could be felt near the umbilicus, and which proved to be a scirrhous mass. Pylorectomy was performed in October, 1897. She could now eat anything, was in good health, weighed one and a half stones more than before the operation, and there was no evidence of recurrence. The second case was that of a man, age forty-eight years, who had had severe pain after food and emaciation for some time. There was a growth of encephaloid cancer reaching nearly up to the pylorus, which was excised with the growth. He was now in good health and had gained nineteen pounds in the six months after the operation. The third case was that of a woman, age forty years, who had had pain and vomiting for a year. There was great dilatation of the stomach due to an adenocarcinomatous growth of the size of a walnut in the pylorus. She had gained two stones since the operation in September, 1898. His fourth case was that of a man, aged thirty-eight years, who had rapidly emaciated and suffered from pain and vomiting for ten weeks. There was an extensive colloid carcinoma involving the pyloric half of the stomach, which was removed, and the cardiac end was joined to the duodenum by a modification of Billroth's method. A chain of glands was affected and had to be removed. The patient was now in excellent health and there were no signs of recurrence. His fifth case was that of a man, age forty-one years, on whom pylorectomy had been performed six weeks ago for a small scirrhous mass. The man was now quite well and had gained more than a stone in weight. The operation was in Mr. Morison's opinion, safer than gastro-enterostomy and should be performed whenever the tumor was movable, the size of the tumor not being an important consideration.

ON THE SURGICAL ANATOMY OF THE BILE DUCTS AND A NEW INCISION FOR THEIR EXPOSURE.

Bevan[18] recommends a new incision for exposure of the bile ducts. He states that the incision should be divided into a primary portion and the extended parts of the incision. The primary part, which can be employed for exploration or simple cholecystotomy, is an italic letter *f*-shaped incision along or through the outer border of the rectus muscle. This may be made from three to four inches in length. The extended parts of the incision are added to this when required and can be made from an inch to three inches in length, as the thickness of the abdominal wall and the character of the operation demand. When complete, the incision furnishes much freer access to the gall-bladder and bile ducts than can be obtained by any other form of incision. The edges of the incision are readily held apart without tension, and the entire bile tract is freely exposed for examination and operative procedures.

Anatomically, the incision, for an incision of its length, injures a minimum amount of the nerve supply of the abdominal wall, because, even though the incision is made of great length, the extended parts of the incision run almost parallel with the nerve supply of the abdominal muscles. By a division of the rectus in part and of the internal and external oblique and transversalis muscles, the incision can be widely separated without tension. The fact that the incision is in close contact with the costal arch makes resulting hernia improbable, as a cicatrix in the upper part of the abdominal wall does not as readily yield and produce hernia as a cicatrix in the lower portion of the abdominal wall.

The following structures are divided in the incision: Skin, superficial fascia, external oblique muscle and aponeurosis, internal oblique muscle and aponeurosis, transversalis muscle and aponeurosis, rectus muscle, the transversalis fascia, which is here very thin, and the peritoneum. A few of the terminal branches of the intercostal nerves to the rectus are divided, and the anastomosis between the internal mammary and deep epigastric arteries in the substance of the rectus is divided, and usually needs ligating. The incision should not be nearer than three-quarters of an inch to the costal arch.

When the complete incision is made, the following structures can be seen: The liver and gall-bladder above, the round ligament of the liver and the stomach to the left; the duodenum, the transverse colon, and great omentum below. The transverse colon, and omentum and duodenum should be pushed downward, the stomach to the left, and the liver should be held up by the fingers of an assistant. Then will be exposed to full view the gastro hepatic or lesser omentum, which contains the following structures between its two layers: The portal vein, the hepatic artery, the common, cystic and hepatic ducts, the gastroduodenalis artery and pyloric vein, and the cystic artery and vein, the nerve supply of the liver and the lymphatic vessels and several lymphatic glands. The foramen of Winslow is at the right free edge of the lesser omentum. These structures and their relations are well seen after the anterior layer of the lesser omentum has been removed. The left index finger can be passed into the foramen of Winslow and the extrahepatic ducts palpated throughout their extent, except the portion of the common duct covered by the pancreas.

ABDOMINAL ANEURISM TREATED BY INSERTION OF SILVER WIRE.

Mr. Langton,[14] at a meeting of the Clinical Society of London, held March 24th, related a case of aneurism of the abdominal aorta successfully treated by the introduction of silver wire. The patient was a woman who had had an abdominal swelling since the birth of a child three months before. She had wasted, having lost two stones in twelve months. On admission there was a pulsating tumor in the epigastrium, three and a half inches in diameter, which was movable laterally but not vertically, and there was a loud systolic murmur over it. In April, 1898, as the swelling was increasing and the pain was very severe, an exploratory laparotomy was performed and the tu-

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[13] Annals of Surgery, July, 1899, p. 15.

[14] Lancet, April 1, 1899, p. 901.

mor was found to be an aneurism of the abdominal aorta. A trocar was introduced into the sac and not much blood issued from the canula when the trocar was withdrawn. As there was some difficulty in introducing salmon gut into the sac, silver wire was used and five feet were introduced without difficulty. The puncture was secured with a silk ligature. There were some vomiting and a good deal of restlessness after the operation. A month later the tumor was carefully examined and it was found that consolidation was occurring. As a result of the manipulation, however, there was a return of the vomiting, a severe rigor and collapse. These alarming symptoms yielded to treatment and the after progress was uneventful. She had been seen from time to time and there was now a hard mass in the middle line much smaller than before the operation and the thrill and bruit had disappeared. Her health was excellent. There were only a few cases of successful treatment by this method on record.

(To be continued.)

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

HOWARD A. LOTHROP, M.D., SECRETARY.

Regular meeting Saturday, October 28, 1899, Dr. Herbert L. Burrell in the chair.

Dr. E. W. Taylor read a paper on

THE HOSPITAL FOR CHRONIC DISEASE.[1]

Dr. Post: I have but little to add to Dr. Taylor's paper, but I do want to say in the first place one word in regard to the value of such a hospital as that on Long Island in some forms of surgical diseases; that is the one place in the city where the final results of surgical operations may be studied, and I am sure students who could make use of the opportunities there would gain different ideas occasionally of the value of some operations which they see only as they are performed in the amphitheatre. But the point on which I specially wish to speak is in regard to the connection of that hospital with syphilis. Syphilitics are not admitted to our general hospitals, and very properly. It is not right that patients with contagious diseases of any sort should be placed side by side with other patients in the wards. The regulations of one of our hospitals read that patients with venereal diseases are not admitted as free patients, I judge by the wording, not because they were thought of as dangerous to the other patients of the hospital, but because they were looked upon as patients who were not entitled to medical charity, and for that reason, where they are given treatment at all, they are relegated to the pauper institution. It is often said that patients with syphilis are individuals who are suffering from their own misdeeds, and it is hardly desirable that the community should furnish any special treatment for them. I do not know but it is superfluous to say in this meeting that that is an altogether erroneous view. The number of patients who are syphilitic by no fault of their own, but by extragenital contagion, is not far short of 10 per cent. The percentage of cases who are innocently syphilitic, who have the disease brought to them, or who are born hereditarily syphilitic, is very much larger. The number of innocently syphilized among women and children is something like 19 out of 100, so that even from that standpoint such patients deserve charitable treatment, and I am sure the genius of medical charity to-day would not look down upon any class as ruled out from medical charity. But it is not alone for the sake of patients themselves that such hospitals ought to have provision made for their care; it is as a protection to the community.

Our Board of Health is given autocratic powers — powers that rival those of the Czar of Russia, I imagine, in regard to small-pox and diphtheria — but with the ever-present evil of syphilis they are practically without power. We must, then, for our own protection — and the number of innocent inoculations of syphilis I have just mentioned emphasizes it — provide such opportunity for the care of syphilitics as this hospital alone gives us. And it seems to me that its wards ought to be opened more freely, and the suggestion of Dr. Jackson appeals to me particularly that the stigma of pauperism ought to be removed from syphilitics who enter the hospital, in order that they may more freely take advantage of the opportunity, because that is really the only way in which the public is protected. The advantages or the possibilities of a syphilitic clinic at Long Island Hospital as a teaching centre are very great. At present syphilis can only be taught in the ambulatorium. If we need to give syphilitics access to hospital wards for our protection, another additional means of protection of the community is the proper education of the students, and I am sure that the Long Island Hospital will repay its cost, considered simply as a refuge for syphilitics and as a means of teaching that subject.

Dr. Minot: There is very little to add to what Dr. Taylor and Dr. Post have said. The value of these hospitals to the patients is apparent to everybody Cases which drag out a miserable existence at home can be put there and rendered comfortable, some of them may be practically cured, and a great many of them can undoubtedly be returned to work after an interval of proper care. Another important value of the hospital is the financial one — the question of cost in supporting these cases. Now, all the hospitals take chronic cases and keep them for a time, but at a high rate per week, whereas in the hospital arranged for chronic diseases the cost is very much less. I cannot compare the cost in the hospital at Long Island with the cost in the hospitals for acute diseases in Boston, because there is no separate account of the hospital expenses kept. The institution as a whole costs about $2.50 per week per inmate, and about one-third of the inmates at Long Island are in the hospital department; the City Hospital, $11 per week. In regard to the question of the stigma of the name of pauper, it is very desirable that that should be removed. That has been spoken about many times by the visiting staff to the commissioners and the present Board of Trustees, and they have all recognized the value of such a change. The objection, however, is a legal one and the law must be changed before it can be done. The name of the hospital itself has been changed. It is now not the hospital department of the pauper institution, but the Long Island Hospital. It was hoped that this difference in name might be of some advantage in persuading patients to go there. When they get there they are more than willing to stay. I think Dr. Taylor said there was no means of keeping syphilitics there except by their will. They can be kept there until discharged by the physician, but you cannot get them to the island except by their will. I believe that is the present law.

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[1] See page 542 of the Journal.

Dr. Coggswell: What I was going to speak about was the last remark of Dr. Minot. I came in just as Dr. Taylor was speaking about that. Before saying anything about that I should like to ask him if it was his impression that it was impossible to keep syphilitics in the Long Island Hospital against their will and that that was a desirable thing to do.

Dr. Taylor: I had supposed that any patient at Long Island could leave the institution if he insisted sufficiently upon it, whether syphilitic or not. If I was wrong in that impression, I am very glad to be corrected.

Dr. Coggswell: There is a law on the statute books to-day and placed there largely through the instrumentality of Dr. Fisher, at that time superintendent of the State Almshouse, and it is a law which is not enforced as much as it ought to be. I rendered myself decidly unpopular by enforcing it to the best of my ability at one time. Any person who becomes a public charge either through being placed in a prison or in a pauper institution can be retained in that institution until in the judgment of the physician in charge it is perfectly safe for him to go out into the community. If a man is once admitted to Long Island Hospital, and the physician in charge of the case thinks it is desirable to keep him there two years or five years, it can be done under the law. At Deer Island, when I was there, we used to keep them after their sentence had expired. If a man was sentenced there for thirty days and was in the acute stage of syphilis, we kept him sometimes six or eight months after his term had expired. but I don't know that it is the custom in other penal institutions or in any of the pauper institutions. If this matter was stirred up I think there could be a great deal made of it, and so much of advantage, at least, to the community, because that class, in my judgment, is responsible for at least 50 per cent. of the syphilis in the community and the spread of it. As I say, the man who is in charge of those cases renders himself decidedly unpopular; he is the butt of all the friends and relatives and political friends, and needs the support of all the physicians in the community at least. As to the expense to the city of the hospital at Long Island as against the City Hospital or Massachusetts Hospital, as Dr. Minot says, the accounts at Long Island are not kept separately, but for my own satisfaction I figured approximately the expense. It is a little less than $4.00 a week *per capita*, and you can see if they enlarged the hospital, or even at the present capacity, as against what it costs the city at the City Hospital, it is quite a saving and worth considering.

Dr. F. I. Knight: Some years ago I became deeply interested in the subject of a hospital for chronic disease in the State, and worked quite a little on the problem. What attracted me to it first was the getting of material for the Medical School. I felt then, as Dr. Taylor has said to-night, that there was a great need of that material. I did not put that first, when it was stated to the governor of that day, but the first consideration was the humanitarian one of separating the sick poor from the lazy well ones, and the next consideration was that if they were in the hospital, which I proposed in the near vicinity of Boston, that they would be better treated, would have a staff of visiting physicians who would understand the diseases, whereas at Bridgewater, at that time, they were simply living in what might be called a boarding-house, rather than a modern hospital; and, thirdly, I put the advantage of long study of cases and autopsies. We almost persuaded the governor to make the recommendation in his message, but there were various political considerations that came up, as usual, at that time that prevented that being accomplished, and without that we felt that we would not succeed at that time, and the thing fell through. I had a more successful time at the State House in connection with the hospital at Rutland. I was pleasantly astonished at the favorable reception which that proposition met with at once. There was no objection to it, and, in fact, the chairman of the Finance Committee, to whom it was referred, said: "I suppose you will want more of these institutions. You will need one in the western part and one down near Boston." I said: "Yes, I think we will." So that the temperature of the Legislature now is a good deal more in favor of such institutions than formerly.

Dr. Burrell: I would like to say a word in regard to hospitals for chronic diseases, and to make a suggestion for action of the Society, and if it could be put in the form of a motion it might be wise to do so. As this is the Suffolk District Medical Society, and the representative society in this community of the Massachusetts Medical Society, it might co-operate with the committee on legislation connected with the Massachusetts Medical Society. It does seem as if the stigma of pauper upon a person who through misfortune is chronically ill might be removed.

Dr. Magrath: Dr. Taylor has made mention of the value of the Long Island Hospital from the standpoint of pathology. During the past year we have had about fifty post-mortem examinations, the results of which have been of value not only to the hospital, its staff and its training school, but also to the students of the Medical School. At the Medical School we depend quite largely upon the material from this for teaching many of the chronic diseases — chronic tuberculosis, chronic diseases of the nervous system, chronic nephritis, chronic disease of the heart; all of those are instances of lesions difficult to be had from the other hospitals. It is very rarely that we examine a case at Long Island which does not present one or more of the lesions which I have named. During the present school year it has been possible to give the members of the present second class the benefit of the Long Island Hospital autopsies. The members of that class are receiving a great deal of instruction in morbid anatomy from material in the recent state, and we are very glad indeed of the opportunity which the Long Island Hospital offers for the study of chronic diseases.

Plague in Algiers. — In Algiers, where a case of plague has been reported, and where certain other cases of a suspicious character have occurred, the authorities, it is reported, sealed all the sewers hermetically and then burned chemical products, the fumes of which destroyed all the rats. This is a step which might be followed with advantage by all municipalities which are threatened by plague.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

REGULAR meeting, Wednesday, April 5, 1899, DR. J. W. ELLIOT in the chair.

DR. M. H. RICHARDSON read a paper on

THREE CASES OF PYLOROPLASTY FOR STRICTURE OF THE PYLORUS.[1]

DR. ELLIOT: We have with us this evening a distinguished surgeon from New Haven, Professor Carmalt, whom I am sure the Society would like to hear on this subject.

DR. CARMALT: I have very little to say. The opportunities for doing pyloroplasty do not occur often, and Dr. Richardson's success has certainly been very satisfactory. The criticisms which he made with regard to the Heineke-Mikuliez operation, where he makes the longitudinal incision, is a theoretical objection which had already occurred to me. I can easily see the great difficulty in bringing those ends together owing to the thick wall. We have all been very much interested in the paper, and I don't know that I can add anything to it, sir, though I am much obliged for the courtesy of giving me the opportunity.

DR. ELLIOT: I think this is one of the most promising fields for modern surgery, because the pylorus is so frequently the seat of disease. I was much impressed by the fact that Dr. Richardson's patient who drank the acid was injured not in the mouth or throat but in the pylorus. I have no doubt that an exploratory operation would be useful in certain undiagnosed stomach cases. The improved results in these plastic operations and the pylorus resections make it possible to cure many distressing cases. I think that all surgeons who see the operation or operate on the pylorus would quite agree with Dr. Richardson's suggestion that where there is a great amount of thickening a plastic operation is not the one which is indicated. The plastic operation implies that you can slip the tissues into place, whereas if there is a real thickening the tissues will not slide and the stitches cut out. This tissue should then be excised even if it requires a resection of the pylorus.

DR. RICHARDSON: It seems to me that the dissection must depend upon the situation and extent of the cicatrix. As I stated, in some instances it seems much better to excise practically all the pylorus, even if you have to take out the posterior wall. It makes it more difficult if you have to take out the posterior wall — I mean the mesenteric attachment — for it is there that the leak takes place. I was disappointed in my second case, for I felt that if I had taken out a complete V or excised the whole disease and made an end-to-end suture, as Dr. Cabot suggests, it would have been certainly a sure operation, and I do not believe would have added materially to the risk. The Heineke-Mikuliez method was devised partly to avoid the risk of pylorectomy, which risk has always been very great, but you convert a longitudinal slit into a transverse one and make quite as large a wound as if you take out a V. The stitches tear out more easily and the tissues are friable and the tension is greater. My experience would lead me to carry out in future cases that very point Dr. Cabot raised, to be sure that the first operation should be final, even if I had to resect the whole pylorus, so that (1) the parts would come together in an easy way; (2) there would not be any tension, and (3) there would be sure to be a lumen of sufficient size.

DR. ELLIOT: Speaking of contraction of the pylorus giving rise to no symptoms, I was operating for gall-stones the other day and thought I would look at the pylorus. It was evidently contracted, so that I could hardly put my little finger into it. There had been absolutely no stomach symptoms at all.

DR. F. B. LUND read a paper on

I. A CASE OF OSTEOMYELITIS OF THE FEMUR. II. A CASE OF KOCHER'S OPERATION FOR THE RADICAL CURE OF HERNIA.[2]

DR. ELLIOT: I am very much interested in Dr. Lund's case of hernia treated by Kocher's method, which seems to me theoretically to be unsound. I have not done the operation, because I supposed it was based on an unsound theory. Theoretically I do not see how you can hope to securely plug a hole between muscles with something that depends on the gluing of the peritoneum. A familiar example of what might be expected to happen may be observed in a case of ordinary umbilical hernia. Here we have a hole, plug it as tightly as you please with omentum, and it still keeps on pushing out; in other words, the peritoneal adhesions wont hold the contents of the abdomen from sliding through the hole. We made a great advance in the theory of hernia when we came down to Bassini's and Halsted's methods of actually sewing the aponeurosis, for we know that if there is a nick in the aponeurosis we get a bulging through; that I supposed was the essential cause of hernia. I was very much surprised that a man as great as Kocher should have invented this operation, and it is interesting to see such a difficult case cured by that operation. I suppose, however, that not long enough time has elapsed to call Dr. Lund's case cured.

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AMERICAN PUBLIC HEALTH ASSOCIATION.

TWENTY-SEVENTH ANNUAL MEETING, HELD AT MINNEAPOLIS, MINN., OCTOBER 31 AND NOVEMBER 1, 2, AND 3, 1899.

FIRST DAY. — MORNING SESSION.

THE Association met at the First Unitarian Church, and was called to order by the President, DR. HENRY MITCHELL, of Newark, N. J., at 10 A. M.

There were 110 new members elected to membership.

DR. HENRY B. HORLBECK, of Charleston, S. C., Chairman, read the

REPORT OF THE COMMITTEE ON THE ETIOLOGY OF YELLOW FEVER.

He referred to a commission which consisted of Drs. E. Wasdin and H. D. Godding, sent to Havana, 1897–1898, by the Marine-Hospital Service of the United States, to study the cause of yellow fever, and under date of July 10, 1899, this commission reached the following conclusions:

(1) That the micro-organism discovered by Sanarelli, and by him named the bacillus icteroides, is the cause of yellow fever.

(2) That yellow fever is naturally infectious to

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[1] See page 537 of the Journal.

[2] See page 547 of the Journal.

certain animals, that in some rodents local infection is very quickly followed by blood infection, and that while in dogs and rabbits there is no evidence of this subsequent invasion of the blood, monkeys react to the infection the same as man.

(3) That infection takes place by way of the respiratory tract, the primary colonization in this tract giving rise to the early manifestations of the disease.

(4) That in many cases of the disease, probably the majority, a primary infection or colonization in the lungs is followed by a secondary infection, or a second colonization of this organism in the blood of the patient. This secondary infection may be complicated by the co-instantaneous passage of other organisms into the blood, or this complication may arise during the last hours of life.

(5) That there is no evidence to support the theory advanced by Professor Sanarelli that this disease is primarily a septicemia, inasmuch as cases do occur in which the bacillus icteroides cannot be found in the blood or organs in which it might be deposited therefrom.

(6) That there exists no casual relationship between the bacillus X of Sternberg and this highly infectious disease, and that the bacillus X is frequently found in the intestinal contents of normal animals and of man, as well as in the bronchial secretion.

(7) That so far as the commission is aware, the bacillus icteroides is never found in any body other than one infected with yellow fever, and that whatever may be the cultural similarities between it and other micro-organisms, it is characterized by a specificity which is distinctive.

(8) That the bacillus icteroides is very susceptible to the influences injurious to bacterial life, and that it is readily controlled by the processes of disinfection, chemical and mechanical, is assured.

(9) That the bacillus icteroides produces *in vitro* as well as *in vita* a toxin of the most marked potency, and that from our present knowledge there exists a reasonable possibility of the ultimate production of an antiserum more potent than that of Professor Sanarelli. As there is such a wide divergence of opinion with reference to the bacillus icteroides in its relation to yellow fever, the committee believes the organization of an able and full commission of bacteriologists, fully equipped and provided with ample means, should be effected, which shall be permanently located in one of the yellow fever infected cities. Sufficient remuneration should be provided, so that the highest talent in bacteriology may be engaged.

Dr. E. Licéaga, of Mexico City, Mexico, presented his

EIGHTH ANNUAL REPORT OF THE COMMITTEE ON YELLOW FEVER

of the cases observed in the Mexican Republic, from the date of his first report, September 12, 1898, to September 15, 1899. He also gave a description of the sanitary stations about to be established in the Mexican Republic to prevent spread of yellow fever.

Dr. Ismael Prieto, of Mexico City, presented data for the

BACTERIOLOGICAL STUDY OF YELLOW FEVER.

Dr. Narciso del Rio, of Vera Cruz, Mexico, read a paper, in which he pointed out the necessity of making complete and general disinfection of a vessel in order to make the disinfection efficacious, and advanced arguments to prove that partial disinfection is useless in cases of yellow fever.

In the discussion, Dr. Thos. J. Turner, of Cold Water, Mich., agreed with the essayist, and stated that disinfection to be useful should be general and thorough as far as cleanliness is concerned. He believes the germs of yellow fever are carried by articles rather than by persons.

Dr. Antonio Manthenzo, of Tampico, Mexico, followed with a paper, in which he advanced considerable evidence to show that yellow fever is a preventable disease.

AFTERNOON SESSION.

Prof. Wm. H. Welch, of Baltimore, addressed the Association on

THE RELATIONS OF LABORATORIES TO PUBLIC HEALTH.

He said that laboratories devoted to the study of hygiene are of comparatively recent date, the first being started by von Pettenkofer, of Munich, in 1878. This laboratory contains hygienic, physical, chemical and biological departments. The problems pertaining to the disposal of sewage, public water supplies, the prevalence of epidemic diseases, and more especially cholera and typhoid fever, are dealt with; also the relation of typhoid fever to ground water, and the results of investigations conducted by this laboratory are of intestimable value to the inhabitants of Munich, a city which was once the very hot-bed of typhoid fever, but which is now so free from this disease that von Ziemssen said it was difficult to give practical demonstrations to medical students of the lesions of typhoid. It was about this time that Koch introduced his remarkably simple methods, which effected the isolation of bacteria of certain infectious diseases. The stimulus of these great discoveries led to the rapid foundation of hygiene laboratories in connection with universities and with boards of health, so that within a few years nearly all the great universities in Germany are provided with hygiene laboratories.

Another factor which has exerted a great influence in the development of hygiene has been the occurrence of epidemic diseases, such as cholera, and in this country yellow fever, and possibly it may turn out in the east that the plague may have a similar influence upon public sanitation.

Mrs. Ellen H. Richards, of Boston, spoke of

UNIVERSITY LABORATORIES IN RELATION TO THE INVESTIGATION OF PUBLIC HEALTH PROBLEMS AND TO COMMERCIAL WORK.

For the investigation of questions of great importance and wide bearing, the university laboratory is likely to be the best place just as soon as the university authorities realize its value as a factor in higher civilization. She said that the head of a sanitary laboratory should be a man of absolute probity. His opinions should not be purchasable at any price. He should have unbiased judgment. He should be well versed in methods of research. He should be patient, quick in action, and well balanced.

PERSONAL EXPERIENCE IN DISINFECTION.

Dr. Wyatt Johnston, of Montreal, narrated the results of his experience during the last three years with formaldehyde as a disinfectant. Steam, sulphur and other methods of disinfection were tried. He believes there are relatively few conditions under which steam is now necessary for disinfection. Formaldehyde, properly employed, fulfils all the requirements for municipal and household disinfection. There are, however, certain conditions under which steam seems indispensable, particularly where considerable penetration is essential; but where it is necessary to make rapid disinfection of clothing, bedding, etc., in a hospital, steam is preferable when the articles have to be used immediately afterwards. Formaldehyde emits certain odors afterwards which render it unsuitable for rapid work. The penetrating qualities of sulphur vapors are deficient, unless the sulphur is used in such large quantity as to cause serious damage. With formaldehyde he has never done serious damage to the articles that were disinfected by it, and he has no doubt that this is the experience of other observers.

In the discussion which followed, the general consensus of opinion was that formaldehyde is one of the best, if not the best, disinfectants that have been brought before the profession in the last two or three years.

EVENING SESSION.

At this session addresses of welcome were delivered on behalf of the city of Minneapolis, by Hon. James Gray, Mayor; on behalf of the State, by Dr. Samuel G. Smith, of the University of Minnesota; on behalf of the local medical profession, by Dr. H. B. Sweetser, President of the Hennepin County Medical Society, and by Cyrus Northrop, LL.D., President of the University of Minnesota.

The President, Dr. Henry Mitchell, of Asbury Park, N. J., then delivered his Address. He selected for his subject

A REVIEW OF THE SANITARY PROGRESS DURING THE YEAR.

He stated that public interest in all questions relating to the development of a working system for carrying into effect the rapidly unfolding truths of sanitary science has been one of the most prominent features of the period which has elapsed since the Association was organized. During this period have occurred nearly all of the substantial improvements in municipal sanitary administration which at present stand engrafted upon our systems of government. He referred in general terms to recent sanitary progress, and spoke more specifically concerning a few of the details relating to the prevention of disease, including sanitary legislation, education of sanitary officers, decrease of infant mortality, vaccination, typhoid fever, tuberculosis, adulteration of foods, and local, State and national sanitary administration. During the twenty-seven years which have passed since the organization of the Association, legislation designed to protect and promote the public health has been obtained in almost all of the States within the territory represented in the membership, and efforts are now being made to secure a greater degree of uniformity in these enactments and in the methods to be pursued in their enforcement, at least so far as they are related to interstate questions.

The hygienic control of milk supplies has assumed a better working basis in numerous localities, and the popular demand for clean milk is beginning to meet with response from a few of the more progressive dairymen.

The history of the morbidity in the military camps of the United States during the recent war with Spain had demonstrated anew the truism that cleanliness of water and food is an indispensable condition to health, and typhoid fever by its prevalence in these camps has further justified its selection as a typical illustration of the value to the public health of a rigid application of the principles of hygiene. The reduction of the death-rate in typhoid fever has been very largely effected by the improved sanitary conditions in towns, and the relations which formerly existed between the urban and the rural districts are now completely reversed, the proportion of cases of typhoid occurring in scantily populated regions being much larger than in towns.

Further study of the methods by which the spread of tuberculosis may be restricted has also engaged much of the attention of local sanitary authorities during the past year, but no general agreement has yet been reached concerning the course to be pursued for the prevention of this disease.

Conservative recommendations for checking the prevalence of tuberculosis include the inspection of all bovine animals, meat, dairy produce, and dairy premises; destruction of diseased animals, and the prohibition of the sale of diseased meat and milk; exclusion of diseased persons from markets, dairies and other premises where food is prepared or sold; frequent and regular disinfection of public conveyances and places of public assembly; disinfection of all infected apartments after death or the removal of patients.

Dr. Mitchell then dwelt upon the necessity for establishing in the United States a national department of public health, saying that its importance has been strengthened by recent events, the addition of tropical possessions having added new responsibilities to those already borne by the General Government, requiring investigations concerning the distribution and character of preventable diseases occurring throughout the entire territory occupied by the nation.

SECOND DAY. — MORNING SESSION.

Dr. Peter A. Bryce, of Toronto, presented the

REPORT OF THE COMMITTEE ON THE CAUSE AND PREVENTION OF INFECTIOUS DISEASES.

He said that the past year has been fruitful in experimental work and discoveries in a field which, if not new, is one which has hitherto received but little attention. So early as 1870 Davaine attributed to flies an important part in the spread of anthrax from dead infected materials to living animals, and in the past five years positive experiments have added to the knowledge of the subject. It has been very well established that flies by sucking the blood of diseased persons can transmit disease. Localized epidemics of dysentery have been caused by flies carrying infection from fecal matter.

The essayist referred to Simond's paper, which appeared in the *Annales de l'Institut Pasteur*, in which is reviewed the origin of the epidemics of the plague observed since 1898 in China and India, based on personal investigations in Tonkin and later in Bombay. In tracing its spread abundant evidence is adduced to show that while man may be the occasional agent of the transmission of plague, he is only indirectly so, and then the author points out the rôle played by the rats as the principal source of its propagation. In general, he states that the epidemic of plague is preceded by an epidemic swarming of rats, and shows from many illustrations that the first persons attacked with plague are those in quarters where grain is stored up and who are actually employed in granaries and storehouses, as along the quays; and he further illustrates how, through rats in the holds of ships, the disease is carried from port to port. It is pointed out further that the contagion from person to person in hospitals is wholly exceptional, and many physicians in plague hospitals refuse to admit the contagiousness of plague.

Dr. Bryce quoted from a series of reports by Dr. John Simond, the greatest of all sanitarians, who said, in 1874, in the prevention of disease we must remove the cause of uncleanliness, that is, remove filth. This eminent sanitarian then illustrated the varieties and degrees of filth as (*a*) putrescent refuse matter, solid and fluid, causing effluvia and pollution by soil soakage; (*b*) overcrowding, thus polluting the two sources of public health, air and water.

Dr. Bryce concludes by saying: (1) Thus we may as regards typhoid fever arrange the garbage and sewage-disposal works of houses, towns, camps, so as to make impossible local accumulations of organic vegetable and animal pollution, wherein the typhoid germs may grow, and from which they may be carried to food and drink; (2) by drainage prevent soil pollution by either vegetable or organic matters, so that mosquitoes may not breed in the vicinity of habitations and so be in a position to become disseminators of the malarial parasite, and if they are present, protect houses against them, especially at night; (3) by so constructing houses as to render them inaccessible to rats, and to maintain in these such a condition of cleanliness of rooms, clothing and persons that infected matter will not be present, or, if introduced, there may not be flies to carry it; (4) as regards ships, the very means which are now in practical operation in well equipped quarantine stations will amply serve to destroy rats, that is, sulphur and formol; (5) by detaining passengers longer than is necessary for the disinfection of a ship and the elapsing of the period of incubation for plague of five days, to which, in the presence of actual infection, may be added a protective inoculation.

Dr. Frank W. Wright, of New Haven, Conn., read a paper on

PREVENTION OF CONTAGIOUS DISEASES.

To prevent the spread of contagious diseases two objects must be accomplished: *First*, the destruction of the poison given out from the sick person by disinfection, and, *second*, the prevention of any poison that has escaped disinfection from coming in contact with susceptible persons — isolation. Certain diseases may be limited by rendering persons immune to inoculation, as in small-pox and diphtheria, it being now practically impossible for the former of these diseases to obtain a firm foothold in any well vaccinated community. A good hospital for the accommodation of persons affected with contagious diseases should be maintained in every State. The writer found a short time ago by inquiry that of sixty-two principal cities in the United States and Canada, less than one-quarter were provided with decent contagious-disease hospitals, some not even having a place for the care of small-pox patients. He believes many lives are sacrificed by contagious diseases annually that could be saved if all persons would conscientiously give attention to details and lend their support both morally and financially.

Dr. J. E. Monjaras, of San Luis Potosi, Mexico, dwelt upon transmissible diseases in that city and made some general remarks on their etiology and prevention.

In the discussion, Dr. Chas. A. Lindsley, of New Haven, Conn., made the point that the work of enforcing health laws was much facilitated by placing the authority for prosecution directly in the hands of an attorney, rather than leaving it with a doctor, who knew nothing about law. He had found that this plan added much to the effectiveness of work in his State. Reports of infectious and contagious diseases had much improved there of late both in accuracy and promptitude.

Dr. Chas. V. Chapin, of Providence, R. I., made an argument for thorough teaching of modern scientific hygiene in universities and medical schools.

Dr. Wyatt Johnston, of Montreal, said that the great trouble was that the time at the disposal of the professors in the schools was so limited as to prevent the introduction of adequate courses. He suggested that diploma courses in hygiene in the universities be introduced and advised the appointment of a committee to further his proposition.

Dr. Chas. O. Probst, of Columbus, Ohio, related his experience along this line at the University of Ohio, where an attempt was made to hold a hygienic course, but which was defeated by the entire lack of interest upon the part of the class from which the students would be drawn.

Dr. Benjamin Lee, of Philadelphia, advocated the more general teaching of hygiene in colleges and universities.

Dr. Samuel H. Durgin, of Boston, spoke on the system of medical school inspection in Boston. The schools are visited every day by physicians, who examine any suspicious cases. These physicians are also charged with the duty of seeing that all cases of infectious diseases are properly isolated.

Dr. John N. Hurty, of Indianapolis, said that the jealousy of business men was an important factor in enforcing health laws, and he gave an account of a recent epidemic of small-pox in Valparaiso, Ind., which was reported as chicken-pox by the physicians in that city, supposedly because merchants said it would hurt business. The foolishness of such a course was pointed out. The Indiana State Board of Health proposes to require a certain standard of knowledge of its health officers.

(*To be continued.*)

Recent Literature.

Saunders' Medical Hand-Atlases. Atlas of the Diseases of the Skin, including an Epitome of Pathology and Treatment. By Prof. Dr. Franz Mracek, Vienna. Authorized translation from the German. Edited by Henry W. Stelwagon, M.D., Ph.D.

The volume of Hand-Atlases dealing with diseases of the skin is well up to the standard of its predecessors. In the introductory text, an excellent *résumé* of the different affections of the skin is to be found, well translated by Dr. Stelwagon, who has added a judicious comment here and there. The atlas is made up of sixty-three colored plates and thirty-nine full-page half-tone illustrations. As a whole, the plates are surprisingly good, and are as well suited to the needs of the general practitioner as those of the large and expensive atlases. Most of the material for the illustrations was obtained from the author's own clinic, and a short description of the case depicted is found opposite each illustration. Dr. Stelwagon's comments are invaluable in explaining many points that would otherwise be obscure to the English reader. Altogether, the book may be highly recommended to the general practitioner.

An Introduction to Dermatology. By NORMAN WALKER, M.D. New York: William Wood & Co. 1899.

This book of about two hundred and fifty pages is essentially a reproduction of the lectures delivered by the author for several years to his students in Edinburgh. It does not claim to be a complete treatise, as many of the less common diseases are either briefly referred to or omitted. As might be expected of the translator of the "Histopathology of the Skin," the book is based essentially on the teachings of Unna. The latter's classification of cutaneous diseases is adhered to in the main, with its long list of infectious inflammations, including ichthyosis and rosacea. The book is written in a readable way, with a style of its own, differing from that of the ordinary text-book. To many dermatologists the prominence given to most of the as yet unproved theories of Unna will seem undesirable in a book intended for the general practitioner. The colored plates, of which there are thirty scattered through the book, are not of a high order, although some of the photographic illustrations are good. The author has also inserted numerous figures of his own microscopical work, which are of varying excellence.

Saunders' Question-Compends, No. 11. Essentials of Diseases of the Skin, including the Syphilodermata, arranged in the Form of Questions and Answers; prepared especially for Students of Medicine. By HENRY W. STELWAGON, M.D., Ph.D. Fourth edition, thoroughly revised. Illustrated. Philadelphia: W. B. Saunders. 1899.

This little manual has reached its fourth edition, which represents a thorough revision of its predecessors. It comprises also a number of the more rare affections of the skin upon which light has been thrown by recent research. The book shows signs of care in compilation, and may be recommended to those who are inclined toward this method of imbibing knowledge.

THE memorial erected to young Dr. Mueller, the victim of the laboratory plague at Vienna last year, as stated in the *Journal of the American Medical Association*, consists of a bronze bust on a marble pedestal, with relief representing Marcus Curtius, the Roman hero. It is erected in the eighth court of the general hospital, near Nothnagel's clinic, in which he was an assistant. Nothnagel delivered an address at the unveiling of the statue.

THE BOSTON

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THE FEMALE NURSE IN THE ARMY.

As is now well known, our late war with Spain brought upon the Medical Department of the Army a peculiarly trying series of exigencies, from which, no doubt, many lessons of importance have been learned. One experiment, which caused no little comment at the time, and has since been the subject of considerable discussion, was the extensive employment of women nurses. Every one was, naturally, interested in the matter, and opinions, often without adequate knowledge of the facts, were freely expressed on all sides. What we needed, however, in this, as in other matters of policy, was a clear statement of the facts from one who knew. This opportunity of forming a judgment in the matter has now been offered by a fair-minded and judicial paper, by Col. Dallas Bache, Assistant Surgeon-General U. S. A., published in the *Journal of the Military Service Institution of the United States.*

In this paper Colonel Bache first discusses the make-up of the hospital corps in times of peace. For the purposes of caring for the sick at such times, the hospital corps was adequate and well trained. It was, however, quite insufficient to meet the enormously increased burden put upon it in time of war, hence the difficulties that at once arose. It soon became necessary to increase the service, and among the various methods employed, the woman nurse came in for her share of attention. Colonel Bache states clearly the situation at our various military camps, and gives the well-known statistics of typhoid fever, reaching its maximum extent in August and September, 1898. He willingly admits the inefficiency of the medical department, but he says: "All this is not the story of the failure of the medical department to do properly what it was intended to do and to work effectively with its tools, but in a way it is the story of the failure of the frog to become an ox suddenly, a failure to improvise means, aptitude, discipline and organization. Incidentally it is also the story of the advent of the female nurse." It is insisted that the employment of the female nurse in the army was in no way a revelation, since the experiment had been made in a smaller scale from the days of the Crimea.

During July, 1898, the appointment of women to work in field hospitals began, and once begun, proceeded rapidly, as a necessity of the situation, since a sufficient force of trained male nurses could not be had. The first detachment, four, was supplied to the general hospital at Key West, May 10th, the number generally assigned reaching 50 by July 1st; 162, July 31st; 362, August 15th; 924, August 31st, and 1,158 by September 15th. Since the end of the war, the number has been reduced; on March 15th of this year it was 343. Fourteen have died as a result of exposure or infection. Colonel Bache sees in the large number of men who were hurriedly employed for purposes of nursing, well-meaning persons willing enough to do their duty, but quite unprepared. As he says: "You cannot sow a resolution for training, nor a good intention and reap a crop of experts." Hence, no doubt, the women, with their better training, were much more immediately serviceable. The argument here advanced by Colonel Bache is, that if means are taken in times of peace to properly train and equip a hospital corps, the necessity for the female nurse will, in great measure, be removed in the event of war. He is most strongly of the opinion that the division hospital is certainly not her place. This hospital is the unit of medical field service and as such has no luxuries. It must, at best, be meagrely supplied with furniture and conveniences; it must be capable of being moved from place to place with great despatch; its function is one of immediate necessity. Under these conditions the female nurse, according to Colonel Bache, has absolutely no place.

He is equally convinced that women should not be employed on transports, or hospital boats or trains, and maintains that the work of nursing under these circumstances may be done as well or better by men.

In the permanent hospitals, on the other hand, he finds the field for women. Here he regards them as a necessity, where, as he puts it: "The sign posts point towards home and to recovery, rather than to the camp and the outpost. Here a trained woman is at her best, her order maintained, her methods undisturbed, the bugle is not a summons, and the discipline of a marching column is not at stake." The assignment of women to permanent posts or garrisons is also considered inexpedient and unnecessary, as introducing at once an added expense, and a considerably greater elaboration of the existing hospitals.

In concluding his paper Colonel Bache makes the following remarks:

"Of course the military future is inscrutable, and the memory for military and sanitary lessons is not retentive, but we may hope that should camps whiten our fields again, the preparation for war will precede its declaration, and that in this preparation will be included the fashioning of the hospital corps for its ultimate military purpose. This is not chiefly for the fragmentary work of a post, but for a larger unit of several activities, a division hospital, an ambulance company, interests in which the routine of a post is not concerned, and familiarity with which can only come from contact and training in some larger school. Our hospital men cannot, it is true, all be nurses, and we must remember in judging their work that the equivalent of the whole period of a soldier's enlistment is passed by women in their special schools of training; but better medical results in the field can be secured with due organization and steadiness than was done last summer without order and in a confusion of frenzy. It ought not to be possible to assemble again, even for the photographer, a hundred female nurses in a field hospital with troops. The sober employment of accredited women for our military needs, within the bounds indicated, is admirable, and now that we have passed beyond the noise of the captains, and may rest and think, I am quite sure that this sober thing will be done."

The foregoing is an expression of opinion from a man who has studied the situation in its various bearings, and as such must receive our deepest consideration.

CONGRÈS INTERNATIONAL ANTITABACIQUE.

It is probable that every phase of opinion will find an expression at the Paris Exposition. The antivaccinationists and the antivivisectionists will undoubtedly be there, demanding their small share of attention, and the innumerable vagaries to which modern free thought has brought us will assuredly each have its devoted and proselyting followers. For example, we hear that a conference is to be held by spiritualists, in which they hope to discuss their peculiar faith to the edification, no doubt, of themselves, and possibly of a few curiosity seekers.

We had, however, not expected that a congress confined to the discussion of the tobacco question would also find a place, and yet such seems to be the fact. We are in receipt of a circular and programme of the *Société contre l' abus du tabac*, which proposes to take the opportunity offered by the Exposition to organize an international congress, at which may be discussed in the most complete manner all the "humanitarian questions relative to tobacco." The programme as outlined gives one an idea of the thoroughness of the proposed discussion. The main headings are: historical and statistical inquiry, with the different methods of employing tobacco; chemical and physiological investigations on tobacco; pathology, and diseases caused by tobacco; the hygienic and social question; effects of instruction and education in combating the propagation of the habit; the moral and criminal aspects of the question.

Under these general headings is a large number of special questions for discussion, of a most comprehensive character. In fact, we should judge that every detail of the history of tobacco from its advent into civilized life, was to be laid bare at this proposed Congress.

The idea is, however, a most commendable one, and we hope results of importance may be accomplished, and that all the evils as well as some of the benefits of the tobacco habit may be clearly brought to light.

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TAKE NO THOUGHT FOR THE MORROW.

In our edition of November 16th we commented editorially upon Professor Osler's advice to medical students, as expressed in his recent address at McGill University. The central idea of that advice, "Take no thought for the morrow," we ventured to suggest was a safe guide for the few, but not for the many, our meaning being that a certain consideration for the future need in nowise hamper the efforts of the present, and might, in fact, tend to lead to the more assiduous performance of the daily task. With Dr. Osler's letter, published in the issue of November 26th, we are in complete agreement. The determination to do the day's work well, to be entirely absorbed in it, and to put all the energy of one's nature into the task of the hour, is an absolute prerequisite to success in any walk of life, but still we think the morrow must always come in for its share of thought, small though it may often be. To our mind, the two attitudes are not antagonistic.

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MEDICAL NOTES.

Nerve Cells in the Cerebral Cortex of Man. — The most recent estimate of the number of cortical nerve cells places it at 9 200,000,000, an estimate about eight times as large as that published by Meynert in 1872.

Instruction in Tropical Diseases at Johns Hopkins. — Instruction in tropical diseases has been begun at the Johns Hopkins Medical School, no doubt as one result of the commission recently sent to the Philippine Islands.

Plague in Brazil. — From October 22d to November 17th, 23 cases of plague have been reported at Santos, with 10 deaths. Two cases have also been reported from Sao Paulo during the month October 17th to November 17th.

First Woman Doctor in Germany. — Agnes Nacker is reported by the *Medical News* as the first woman doctor admitted to general practice in Germany. She resides in Berlin. It has taken the Prussian Cabinet two years to decide her case.

Annual Lecture. — The annual lecture of the Chicago Society of Internal Medicine, delivered by Dr. J. G. Adami, of Montreal, had for its subject, "Latent Infection and Sub-Infection, with Especial Reference to the Etiology of Pernicious Anemia."

A Warning. — The *Cleveland Journal of Medicine* publishes in its issue of November the results of an investigation into the standing of an institution known as St Luke's Hospital, of Niles, Mich., which would appear to leave no doubt that this so-called hospital is run for purely mercenary motives, and that its promoters are wholly unscrupulous men, quite beyond the pale of medical ethics.

The Insect Fauna of Human Excrement. — At a recent meeting of the Biological Society of London, Dr. L. O. Howard gave the results of some recent investigations on the insect fauna of human excrement, suggested by the accounts of the transmission of typhoid germs by flies. Up to this time he has found 138 distinct species of insect in human excrement, and no doubt more are to come, for the investigation is to be continued.

Acting Assistant Surgeons United States Army. — A circular invitation has been sent to all the acting assistant surgeons of the United States Army engaged in the recent war with Spain (many of whom are still in the service) for a mass meeting to be held in the armory of the Seventh Regiment, N. Y. S. N. G., in New York December 5th next, for the purpose of effecting organization, and of securing legislation by Congress in their behalf. Much of the legislation sought was, it is said, matter of actual verbal agreement with them when their services were secured, and has, as required by good faith, already had the approval — by official communication to Congress — of the Secretary of War and the Surgeon-General of the Army, but has not become law.

BOSTON.

Acute Infectious Diseases in Boston. — For the six days ending at noon, November 28, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 76, scarlatina 21, measles 50, typhoid fever 10.

Boston Society of Medical Sciences. — At a meeting of the Society held November 1, 1899, the following communications were made: Dr. R. T. Edes spoke on "Temperature and Rhythm," showing the relationship between them in various types of animals; Mr. Ernest L. Walker read a paper on "A Comparative Study of the so-called Polychromatophilous Degeneration of the Red Blood Corpuscles in Anemic Conditions," and emphasized the importance to be attached to the condition from the standpoint of diagnosis. Dr. Charles H. Williams demonstrated a perimeter of elaborate design, from which it was claimed results of great accuracy could be obtained. Dr. Charles Minot spoke of the classification of tissues, as worked out by the embryologist, and urged the acceptance of this classification in other branches of medical work.

NEW YORK.

St. Vincent's Hospital Jubilee. — On November 26th, 27th and 28th, St. Vincent's Hospital held a three days' celebration of its golden jubilee, the fiftieth anniversary of the founding of the institution. On Tuesday the Sisters of Charity had a special celebration in honor of the completion by one of their number, Sister Antoinette, of fifty years' service in their order and in the hospital. St. Vincent's was established in 1849 under the auspices of Archbishop Hughes, whose sister, the Rev. Mother Angela, with four Sisters of Charity, assumed the management. At that time, it is said, the only two other hospitals in the city were the New York and Bellevue.

The Woman's Hospital. — The forty-fourth anniversary of the Woman's Hospital was held on November 23d. The report of the Board of Directors showed that during the year there were treated 863 patients, of whom 267 were free, in the indoor department, and 4,172 in the outdoor department. Five thousand dollars was received respectively from Mrs Howard Gould and the estate of Angelina B. Crane for the endowment of free beds in perpetuity. It was announced that $200,000 of the $400,000 required for the new hospital was now assured, and that a home for nurses, a clinic and a dispensary building were promised by Mrs. Frederick F. Thompson as soon as the main building should be commenced.

The "J. W. Taylor" Cases of Plague. — Dr. L'Hommedieu, one of the quarantine medical staff, has stated that there was at the quarantine laboratory an ample supply of bubonic plague serum, but it had not been necessary to use it in the *J. W. Taylor* cases, as the patients were convalescing when they arrived. There has been an unfortunate clash of authority between the State Quarantine Office and the United States Marine-Hospital Service in regard to the steamship *J. W. Taylor*, which brought the cases of plague.

Committee on Food Adulteration.— The United States Senate Committee on Manufactures finished its investigation of food adulteration in New York on November 24th. In closing the investigation Senator Mason, the Chairman, stated that he thought the work of the committee would lead to such an establishment of public sentiment that a national law will be passed which will accomplish at least three things, namely: (1) Prohibit the importation into this country of articles manufactured abroad, the sale of which is prohibited in the country of manufacture. (2) Prohibit the use of deleterious adulterants. (3) When adulterants are used to cheapen, which results in deceiving the purchaser, the law will go as far as possible to compel the manufacturer and dealer to mark the package for what it actually is.

Sale of Poisons. — The Druggists' League for Shorter Hours, in a circular just issued, announces its intention to co-operate with the Board of Health in an attempt to stop the careless sale of poisons, particularly of carbolic acid. It declares that responsibility for the non-enforcement of laws against the sale of poisons should rest with the Board of Pharmacy, and complaint is also made of the lax enforcement of other pharmaceutical laws. In commenting on the frequency of suicides by carbolic acid the circular calls attention to the use of alcohol as an antidote for this poison, as claimed by Dr. J. Austin Kelly, of Brooklyn. "Dr. Kelly," it states, "has proved by personal experiments, as well as by treatment of patients, that alcohol is a perfect antidote for carbolic acid. He says that in all cases where poisoning by carbolic acid has occurred four times the amount of whiskey should be given at the earliest moment in case pure alcohol should not be on hand. In the absence of either alcohol or whiskey, five times the quantity of ordinary table vinegar should be given. No oil of any kind should be administered. Thus treated early enough, all cases will recover." It is to be feared that the general announcement of this antidote may tend rather to the increased use of carbolic acid than to its abandonment.

Verdict for Damages. — Grace McDonald, a girl seven years old, who lost both her legs by being run over by a street car, has been awarded $15,000 damages against the Brooklyn Heights Railroad Company.

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Miscellany.

THE "INDEX MEDICUS NOVUS."

The following circular received from the "redaktion" of the *Index Medicus Novus*, published in Vienna, I. Tuchlauben 23, is certainly a "curiosity of English literature":

P. T.

The necessity to have an organ of information of the whole medical literature of world is wellknowne percieved by all investigators and practioners all days more and more. Such work demands extreemely much toil, time and expenses, for there must be gathered the whole medical journal-literature of every country and even in all languishes, to give all times an resumption quite complete of the whole medical literature.

Through the persuasion of prominent authorities and by cooperation of professioners, we resolved, to satisfy this pressing whishes, to produce such an underprize and so we founded the "Index Medicus Novus."— We must say that the sacrifices which are necessary to the work in each regard are more important as we thought in the beginn; but we will continue now the undertaken work because there is no doubt, that the whole medical world will have the greatest interest of it. Next time we will give also a specification of all medical-scientific-books coming just out, as all medical dissertations of the universities quite regular: so the "Index Medicus Novus" will become a collection for consultation quite unsurpassed and as theer has been nothing likewise before it in the medical knowledge science.

To have an easy and quickly review of the great deal of the stuff we fixed to publish the "Index Medicus Novus" twice monthly to the 1. and 15., in mind to publish the literature of world who appeared in this short time as soon and complete as possible. Than we tryed to comprise the special compartments to have an easy review and we observe, that the division "Naturalia" shows those essays which are composed by graduated phisicians or for the least acts of scientific, clinical questions and in the "Academia" those recipients, which are discussed in the sessions of the academies of sciences on the jurisdiction for medical investigation. Those last-named very important essays have been till now generally quite — unknown to the broader medical circles, because they are only published in the academical publications.

Though all this performances we set the price for subscribition very low, to make it possible to each scientific searcher to buy the "Index Medicus Novus." So we hope confidently that the interested circles well assist (to this undertakement quite as important than scientific and exertions) by her participation and furtherance. We will not omit to say that our bureau translates in all languishes each essay wished by anyone.

This number appears exceptionally as a double-number.

We the honour to send you the "Index Medicus Novus" and you can have, if you like it, still the numbers of the first quarter of the year.

Saying that we will try to follow willingly to the wishes and incitations of learned-mans with great veneration

the Redaction of
"INDEX MEDICUS NOVUS."

◆

STARVATION IN LONDON.

LONDON, says the *Medical Record*, although the richest city in the world, supplies quite her fair share of deaths due to starvation. It is gathered from a parliamentary return recently issued with respect to the number of deaths in London from starvation, or accelerated by privation, that the total number of such cases was 18. In the Eastern District there were 15 deaths from this cause, in the Northeastern 13. These, by the way, are only the cases of death from unexplained causes which came before a coroner. Doubtless there are many others which are never known.

◆

BEER DRINKING.

RECENT statistics show that the consumption of beer in Germany during the year 1897-98 was 1,383,700,000 gallons; 1,192,000,000 in Great Britain; 180,000,000 in France, and about 90,000,000 in Russia. A better notion of the popularity of beer as a beverage is to be had from the estimates of consumption "per head" of the population. It is reckoned at 36 gallons in Belgium, 32 in Great Britain, 25 in Germany, 21 in Denmark, 12 in Switzerland, 10 in the United States, 9½ in Austria-Hungary, 9 in Holland, 5 in France, 3½ in Norway, 2½ in Sweden, and 1 in Russia. — *Medical Record.*

◆

THE CONTAGIOUSNESS OF LEPROSY.

IN a recent clinical lecture on "Leprosy and Cancer of the Skin," delivered at the London (Eng.) Hospital, Jonathan Hutchinson made the following remarks:

"As for the fear of contagion in leprosy, I regard it as utterly unfounded. We have abundant evidence to prove that those living in daily and hourly contact with leprous members of their own families contract the disease only in the rarest instances. The spread of leprosy by direct personal contagion is a contingency which must be counted as merely a remotely possible accident. Cases occurring in the same household or village are much more probably due to identical food and surroundings than to any form of direct infection. Isolation is cruel, a fearful waste of labor, and leaves the real cause of the disease entirely untouched. It has never checked or limited the spread of the disease in the slightest degree."

◆

LOSS OF KNEE-JERKS IN GROSS LESIONS OF THE PREFRONTAL REGION OF THE BRAIN.

THE importance of the knee-jerk in the diagnosis of lesions of the nervous system is so important, that its absence under unusual conditions should be most carefully noted. Dr. R. T. Williamson, of Manchester, Eng., contributes a short paper to the *Glasgow Medical Journal* for November, 1899, which we quote in part:

"The object of my note is to draw attention to the fact that, in tumor and abscess of another region of the brain — the *prefrontal region* — the knee-jerks are sometimes lost, just as in cerebellar tumor. In such case, there is usually nothing to account for the loss of the knee-jerks, except the lesion of the prefrontal region. The knee-jerks were lost in *three* out of *five* cases of tumor or abscess of the prefrontal region which I recorded in 1896.

"The first case was one of sarcoma of both prefrontal regions. I examined the knee-jerks almost every day for four weeks, but always found them absent. The tumor growths were limited to the prefrontal regions, whilst the ascending frontal convolutions and the motor area of the cortex, the motor fibres in the white matter and the basal ganglia were not invaded by the growth. The cerebellum, medulla and pons were also normal. There were no symptoms of spinal cord lesion during life, but in order to be sure that no spinal pathological changes were present, I examined the spinal cord carefully. Both macroscopically and microscopically it was normal.

"The second case was one of abscess of the right prefrontal region. The knee-jerks were both absent. There were no symptoms indicating any lesion of the spinal cord, and also there was no brain lesion, except the abscess in the prefrontal region.

"In the third case the knee-jerks were absent, and *post-mortem* a tumor was found limited to the right prefrontal region. Other parts of the cerebrum and cerebellum were normal.

"In the paper referred to I analyzed the condition of the knee-jerks in 50 cases of prefrontal tumor or abscess (45 from medical literature and 5 recorded by myself). In 20 of these cases the knee-jerks were not mentioned; in the other 30 cases the condition was as follows: Knee-jerk absent on both sides, in 6 cases; knee-jerk very feeble on both sides, in 2 cases; knee-jerks normal or increased, in 16 cases; knee-jerk very feeble on side opposite to tumor, in 4 cases; knee-jerk very feeble on side of the tumor, in 2 cases. The knee-jerks were both absent, therefore, in 6 out of 30 cases of tumor or abscess of prefrontal region (verified by *post-mortem* examination) — that is, in 20 per cent. of the cases. In all of the cases in which the knee-jerks were absent there was no indication of lesion of the spinal cord or peripheral nerves; but in only one of the cases (the first which I have recorded) was the absence of microscopical changes in the spinal cord shown by pathological examination. In tumor growths involving the motor region of the brain, the knee-jerk on the side opposite to the lesion is generally increased, and on the side of the lesion normal or increased. In 30 cases of tumor of the motor area of the brain (taken for comparison with the 30 cases of gross lesion of the prefrontal region analyzed above) the knee-jerks were both present in all except one, and in this case the growth was very extensive, and had invaded the basal ganglia.

"In a case of tumor of the second left frontal convolution, recently recorded by Dr. Gordinier, it is stated that "the most careful reinforcement failed to elicit the presence of patellar tendon reflexes." Yet at this time there was no other affection of the legs. The autopsy revealed nothing to account for the loss of the knee-jerks except the prefrontal tumor.

"Apparently in tumor or abscess, in two regions of the brain especially — the *cerebellum* and the *prefrontal* region — the knee-jerks are sometimes both absent; whilst in tumor or abscess in other parts of the brain loss of the knee-jerks is exceedingly rare."

Correspondence.

ADVERTISING, OR BEING ADVERTISED.

At the request of the participant most concerned we give space to the following correspondence. We regret to acknowledge that there are members of the profession, we hope not many, who experience the fate which has befallen Dr. Phelps not unwillingly; there are some who even court such martyrdom, but most sufferers are, we are glad to think, unwilling victims and are as helpless as they are indignant.

New York, November 20, 1899.

Mr. Editor: — Will you kindly give space to the enclosed letter in justice to myself and many others who have suffered through the lay press.

Very sincerely yours,
A. M. Phelps, M.D.

Chicago, November 14, 1899.

My Dear Dr. Phelps: — Your advertisement in the *Chicago Daily News* of Nov. 9th has been called to my attention. Why don't you advertise in your own local papers? I should think it would pay better, and it would certainly be less objectionable to some of your friends.

Yours truly,
———— M.D.,
Secretary.

New York, November 17, 1899.

———— M.D.

My Dear Doctor, — I enclose you a reprint of an article which I wrote for a reputable medical journal. In that article I mentioned different remedies which I used in the treatment of certain joint affections. The drug people who happened to be interested in a certain remedy mentioned had one hundred and twenty thousand (120,000) reprints made and sent them to the profession over my signature. I could find no fault if they had not black-lined the margin of the page where the remedy is alluded to. It cost me six hundred dollars to fight the thing to prevent them from using the article, and I was beaten on the grounds that I had not copyrighted it. This reprint has damaged me thousands of dollars and I have no redress.

Other articles of mine have been used in a similar manner, and I have seen articles from the pens of eminent men, and I think from yours, handled in a similar manner. I know of no way to prevent it. Certainly the courts cannot or will not. I have had an experience with them and know.

Now, in regard to newspaper articles, and I presume your letter alludes to one, I have this to say: that newspapers as a matter of business, I am informed, employ doctors as reporters, who write on medical topics for so much a line. Our clinics are largely public in every teaching institution, but even if they were private or open only to students or matriculates, who would have the audacity to exclude a physician presenting his card at the door, unless he knew him to be a reporter? Clinics are posted on the bulletin boards of hospitals, colleges, and also of the Academy of Medicine of this city. When this is done, not only the profession but any layman can obtain a knowledge of the work done in the several clinics a day in advance. The reporter is hired by the papers to keep posted on these announcements and report to the papers such work as he thinks would be of interest to its readers. And then the medical libraries are accessible to him. He writes his articles for so much a line, and the paper prints it to increase its circulation. Can you tell me how to prevent it? I think you cannot.

Scarcely a day passes that I do not see in the lay papers a report of some clinic, important or unimportant, and the name of the surgeon who conducted it mentioned. I always feel sorry for the surgeon. I will tell you why. There are those in the profession who would believe that these men were party to the article, but with an occasional exception, I know to the contrary. And then again medical students often pay their way through college by reporting to the papers interesting clinics. The teacher cannot possibly know of this, because the student is sharp enough to keep his own counsel to save himself from expulsion. One student, after he had been graduated, told me he made eight hundred dollars reporting clinics to the lay press, both to the syndicates and the Associated Press, and many others have given me similar information. Teachers in public clinics are the most frequent victims.

Every surgeon or specialist depends upon the profession, and not the people, for his patients. Nine patients out of every ten who come to the specialist or surgeon are sent by physicians. Now, understanding this, and knowing that the profession stamps as dishonorable and contemptible newspaper advertising which leads to notoriety and not reputation, and knowing that physicians would ostracise such a surgeon or specialist and send their patients elsewhere — do you believe, or any other member of the profession, that a specialist would, if he could prevent it, allow any allusion to his work in the lay press? Understanding this question as I do, I cannot believe you do. Every article that ever appeared has injured the surgeon or specialist incalculably. If I had a hated enemy, which I hope I have not, and I wished to ruin him professionally and financially, I know of no way so safe or so speedy as to hire a space-writer to report his clinic, and, if possible, his private operations, to the lay press once or twice a week. In less than six months the profession to a man would ostracise him.

A few years ago the newspapers followed a case of mine in the City Hospital for three months with daily fake reports, in spite of my strenuous efforts and those of the hospital and my friends to suppress it. It almost ruined me professionally and financially; a lucrative practice was almost wholly destroyed.

No! The specialist whose clinics and name appear in the daily lay print is to be pitied by his fellow practitioners, not censured. I have had the bitter experience and I know what it costs.

I am, dear Doctor,
Very truly yours,
A. M. Phelps, M.D.

METEOROLOGICAL RECORD

For the week ending November 18th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...12	29.97	32	36	27	95	72	84	N.W.	N.W.	12	22	N.	C.	.51
M..13	30.26	33	41	25	73	58	66	N.W.	N.W.	16	11	C.	F.	
T...14	30.32	34	41	27	70	75	72	N.W.	S.E.	6	2	C.	O.	
W..15	30.07	40	48	33	89	100	94	E.	W.	5	11	O.	O.	.01
T...16	30.25	43	50	36	85	76	80	N.W.	N.	14	9	C.	O.	
F...17	30.50	34	37	30	79	86	82	N.	N E.	8	5	F.	C.	
S...18	30.21	40	50	29	82	82	82	S.	S.W.	9	9	F.	O.	
☞	30.23		43	29			80							.56

* O., cloudy; C., clear; F., fair; G , fog; H., hazy; S., smoky; R , rain; T., threatening; N., snow. † Indicates trace of rainfal. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 18, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,550,053	1189	389	9.92	17.52	.88	1.76	4.40
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,266,832	—	—	—	—	—	—	—
St. Louis . . .	623,000	—	—	—	—	—	—	—
Boston . . .	539,416	201	58	8.33	17.15	.49	1.96	3.92
Baltimore . .	506,389	165	41	12.60	10.80	3.60	4.80	4.20
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	305,000	95	32	18 02	5.30	5.30	6.36	4.24
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	47	16	12.78	2.13	10.65	—	2.13
Nashville . .	87,754	68	23	13.23	11.76	7 35	—	1.47
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	111,732	29	9	17.25	17.25	—	3.45	6.90
Fall River . .	103,142	—	—	—	—	—	—	—
Cambridge . .	92,520	23	13	8.70	30.45	4.35	—	—
Lowell . . .	90,114	32	13	3.13	9.39	—	3 13	—
New Bedford .	70,511	14	3	7.14	7.14	—	7.14	—
Lynn	68,218	20	3	5.00	—	—	5.00	—
Somerville . .	64,394	6	2	33.33	33.33	—	16.66	—
Lawrence . .	59,072	16	10	25.00	6.25	6.25	—	12.50
Springfield . .	58,266	19	9	36.82	5.26	—	10.52	10.52
Holyoke . . .	44,510	6	3	—	—	—	—	—
Brockton . .	38,759	7	2	—	—	—	—	—
Salem	37,723	8	4	—	25.00	—	—	—
Malden . . .	36,421	5	2	20.00	20.00	—	—	20.00
Chelsea . . .	34,235	10	2	—	—	—	—	—
Haverhill . .	32,651	12	3	16.66	8.33	—	—	16.66
Gloucester . .	31,426	7	—	—	—	—	—	—
Fitchburg . .	30,523	6	2	16.66	16.66	—	—	—
Newton . . .	30,461	7	—	—	—	—	—	—
Taunton . . .	28,527	6	1	—	—	—	—	—
Everett . . .	28,102	6	3	16.66	16.66	—	—	16.66
Quincy . . .	24,578	3	1	—	33.33	—	—	—
Pittsfield . .	23,421	4	1	25 00	—	—	—	—
Waltham . .	22,791	3	—	—	—	—	—	—
North Adams .	21,583	2	1	50.00	—	—	—	50.00
Chicopee . .	18,316	6	1	16.66	—	—	16.66	—
Medford . . .	17,190	5	1	—	—	—	—	—
Newburyport .	15,036	6	1	—	16.66	—	—	—
Melrose . . .	14,721	4	1	75.00	—	—	25.00	—

Deaths reported 2,045; under five years of age 651; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 213, acute lung diseases 315, consumption 221, diphtheria and croup 87, typhoid fever 49, diarrheal diseases 35, whooping-cough 17, scarlet fever 13, measles 13, cerebro-spinal meningitis 7, erysipelas 5.

From whooping-cough New York 10, Nashville 3, Boston, Pittsburg, Springfield and North Adams 1 each. From scarlet fever New York 10, Pittsburg, Pittsfield and Melrose 1 each. From measles New York 12, Springfield and Melrose 1 each. From cerebro-spinal meningitis New York and Boston 2 each, Worcester, Somerville and Lawrence 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending November 11th, the death-rate was 18.0. Deaths reported 3,936: acute diseases of the respiratory organs (London) 325, diphtheria 135, measles 105, fever 97, diarrhea 44, whooping-cough 41, scarlet fever 29, small-pox 2.

The death-rates ranged from 10.2 in Croydon to 25.1 in Liverpool: Birmingham 19.4, Bradford 16.8, Gateshead 15.7, Hull 16.7, Leeds 20.2, London 17.3, Manchester 16.9, Newcastle-on-Tyne 16.6, Nottingham 18.3, Sheffield 16.5, Sunderland 18.6, West Ham 14.1, Wolverhampton 20.0.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, December 4th, at 8 o'clock.

Subject: "Heredity."

Papers: C. S. Minot, LL.D., "Science and Heredity."

Dr. Robert Macdougall, Ph.D.: "Psychology and Heredity."

Election of members.

A. K. Stone, M.D., *Secretary*, 657 Boylston St.

Suffolk District Medical Society, Surgical Section. — The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, December 6, 1899, at 8.15 o'clock.

Paper: "The Open Treatment of Fractures," by Dr. C. L. Scudder. Discussion by Drs. C. B. Porter, G. W. Gay, J. C. Warren and Paul Thorndike.

F. G. Balch, M.D., *Secretary*, 279 Clarendon St.

Seventh International Otological Congress. — Owing to the date for holding the International Medical Congress falling in 1903, it has been decided that the next International Otological Congress shall not take place in that year, but in 1902. The meeting will be held at Bordeaux, under the presidency of Dr. Mowee.

RECENT DEATH.

Joseph G. Wallach, M.D., of New York, died on November 21st, at the age of forty-four years. He was a native of New York City and was graduated from Bellevue Hospital Medical College in 1877.

BOOKS AND PAMPHLETS RECEIVED.

A Test Case for Taste. By Nathan T. Beers, Jr., M.D., Brooklyn. Reprint. 1899.

Anent an Urgent Duty of the Profession. By B. Oettinger, M.D., Denver. 1899.

Spencer's Disease: Dermatitis Multiformis Exfoliativa. By Walter Spencer, M.D. 1899.

Transactions of the Maine Medical Association, 1899. Vol. XIII, Part II. Portland, 1899.

Some Notes upon the Tuberculin Test. By Edward O. Otis, M.D., Boston. Reprint. 1899.

Cystoid Disease of the Testicle: Teratoma Testis? By F. R. Sturgis, M.D., New York. Reprint. 1899.

Five Hundred and Fifty Surgical Operations without Alcohol. By Chas. Gilbert Davis, M.D., Chicago. Reprint. 1899.

Accessory Thyroid Tumors at Base of Tongue; Report of Cases. By Jacob E. Schadle, M.D., St. Paul, Minn. Reprint. 1899.

Sinus Thrombosis; Cure without Opening the Sinus. Prognosis of Laryngeal Tuberculosis. By Robert Levy, M.D., Denver, Colo. Reprints. 1899.

The Propagation of Diseases by Means of Insects, with Special Consideration of the Common Domestic Types. Address in Hygiene. By W. M. L. Coplin, M.D. Reprint. 1899.

Akromegaly: With Report of a Case Presenting Some Unusual Features; Height of Patient, Eight Feet and Six Inches. By William Nicholas Lackey, M.D., Gallatin, Tenn. Reprint. 1899.

The Tuberculosis Crusade and Its Problems. Traction Plasters for Temporarily Contracting an Affected Lung, in Lieu of the Murphy Operation. By Charles Denison, A.M., M.D., Denver. 1899.

The Milk-Supply of Cities: Can it be Improved? The Reconstruction of the Pelvic Structures Incident to Lesions of Perineum. By Henry O. Marcy, A.M., M.D., LL.D., Boston. Reprints. 1898-99.

Position in Sleep: A Principle in Neurologic Therapy. Medical Libraries. A Case of Family Susceptibility to Facial Paralysis. Isolated Finger Paralysis. By William Browning, M.D., Brooklyn, N. Y. Reprints. 1899.

Original Articles.

TUMOR OF THE PITUITARY BODY.

BY G. L. WALTON, M.D.,
Clinical Instructor in Neurology, Harvard University; Physician to Neurological Department, Massachusetts General Hospital,

AND F. E. CHENEY, M.D.,
Assistant in Ophthalmology, Harvard University; Surgeon to Massachusetts Charitable Eye and Ear Infirmary; Ophthalmic Surgeon to Out-patient Department, Massachusetts General Hospital.

PATHOLOGICAL REPORT BY F. B. MALLORY, M.D.,
Assistant Professor of Pathology, Harvard University.

Tumors of the hypophysis have acquired a new interest since Marie's demonstration of acromegaly a little over a decade ago. The statement made by Rath[1] in 1888, that the function of this organ was unknown, would not be generally accepted to-day, and of late the indirect results of pituitary tumors, through pressure and involvement of adjacent structures, have taken a position of secondary interest as compared with symptoms attributable to disturbance of glandular activity.

The hypophysis, or pituitary body, an organ averaging about half an inch in its anteroposterior diameter, and quarter of an inch transversely, lies in the sella turcica, invested in a fibrous sheath derived from the dura mater, a layer of which (tentorium sellæ turcicæ) roofs over and separates it from the intracranial contents; the infundibulum passes through an opening in this membrane.

The hypophysis consists of two distinct bodies separated only by a fibrous lamina. These two bodies are distinct in structure and function. The posterior lobe represents an outgrowth of the embryonic brain, atrophied in man, and subserving no known nervous function. The chief interest centres in the anterior lobe, which is practically a ductless gland developed from the ectoderm of the buccal cavity. This gland, like others of its class, plays an important part in the economy; its secretion (absorbed by the lymphatics, since in man the duct has disappeared) undoubtedly plays an important part in the nutrition and growth of the body. The exact action of such secretions on the central nervous system is a matter of speculation; Collins[2] alludes to that of the pituitary gland as either neutralizing waste products, or serving as a trophic agent. Gigantism, acromegaly and allied states seem to stand in a certain relation to disorders of the pituitary gland, though evidence of this relation has by no means proved constant. As Starr puts it, it is not true that a tumor of this organ always produces symptoms of acromegaly, and, conversely, the autopsy does not always show change in the pituitary body in acromegaly.

Few authorities now deny, however, that a relation exists between disease of the pituitary gland and acromegaly, a disease characterized by mental apathy, enlargement of hands, feet and face, vasomotor symptoms, together with loss of sexual power, general weakness, and other signs of perverted growth and disordered nervous function. Arguments are still adduced to show that the diseased gland represents a result rather than the cause of the general perversion of function, but the weight of evidence is in the opposite direction.

The interest in a case of tumor of the pituitary body is now threefold: first, in its bearing upon the anatomy of the chiasm and optic tract, as shown by the various restrictions of the visual field; second, in its symptomatology, as bearing upon early diagnosis; and, third, in its pathology, more particularly with reference to the disturbance of the glandular function.

Vision. — The situation of the gland is such that the optic chiasm is the first important body to be affected by its pressure. The tumor may extend upward either in front of the chiasm or behind it, or both; amblyopia and various forms of visual field restriction follow. Both temporal fields are often lost through pressure upon the chiasm anteriorly; sometimes one eye is completely blind, while the other shows loss of temporal field. In a case recently reported by Leszynsky there was complete temporal hemianopsia in one eye and temporal hemiachromatopsia in the other. Not uncommonly one field is more contracted than the other. Homonomous hemianopsia is sometimes found (as in our case, at a later stage), showing pressure on the optic tract behind the chiasm.

Symptomatology. — The *résumé* of Rath covers this ground, apart from the functions of the gland itself. The symptoms in the order of their frequency and importance are: (1) Headache, generally frontal and temporal; (2) vomiting; (3) vertigo; (4) disturbance of motion, spastic and paretic (pressure on the crura cerebri); (5) disturbance of speech; (6) disordered pupils (mydriasis, myosis, loss of reaction, inequality); (7) paralysis of ocular muscles; (8) diabetes mellitus and insipidus. To these symptoms must now be added those of acromegaly, namely, abnormal development of the hands and feet, large features and prominent brows, large jaws, with separation of teeth, broad nose, thick and long lips, large tongue, thick mucous membranes, doughy tissues, loss of sexual power, weakness and paresthesia.

It must be remembered that these changes are less marked when the disorder appears in adult life after the growth of the patient is established. The fact must also be borne in mind that many persons have some or all of these peculiarities of growth without being deemed abnormal. With regard to such individuals it is worthy of note that Pechkranz[3] reports a case of fatal tumor of the hypophysis occurring in a man who showed from youth certain peculiarities of growth and nutrition (hyperplasia of genitals, feminine build of osseous system, etc.). These peculiarities he attributed to congenital anomalous structure of the pituitary body, this anomalous structure forming the basis for the new growth. Of this view our case affords a striking corroboration, as will be seen in the report appended.

Pathology. — The commonest form of new growth appears to partake of the nature of sarcomata or adenomata — tumors rich in cells and vessels. In some cases the gradual passage from gland tissue to irregularly placed cells renders the diagnosis between adenoma and sarcoma difficult, with strong suggestion of adenoma, as illustrated by the case of Hippel,[4] who asserts that all these new growths start from the anterior lobe.

Burr and Riesmann,[5] in a recent communication, have called attention to a probable source of fallacy on the part of those who argue that tumors of the hypophysis without acromegaly negative the implication of this organ in that disease. These writers argue that a very small portion of a ductless gland suffices to perform its function; in evidence they adduce the fact that removal of half of the thyroid gland fails to produce myxedema. In support of their view they report a case of pituitary tumor without signs of acromegaly, careful examination of the tumor showing that a very considerable portion of the glandular structure was intact. Dr. Mallory's findings in our case tend to corroborate this view, for he reports that beyond question a certain part of the pituitary body is present.

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[1] Rath: Ophthalmologische Archiv, Bd. xxxiv, Heft 4.
[2] Nervous Diseases, by American Authors, 1895, p. 893.
[3] Neurolog. Centralbl., 1 März, 15 März, 1899.
[4] Virch. Arch. f. path. Anat. u. Path., 1891., Bd. cxxvi.
[5] Journal of Nervous and Mental Diseases, January, 1899.

The question has not been determined whether the secretion is analogous to that of the thyroid gland, in that by destroying toxins, or otherwise, it checks overgrowth of tissue, or whether, on the other hand, the secretion is itself an irritant acting as a stimulus to growth. The arguments adduced by Brooks[6] in favor of the latter supposition seem on the whole most convincing, namely, (1) that the pituitary gland has been often completely destroyed without signs of acromegaly; (2) removal of the pituitary body in lower animals does not produce acromegaly; (3) feeding with pituitary extract has no effect upon the disease.

Brooks allows that sarcoma predominates over adenoma in post-mortem reports, but calls attention to the fact that individual observers may be mistaken in the nature of these growths, as he had been himself in his early cases.

Before leaving the question of pathology, it is important to note that optic neuritis is rare, but optic atrophy common. The absence of optic neuritis has been explained by the fact that the tumor, before it has reached great proportions, is separated from the cranial cavity by the tentorium sellæ turcicæ (Pechkranz). Again, when the tumor has become extensive, it shuts off the cerebro-spinal fluid from the sheath of the nerve by pressure (Hippel). In the case of Johnston and Morro[7] neuritis appeared in one eye and atrophy in the other. Our case comes within the usual rule, in that optic atrophy, without neuritis, was present. This point affords an important aid in diagnosis, for, given general symptoms of tumor of the brain with optic atrophy, attention is at once directed to the hypophysis; if, in addition, loss of temporal fields appear, the diagnosis is made probable.

Dr. G. C. D., a man of exceptional physical vigor, of even disposition, and of mental acquirements giving great promise of success in his chosen field, first consulted Dr. Cheney, July 20, 1895, in regard to his eyes. (He was at that time house officer in the Massachusetts General Hospital, age twenty-six.) His family and previous history were good, with the exception of occasional headaches dating from early life; these headaches were of the nature of migraine and were accompanied by temporary loss of vision on one side (hemianopsia). He was operated on for spina bifida in early infancy. He was a large man with rather heavy gait, with large extremities and features, including broad nose, large mouth, very thick lips. The tongue was large, the jaws large, the teeth separated. The beard was scant, though he had a fair moustache; the hair was dry and crisp. These peculiarities were not sufficiently noticeable to suggest abnormality, but are mentioned in view of their possible connection with congenital defect in structure of the gland which proved later to be the seat of disease. There was no enlargement of thyroid. He complained to Dr. Cheney of asthenopia, a slight blur in reading, and occasional headaches. The headaches were no more severe than he had been subject to for a number of years.

An examination under homatropine gave the following result: v. o. d. with $+ 0.50 = + 0.50$ cyl. axis $100^\circ = 0.7$, and v. o. s. with $+ 0.50 = + 0.50$ cyl. axis $100^\circ = 1$. There were floating opacities in the vitreous of both eyes, considerably more in the right. Fundus examination negative; glasses correcting the astigmatism were prescribed for constant use. He was seen frequently during the fall and early winter, complaining of various slight asthenopic symptoms. There was some variation in vision from time to time, but there was no falling off appreciable to the patient. On January 21, 1895, with correcting glasses v. o. d. $= 0.6$; v. o. s. $= 1$. With the exception of this slight decrease in sight, and the floating opacities in the vitreous, there was nothing to suggest ocular or general disease.

He was not seen again until April 15, 1896. For some little time he had noticed that people approaching from the left were not seen as readily as those coming from the right, and quite recently everything had looked black and blotted out on the left side of the visual field. There was little or no headache; he felt perfectly well and looked the picture of health. On testing the fields of vision there was found complete left hemianopsia in the left eye for white and colors, the line of demarcation being unusually well defined. He was still able, however, over the central and upper portion of the left field, to distinguish faintly the movements of the hand. The right half of the field was normal for form and color, and the central vision was normal for distance and near point. The field of vision of the right eye was perfectly normal for form and color. The central vision, however, had fallen off to five-tenths and was also defective for near. In June, 1896, Dr. Wadsworth saw the case in consultation and expressed the opinion that both discs were slightly atrophic. Dr. Walton saw him in May, 1896, and at intervals afterwards.

An exhaustive examination from the neurological point of view, October 20, 1896, revealed no disturbance of motion, nutrition, sensation or reflexes, superficial or deep; in fact, the physical examination was absolutely negative except for the pallor of optic discs and loss of visual acuity and field. The only complaint was poor vision and impaired virility, a symptom which attracted no attention at that time, though in strong contrast to his general vigor. In view of the later history it was really of considerable import and should, perhaps, have been more taken seriously into account. The urine was examined a number of times during the summer and fall of 1896, the only result being a well-marked trace of arsenic.

He was attended throughout his illness (except while under the care of Dr. Dennett at Arlington) by his colleague, Dr. Painter, whose records we have utilized in reporting the progress of the case.

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[6] Harlow Brooks: Archives for Neurology and Psychopathology, 1898, vol. i, No. 4.

[7] Glasgow Medical Journal, August, 1898.

The patient began practice in May, 1896, and in the following June took charge of a case which kept him out of town till the 22d of August. During this time he was perfectly well, and though his eyes disturbed him, he succeeded in winning the final prize in two or three golf tournaments. He had to depend upon the caddy to follow the ball, though he had no difficulty in making the stroke. After being at home about two weeks he went away with another patient and did not return till just before his marriage, which took place in September. At this time he reported that there had been a considerable decrease in the vision of both eyes, and he had considerable difficulty in reading. He appeared in excellent condition, had gained in flesh, and felt well physically and mentally. Dr. Cheney's examination at this time showed v. o. d. = 0.2 ; v. o. s. = 0.5. The fields of vision were unchanged. The right disc was somewhat grayish in tint. On November 12, 1896, v. o. d. = $\frac{20}{70}$; v. o. s. = $\frac{20}{40}$. The fields of vision taken eight days later showed no contraction for form or color in the right eye, and the hemianopic field of the left was practically the same as on previous examination. Both discs were noticeably atrophic in appearance. During the fall and early winter he had an occasional mild headache, not accompanied by nausea or vomiting. In November it was noticed that he was apt to doze off and to sleep unduly. Instead of being ambitious and anxious to do for others, he required constant stimulus even in routine work. His apathy steadily increased. In December, 1896, and in January, 1897, he was distinctly brighter and showed more interest in his work. In January, 1897, Dr. Derby saw the case in consultation, and from this time on the ocular condition was under the observation of both Drs. Derby and Cheney. Headache during the latter part of this time became more frequent and occasionally accompanied by nausea. In the latter part of February he became drowsy and apathetic. Visual examination showed decrease in the right eye to $\frac{20}{200}$, in the left to $\frac{20}{70}$. His weight, which had reached two hundred and sixteen pounds in January, decreased slightly, and his color became poor, his lips particularly showing a waxen pallor. Headaches occurred every three weeks till midsummer, 1897. He grew weaker, finding it difficult to lift the heavy window sashes. His speech also showed less fluency. There was no hesitation for words but they were enunciated slowly. His appetite became very capricious. No diminution was noted in other special senses. His gait was slow and dragging. The features became gradually more heavy and expressionless and the dryness of the hair increased.

His interest lagged even in matters pertaining to his profession. In the early part of the spring, while away with a patient, he attempted to perform transfusion, and experienced great difficulty in finding the vein. Muscular weakness, somnolence, and lack of interest increased. An examination of vision made by Dr. Derby in June showed improvement in the right eye to $\frac{4}{60}$ and the left to $\frac{4}{10}$. During a remission he amputated a breast, obviously handicapped by poor vision. Finding the same difficulty in another operation he abandoned general surgical work. During June and July, he showed evident signs of exhaustion. His appetite was poor, he had lost a number of pounds in weight, his muscular strength was at a very low ebb, and he was somnolent much of the time.

Examination by Dr. Derby in June showed left homonomous hemianopsia, and an examination by Dr. Walton in September showed, in addition, loss of color sense in the otherwise normal half field of the right eye. At the examination in September he had lost thirty-four pounds, weakness was marked, speech was slow, and he seemed quite sluggish in grasping directions, for example, in the use of the perimeter, though his answers regarding the vision were definite and constant in several trials. The absence of color fields in the right eye and the normal boundaries of the color fields in the left eye were established with special care by repeated tests. Five days later he had a sudden attack of numbness and prickling in the left arm and left side of the face and tongue, of short duration.

The 1st of October he was persuaded to give up his work. After going into the country he apparently improved for a time. Since July his headaches had come at rather shorter intervals, and the frequency of the nausea had also increased.

After an interval of comparative comfort and enjoyment he was confined to his bed by a severe headache with extreme prostration, and after a period of somnolence, died December 29, 1897.

PATHOLOGICAL REPORT BY DR. F. B. MALLORY.

The sella turcica is involved by a discrete, lobulated, encapsulated tumor measuring 2.7 centimetres from front to back, 3.5 centimetres in width, and three centimetres in vertical diameter. The tumor has led to the disappearance of the olivary process, and of the base and posterior portions of the sella turcica. On section of the growth, after fixation in formaldehyde, the growth appears soft and granular; for the most part dark grayish in color, but in the posterior half there is a whitish area and also several translucent light grayish masses resembling cartilage but softer. Two or three septa extend part way in from the fibrous capsule and to some extent divide up the growth.

Microscopic examination shows the growth to consist mainly of delicate blood-vessels surrounded by walls of round cells, which are, for the most part, epitheloid in type. The vessels can be teased out readily, like the tubules of a testicle. The transparent areas resembling in gross hyaline cartilage consist of masses of colloid material. The darker areas in the growth are due to hemorrhage. Along one of the septa of fibrous tissue is an area which presents a different appearance from the rest of the growth. It consists of narrow compressed tubules, some of the cells of which tend to take on eosin stain, as do many of the cells in the anterior portion of the normal pituitary body after fixation in Zenker's fluid. A number of these tubules are dilated and contain colloid material. This area is probably the remains of the anterior part of the pituitary body.

Diagnosis. — Perithelial angiosarcoma (endothelioma).

To summarize the case, we have a patient with peculiarities of growth suggestive of congenital defect of the pituitary gland. Attacks of migraine accompanied by hemianopsia had existed so long as to at first exclude an organic basis. Later, we find a persistent defective field involving primarily the temporal field of one eye only ; later, an extension to the nasal field of the other eye, producing homonomous hemianopsia ; still further we have a loss of color field on the otherwise unaffected side of one eye (hemiachromatopsia). During the progress of the case we find loss of sexual power, diminution of vision and optic atrophy, the ocular symptoms with the persistent headaches first establishing the diagnosis of tumor. Toward the end appeared vasomotor symptoms, somnolence, physical weakness and apathy and lack of mental grasp.

Perhaps the most interesting feature of the case is the anomalous distribution of visual field impairment, an impairment difficult to explain even with the pathological findings before us. In the first place, the recurring attacks of hemianopsia extending over a long period of time are perfectly consistent with functional disorders of the visual centres (migraine). It is difficult to believe that they could have been produced by pressure upon an optic tract persisting for so great a length of time and yet producing no permanent defect in the field or other sign of intracranial pressure. The next point of interest is the appearance of achromatopsia in one of the otherwise unaffected half fields. Achromatopsia is a rare condition, if we may judge from the lack of reported cases; it is, however, possible that the condition would be oftener found if oftener sought. Enough cases are already on record to establish the occurrence of loss of color sense in a field which shows no change in the perception of objects. The disturbance has hitherto been regarded as one of central origin, Gowers, for example, stating that it probably depends upon disease of a part of the occipital lobe, in which lies a separate color centre; Villebrand regards this centre as lying in front of the apical region, through which impressions pass, however, to reach it. According to this author, disease of the apex itself causes loss of form and color sense only in the corresponding half fields. This view would certainly be in perfect analogy with that of other cerebral symptoms, and yet our case forces us to recognize the possibility, at least, that achromatopsia may result from peripheral lesion. The case recently reported by Leszynsky points in the same direction.

It is not improbable that when the patient was first seen (July 20, 1896), that the slight defect of sight in the right eye was due to pressure on the nerve fibres supplying the macular region, and not, as was then supposed, to the floating opacities in the vitreous. Nine months later the central vision of the right eye has decreased to five-tenths, while the field for form and color remained perfectly normal, and in connection with this a well-marked temporal hemianopsia had developed in the left eye, but the macular fibres not being involved, central vision was unimpaired. From this time on there was a gradual failure of central vision in both eyes, with very little change in the visual fields for at least a year. Three months before his death, a well-defined nasal hemianopsia had developed in the right eye, giving a left homonomous hemianopsia indicating conclusively pressure on the right optic tract.

It should be noted also that while the temporal field of the right eye was normal for form at this time, the color field had entirely disappeared. The earlier visual fields showing monocular hemianopsia and a perfectly normal field for form and color of the other eye, with defective central vision, were difficult to account for, or rather it was not easy to understand at just what points pressure was exerted to give this result. The optic tract and chiasm were not removed with the growth, and as the writers were unfortunately absent from the autopsy, the exact points of pressure are still more or less theoretical. The chiasm would seem to be the only point where pressure could have been exerted on the macular fibres independently. These fibres are of course at the outer surface of the nerve just after their exit from the globe, but approach nearer its centre as they progress backward and are entirely central at the optic foramen. In front of the chiasm the bundles form a horizontal oval. Entering the chiasm they almost reach the periphery — and interlace — the macular fibres being both crossed and uncrossed at about the centre of its dorsal surface. In the tract they again become too deeply seated to suffer independently of the other nerve bundles. The crossed fibres to the left eye might perhaps have been involved just as they left the chiasm to join the right optic tract, and the later development of a left homonomous hemianopsia would certainly favor this view if the early and extensive involvement of the macular fibres of the other eye could be ignored. The visual condition is best accounted for by supposing the crossed fibres to have been pressed upon, either at the anterior or posterior part of the chiasm, probably the latter and to the right, just before joining the uncrossed fibres to pass to the tract. A small nodule of the growth involved first the macular fibres of the right eye, before they had reached the point of separation into crossed and uncrossed, and later those of the left, probably near the centre of the chiasm. Later, the growth seems to have extended backward and to the right, exerting enough pressure on the crossed fibres of the right eye to destroy the color perception, but not the field for form, while the complete destruction of function of the uncrossed fibres of this eye was probably due to extension into the right optic tract.

CONCLUSIONS.

(1) Congenital peculiarities in growth resembling those of acromegaly, but occurring in otherwise healthy individuals, may point to structural defect of the pituitary gland, a defect sometimes furnishing the starting-point for new growth later in life.

(2) The occurrence of pituitary tumor without definite symptoms of acromegaly does not necessarily disprove a connection between this organ and this disease, for the persistence of even a small amount of healthy gland tissue is sufficient fairly to carry on the function of the pituitary body.

(3) The combination of general symptoms of new growth with optic atrophy and loss of temporal field of vision makes the diagnosis of pituitary tumor almost certain.

(4) Hemiachromatopsia is not necessarily of central origin.

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SPECIAL PREPARATIONS OF PATIENT, SURGEON, INSTRUMENTS, SUTURES, ETC., AND POINTS IN TECHNIQUE OF OPERATIONS FOR HERNIÆ.

BY J. COPLIN STINSON, M.D., C.M., SAN FRANCISCO, CAL.

As the excellent results obtained in operations for the cure of hernia depend partly upon aseptic and antiseptic technique, etc., I shall briefly describe and concisely review the several points in the preparation of the patient, surgeon, instruments, etc., as they apply more especially to hernia operations.

The following methods of preparation, etc., are followed by the writer, who, after repeated trials, has found them perfectly satisfactory.

PREPARATIONS OF THE SURGEON, ASSISTANTS, PATIENT, ETC.

Wash our hands, wrists and forearms and the skin of the patient at the field of operation with soap and water aided by a stiff brush. Remove, with an aseptic nail file, all the dirt and other foreign materials on, under and around our nails. Immerse our hands, etc., in boiled water, using an aseptic brush freely; dry with sterilized towels; immerse for several minutes consecutively in alcohol, 1–2,000 watery solution of bichloride of mercury, and warm sterilized saline solution, and finally dry them with sterilized towels.

Surgical cleanliness of the patient is obtained by the method employed for cleaning the hands, but in addition, the skin at the field of operation is always shaved first and after disinfection is completed and when immediate operation is not done, a pad of moist bichloride gauze, wrung out of 1–2,000 solution is kept in contact with the skin for several hours previous to the operation. Previous to the operation the skin is cleansed with sterilized warm salt solution.

Clearliness of the patient's alimentary canal is aimed at by emptying the bowels by mild cathartics and laxative injections.

Aprons for surgeons, assistants, etc. — Use rubber or other waterproof aprons which are covered in front, corresponding to the field of operation, with boiled towels wrung out of 1–2,000 bichloride solution.

Instruments are wrapped in a towel and sterilized by boiling for ten minutes in 1–100 bicarbonate-of-sodium solution, which prevents tarnishing of the metal and makes the knife, etc., retain their keen cutting edges. At the time of operation, instruments are allowed to remain on the boiled towel, but are covered with a sterilized towel.

Towels are sterilized by boiling in water for ten minutes. They are removed from the water at or shortly before the operation with sterilized hands.

Sponges. — For sponges use pads of boiled butter or cheese cloth taken from the vessel in which they have been boiled, at or shortly before the operation, with sterilized hands.

Gauze. — Absorbent gauze, which constitutes the principal dressing, and from which the sponges are cut, is prepared by boiling cheese or butter cloth in a solution of carbonate of sodium, 1–16, for two hours. It is then wrung out and boiled in saline solution or water for ten minutes. The soda saponifies the fat and breaks up the gummy elements of the cotton fibres. The gauze is used from the vessel in which it is boiled. Any gauze that is not used at the time for the operation may be rolled in a sterilized towel for subsequent dressing, etc.

Iodoform powder or gauze is not used by the writer as a dressing, etc., as it has a foul odor, sometimes causes poisoning, and when the gauze or the powder is not antiseptically prepared, handled and sealed, infection of the wound occurs. The iodoform and the fixing agents in the gauze interfere with the capillarity of the gauze, and thereby destroy the mechanical action which is the chief value of gauze dressings.

Position of patient during operation. — In the majority of cases use the dorsal position with the legs extended, but when there is difficulty in reducing intestine, etc., or if the intestine, etc., come down in the field during operation, use the Trendelenburg position until after the peritoneal cavity is closed and internal ring sutured.

Absorbent cotton. — All the cotton that comes in immediate contact with the wound must be boiled in water or salt solution for ten minutes before it is used.

Sutures and ligatures, etc. — Silk is used only for suturing the skin. Fine strands answer this purpose well. If subcuticular stitches are employed, use fine chromicized catgut, as it lasts long enough for firm union and does not have to be removed, as it is absorbed. The silk is boiled in sterilized water for fifteen minutes and then stored on a glass spool in boiled water in a sterilized bottle.

Primary, firm and durable union should be regarded of first importance in our operations, hence the buried suture and ligature materials are of prime importance. Many failures in hernia cases are due to the use of sutures, for example, ordinary catgut and tendon, that are absorbed before the union is firm and durable; to the use of non-absorbable sutures, or not suturing each of the layers separately and thus accurately. The structures dealt with in hernia operations are in the main tendinous and fibrous, requiring several weeks for durable union. Non-absorbable materials, for example, silk, wire, silkworm-gut, etc., should not be used as buried sutures and ligatures, as they all, at times, even when the wounds heal by primary union, act as foreign bodies, work their way to the surface, and form slow-healing, painful and troublesome sinuses. Cases have been observed in which patients have been incapacitated for weeks and months on account of sinus formation. At times repeated operations have to be done to remove the ligatures or sutures, and still later second operations to cure the hernia. In earlier articles the writer reported cases in which sinuses formed following the employment of silk, silver wire and worm-gut as buried sutures. In addition, the writer reported a case in which sinuses formed following the use of too heavily chromicized catgut. Since then he has seen several such cases.

Chromicized tendon is the most suitable material for a buried suture, as it is non-irritating, and when well chromicized is not absorbed for two or three months, when it is replaced by fibrous tissue. Busse in his experiments showed that perfect tendinous union does not occur under ten weeks, or just about the period required for the absorption of chromicized tendon. In the absence of tendons, chromicized catgut should be used as buried sutures. Marcy maintains that kangaroo tendons, if properly chromicized are very resistant and that they remain in the tissues for three months before they are absorbed. The writer has seen kangaroo tendons, supposed to be properly chromicized, that were absorbed in about eight days. To ligate vessels and close the peritoneum use fine chromicized catgut, for the skin fine chromicized catgut or silk.

The catgut. — The writer in earlier papers described the following method of sterilizing and storing catgut, which has proved to be absolutely reliable. Two sizes are all one needs, No. 25 and 20, according to the American wire-gauze system, the fine catgut to be used for the skin, peritoneum, ligating vessels, etc., the other, also chromicized, in the absence of chromicized tendons to be used as buried sutures, for the other layers. The preferable form of catgut is that put up in bowlines, each about one yard long and rolled separately in bunches. If the catgut does not come in this form, then for convenience cut into pieces one yard long. Each strand is folded on itself and made into a figure of eight by tying the end around the centre, where the loops meet. Bowlines are selected because they are more easily prepared and more handy to manipulate in operations. Before the operation a sufficient number of them can be removed with sterilized forceps from the storage bottle without infecting the rest of the gut.

To prepare the gut. — (1) Place the bowlines in ether for several days to remove the fat; (2) change to a sterilized vessel containing a 1–2,000 solution of corrosive sublimate in pure ether for three days or in a 1–4,000 for a week, to disinfect the gut. Remove the gut from the bichloride-ether solution and chromicize it by placing it in an alcohol solution of potassium bichromate made as follows: Take 15 grains of potassium bichromate, dissolve it in an ounce or so of sterilized water, add the chromate solution to a pint of ordinary alcohol (sterilized). Leave the gut in this solution till it is a golden color (usually about twenty-four hours are sufficient), when it is removed and placed in a sterilized basin and sun-dried, which takes a couple of days or so longer. To complete the sterilizing process and have the material in the most suitable storage fluid, place the gut in a sterilized bottle with a screw or other air-tight top. Pour in ordinary alcohol to more than cover gut. The alcohol should about half fill the bottle. Stand the bottle in water which reaches nearly to the lower edge of the screw or other top. In order not to take a chance of breaking the bottle, stand it on a folded towel placed in the bottom of the vessel containing the water, which is heated to the boiling point. When the air is driven from the bottle by the boiling alcohol, screw down the top tightly. It takes a couple of minutes to drive off the air. Leave the sealed bottle in the water at the boiling point for ten or fifteen minutes. At the lapse of the time the bottle is removed, allowed to cool, and the gut is ready for use. There is no danger of an explosion with the top screwed down or otherwise fastened tightly. Watery solutions for sterilizing catgut are avoided by the writer, as they are not suitable for catgut. Water swells the strands to such a size that they are unfit for neat, accurate and esthetic suturing. The gut is sun-dried to get the same effect which is obtained in the process of tanning hides. The bichromate of potash penetrates the tissues of the gut and becomes so intimately associated with the fibrils that it is not dissolved out by heat and solutions. The chromicizing process more than doubles the resistance to absorption of the catgut in the tissues. Catgut left longer than about twenty-four hours becomes too resistant and may not be absorbed in months. Any catgut that is left over after an operation is returned to the storage bottle with sterilized forceps, if it is aseptic; otherwise it is thrown away. Only a comparatively short portion of the surgeon's time is engaged during the processes described, in return for which he has an absolutely sterilized material. The tendons, catgut and silk used during operations are placed immediately before and during them, between sterilized folded towels wrung out of 1–500 mercuric-chloride solution.

Needles and technique of suturing, etc.— For passing stitches, needles should be used that can be quickly threaded, easily handled without a holder and that readily penetrate the tissues without contusion or producing hemorrhage. The writer finds that a moderately fine curved Hagedorn needle about two and one-half inches long with the curve corresponding to the quarter of a circle answers best for introducing the buried sutures. In fat patients a needle with the curve corresponding to the half of a circle should be used for the deeper layers, while a fine straight Hagedorn is best for the skin. The amount of tissues that is included in the bite of the needle and the stitches should be just sufficient so that the edges are broadly and evenly approximated and so that the stitches do not tear out while primary and durable union are taking place. By these means the edges are in contact without tension. If an extra or unnecessary amount of tissues is included in the bites of the needle, there is liable to be some tension on the sutures and gaping of the approximated edges which interfere with union and favor recurrence of the protrusion.

The sac should be opened, its contents cleared out, all omentum that can be pulled down excised, the sac, its neck, and as high as possible the peritoneum continuous with it removed and the cut edges of the serosa closed with continuous sutures. In inguinal hernia the subsequent steps of suturing used by the writer are as follows: The internal ring is closed with continuous sutures, leaving only sufficient room at the lower angle close to the pubic bone for the spermatic cord; the internal ring is reinforced and the canal closed by uniting with a layer of continuous sutures the internal oblique and transversalis muscles and their conjoined tendon to Poupart's ligament, leaving only room enough next to the pubic bone for the cord; suture the cut edges of the aponeurosis of the external oblique and the pillars of the external ring, which are made to snugly embrace the cord, and finally the skin but not the fat is sutured without drainage. Supracorrection of the peritoneum causes total obliteration of the hernia sac. Each layer is sutured separately and accurately to obtain firm and durable union and build a wall as thick as possible. The spermatic cord is placed at the lower angle of the internal ring close to the pubic cone, as this is its normal position, where it is not subject to pressure or in any other manner interfered with. During operations the deeper structures are brought well into view by gently holding aside the superficial structures with retractors, and thus the sutures can also be inserted neatly, quickly and accurately in the deep layers by lifting them with forceps.

In removing omentum it is perfectly safe and best to ligate the vessels only. To insure the ligatures from slipping, use the fixation ligature. The vessels to be tied are defined by spreading out the omentum, and a curved needle carrying fine chromicized catgut is passed around the artery or vein by piercing the tissues of the omentum immediately surrounding the vessel. The ligature is then tied in a reef knot and the vessel and other structures forming the omentum are severed beyond the ligature. All other vessels are similarly treated and the omentum cut away beyond the ligatures.

During omental excision by ligating vessels only in the omentum and using fixation ligatures, the ligatures are fixed in the omentum and cannot slip. It is unnecessary and absolutely unsurgical to ligate the fatty tissues of the omentum. By ligating the vessels only the work is easy, safe and esthetic, and it does away with numerous and mass ligatures, lumps of fat constricted by ligatures, omental stumps, non-absorbable, dead and wandering ligature, adhesions, sloughing, omental inflammation, local and general peritonitis and secondary operations for the removal of the omentum stumps and adhesions, etc.

The most suitable continuous stitch at present in use is the continuous single knot stitch as described by C. Ford. For practical purposes about every eighth stitch should be tied with a reef knot. In order that it does not untie and that no cut ends are left to irritate the wound, the knot should be tied without cutting the thread. This can be done by using the continuous double-knot stitch. With continuous stitches the work is done quickly, the coaptation is excellent, as the whole of the opposed surfaces are brought together, the circulation at the united edges is good, the tension is adjusted satisfactorily and the knots are so few in number that they do no harm, in fact, offer some advantages.

Interrupted stitches, or continuous reef or other double-knot stitches should be avoided as they are tedious and slow. The excessive number of knots, when the stitches are buried, are local irritants and may delay union. Extra time is taken in adjusting, tying and regulating the tension of the knots. The threads are slippery, may become tangled, and complicated maneuvres are required to insert and tie them.

If interrupted stitches are used as buried sutures the cut ends are points of irritation. The knots are liable to untie if the ends are cut short, and if left long they increase irritation. Mattress stitches should not be used, either buried or cutaneously, as the edges are not accurately and completely approximated. From their method of insertion the plane of force is changed, coaptation of the opposed surface is along only a line of the edges, the superficial edges evert on account of the curvature of the plane of force, and consequently there is imperfect approximation. The spaces between the stitches are not supported. The necessity of reversing one's movements while suturing renders the mattress stitches slow of insertion. The cobbler's stitch, or, as Marcy called it, the double continuous stitch, should also be avoided. It is slow, tedious, cumbersome and crude. Tension cannot be well adjusted. The changing of needles and directions of passing the sutures make needless work. There is also marked interference with the circulation along the line of union on account of the method of insertion of the stitches.

While inserting sutures, the stitches must not be drawn tightly on account of the danger of compression anemia and subsequent sloughing, which would interfere with perfect repair in structures that need great care on the part of the operator. In closing the skin and fatty layers, the needle and sutures include the whole thickness of the skin, but no fat. If any fat is taken up in the stitches it will subsequently give way under the pressure and fat necrosis result, with the discharge of fluid, etc., from the wound, which cause delayed healing, the sutures being loosened, the margins of the skin drawn apart a trifle and the scar is flattened out into a broad line within a few weeks and remains permanently as a scar. Fatty layers can be approximated by manual pressure applied on the outside of the wound, and after the skin sutures are tied, the cut fatty layers remain in contact by atmospheric pressure. To make sure of a very fine scar leave the silk sutures in ten days or longer if there is no irritation. Afterwards apply freely to the line of union, and beyond it, collodion, which prevents stretching of the scar line.

Mattress stitches, whether buried or otherwise, should be avoided, as has already been pointed out earlier in the paper, as they do not coapt accurately and evenly the whole broad surface of the edges to be approximated. Approximation is perfect, as it is along simply a line of cut edges. This is due to the manner in which the stitches are inserted and the direction in which they pull. Layers of sutures (not buried) of silver wire or other material should be avoided, as the edges of the different layers are not brought accurately together, but overlap, become irregularly matted together and adhere to one another and thus the union that results is liable to be weak and evanescent. Wire and worm-gut sutures should also be avoided in hernia operations, as they cut and irritate the tissues and have to be removed before the union is firm and durable. The use of these sutures also shows great imperfections in the surgical technic of the operators employing them, as in all probability their results from absorbable sutures have been unsatisfactory, owing to either imperfect methods of sterilization or imperfect technic, or both.

Basins are sterilized by boiling, or more quickly by pouring a small quantity of alcohol into them and igniting it; the heat and flames disinfect their interior.

Irrigating solutions. — The only solutions employed are warm and hot sterilized saline solution and warm and hot sterilized boiled water. In septic cases free and thorough irrigation with hot water or hot salt solution should be used, followed by sponging and drainage. In cases of diffuse peritonitis withdraw well to the surface all the infected intestines, irrigating freely the cavity and the infected coils, remove all septic material, dry cavity and infected intestines as thoroughly as possible with sponges, return the intestines and use drainage.

Physiological saline solution, representing the normal proportion of chloride of sodium in the blood, is the least irritating, and the most useful, general irrigating solution. It is made by boiling ninety grains of chloride of sodium in one quart of water. In the absence of hot saline solution use hot boiled water for irrigation and sponges. Normal saline solution or water is practically unirritating. The sponges are kept in the basins of it at an operation, and the surgeon's hands are washed in it once in a while, while he is at work.

Drainage and the material to use. — If abscess, sloughing, septic peritonitis, gangrene, or other septic condition is present drainage should in most cases be employed. In those cases where one is in doubt about drainage, be on the safe side and use it.

Drainage with a gauze wick or wicks, made by rolling loosely a strip of absorbent gauze in rubber or gutta-percha tissue, very much as one rolls a cigarette; several small holes are snipped in the rubber after it has been rolled, so that the fluids can enter at more than one point — R. T. Morris's wick — is very satisfactory. The wick extends from the infected area to the surface through the incision, which is closed by sutures as far as possible, leaving only sufficient room for the passage of the wick. If the area of infection is circumscribed and limited satisfactory drainage can be accomplished by one, but if the infection is diffused and widespread two or more wicks should be used. The end of the wick is allowed to rest in a mass of absorbent gauze on the surface of the abdomen and capillary drainage proceeds usefully and at once, until the mass of gauze becomes saturated with serum, when capillary power stops. The larger the mass of gauze drains or packings within the abdominal cavity, and the smaller the mass on the outer wall, the less effective is the drainage. A mass of gauze within the abdominal cavity is soon filled in its meshes with coagulated lymph, and its capillary action then ceases. The lymph unites gauze and tissues together, repair begins, and nature attempts to encapsulate the gauze. When the gauze is removed, the tissues are disturbed, the excess of reparative lymph which has been thrown out makes an inviting field for bacteria, and repair cannot proceed rapidly until the excess lymph has become absorbed or has broken down. Gauze is rendered less absorbent and consequently less useful if loaded with iodoform and fixing agents. Large gauze packing, glass, or other stiff drainage tubes should not be used for drainage, as such materials have a deathrate of their own. Of those patients who recover after such methods of drainage, in many their conditions are poor for days; the operations are followed by considerable pain, very annoying tympanites, often obstinate constipation, showing interference with the movements of the intestines. When the gauze packing, etc., is removed, there are always pains due to the tearing of adhesions which form between the serosa and the gauze, and occasionally after the removal of the gauze a collection of fluid escapes, showing that drainage was imperfect. Sometimes fecal fistula forms after the use of these methods of drainage, and in all cases so treated there are left large cavities to granulate, which delay healing for some time and are most liable to be followed by hernia if secondary operation is not performed, dissections freely made, and careful and separate suturing done of the different layers.

In order to obtain the full benefit of capillary drainage, the end of the wick or wicks must be placed in contact with absorbent gauze on the surface outside of the wound, and this gauze must be changed and fresh gauze replaced when it becomes saturated to the point of decreased power, as otherwise it will have little mechanical effect. Reparative lymph is prevented from encapsulating the drawing column of gauze by the surrounding gutta-percha tissue or oil silk, which also prevents disturbance of the tissues when the gauze is removed, as union does not take place between the tissues and the waterproof material. For most purposes the wick is not much larger round than a lead-pencil. The holes in it are not made large enough to allow the tissues to become adherent to the gauze within. Adhesions wall off the wick or other drainage apparatus in the peritoneal cavity in about thirty hours when the gauze or wick is shortened or entirely withdrawn, according to the indications presenting. The writer, as a rule, does not withdraw it entirely until the fifth day. The object in proceeding thus is to allow the intestine to come together as rapidly as consistent with safety and thus obliterate the cavity formed by the wick or wicks. After this, if further drainage is necessary, carry a narrow strip of gutta-percha tissue or gauze into the wound. A wick long enough to rest on the posterior abdominal wall adjusts itself nicely, is soft, causes no shock, and is easily removed. After its removal completely from the wound, drop in several minims of sterilized balsam of Peru, which facilitates healing and prevents sinus formation. A fecal fistula will not form from the use of a wick, nor will adhesions follow its use, but some may if gauze strips, packing, etc., are used for drainage. The writer prefers the wick or the wicks to the gauze strips or other methods of drainage. The gutta-percha tissue around the rolled gauze has several other advantages over plain gauze strips, etc., that is, convalescence is more rapid, less painful, fewer disagreeable local symptoms, while the wick covering prevents adhesions between the gauze and serosa.

The length of time the patient is confined to bed when drainage is used is not much increased except in those cases wherein fecal fistulæ form. The duration of confinement, after an operation in which drainage is required, is lengthened only the time it takes for the cavity to obliterate up to the skin surface and the latter to become firmly and durably cicatrized. The writer insists that patients in whom drainage is used should remain in bed for two weeks after the wound has firmly healed. This is done in order to obtain a very solid cicatrix and thus lessen the chances of recurrence of the protrusion. If a single wick has been used as a drain and the balance of the wound has been sutured accurately in separately layers, such a small opening is left after the removal of the wick that the layers fall fairly close together and unite about as well as if they had been sutured. Hernia, under most circumstances, does not develop after the use of a wick used for drainage.

Dressings, etc., after hernia operations. — Place a couple of layers of moist or dry sterilized gauze next to wound, hold it in place by long strips of adhesive plaster, then a layer of cotton, and apply firm spica bandages. Dress the wound on the seventh day or earlier if there are indications. Remove the fine skin silk sutures on the twelfth day or thereabouts, reapplying after each dressing the gauze, cotton, spica, etc., as before. Keep the patient in bed two weeks or longer if possible. If primary union is not obtained do not allow the patient out of bed till solid cicatrization is completed. If union by first intention is obtained the firm dressings, etc., are removed about one month after the operation, when the patient is allowed to go without any pad or truss.

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ACUTE UNIVERSAL ECZEMA, WITH SPECIAL REFERENCE TO ITS ETIOLOGY.

BY ALBERT E. BROWNRIGG, M.D.,
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SOME authorities[1] doubt the existence of this clinical variety of eczema. That it does occur, however, as perhaps the most troublesome of the acute dermatoses has been repeatedly observed by reliable men. Crocker,[2] of London, mentions having seen two cases; Mracek [3] refers to several, some of which proved fatal; most writers on dermatology speak of it, though all agree that it is a very rare form.

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[1] H. W. Stelwagon, Philadelphia; on page 105, Mracek's Atlas.

We would exclude from this term those cases of acute generalized inflammation of the skin following the application of some drug or other chemical irritant. Such cases, though similar, are generally not true eczemas and are better classed under "dermatitis venenata." With this exception we find a striking uniformity in the clinical descriptions of this type.

Beginning usually on the face or chest the whole surface is rapidly affected, often within a few hours. All anatomical forms of eczematous eruption are present, followed by shedding of large areas of epidermis and the production of extensive weeping and encrusted surfaces. The intense itching and burning causes continuous suffering and loss of sleep. Great sensitiveness to cold is usually complained of, severe disturbance of the alimentary tract is an invariable accompaniment, and in debilitated subjects a grave result may follow.[4] Recovery, however, is the rule, though localized chronic patches often remain.

Despite the claim of Unna that *all* eczema is due to a hypothetical microbe, and the tendency of the time to favor the microbic origin of disease, the clinical facts thus far obtained would seem to limit us to a different view. This is especially true where the onset is associated with some acute constitutional derangement or follows the habitual use of irritating antiseptics, as in "surgeon's eczema." And it is found, too, that therapeutic measures to be successful must be directed to the removal of the many external sources of skin irritation and the restoration of deranged vital functions rather than to vigorous disinfection of the skin alone. In fact, it seems probable, with our present knowledge, that any factor capable of causing continued skin irritation may in debilitated states start up an eczema.

This has led many to believe that the source of eczema invariably acts from without and that the systemic derangement is only accessory in lessening recuperative power. It is so often observed, however, that cases occur without any demonstrable external source of irritation that many explanations of the "internal causes" have been advanced. Crocker explains the "faulty innervation" theory first proposed by Hebra as the depressant action of an irritated organ upon the vasomotor nerve centres, with consequent capillary dilatation and eczematous inflammation. "Latent gout," "lithemic diathesis," "general debility" and other vague terms are but evidences of the difficulty of fixing upon any definite etiological factor in this class of eczemas. Any attempt to account for all such cases — often widely differing in clinical type — as due to the action of some one condition has proven unsatisfactory. Indeed, J. N. Hyde[5] but expresses the most generally accepted modern view when he says, "It is certain that many varieties of eczema are directly dependent upon several systemic states, such as dyspepsia, constipation, etc." Now, acute universal eczema is one of these varieties, the cause of which, it is generally acknowledged, acts from within. And the onset is so acute and the inflammation is so severe and generalized as would at least suggest the excretion of some irritant by the skin.

From the study of reported cases and the personal experience of the writer, it would seem that the acute universal form of eczema is nearly always dependent upon a deranged intestinal canal; that this derangement is due to greatly increased putrefactive changes in the small intestines, with the production of numerous toxins, evidences of which can readily be detected in the urine; that these products irritate the kidneys in their excretion and probably form the irritating factor when given off by the skin; and that the chief therapeutic indications are intestinal disinfection and the protection of the already inflamed areas.

It is not claimed that these conclusions are wholly new, and it is to be regretted that so little is as yet known of the toxic substances themselves. That they sometimes act as a causal factor in other more localized eczemas seems reasonable and to be borne out by clinical experience. We have proved the therapeutic suggestions valuable in practice, and believe that many serious cases might be relieved that have long resisted other well-recognized treatments for this most protean disease. As a typical example the following case is presented:

F. R., age twenty-six years, a deaf mute, has been insane since 1895. His mental history, that of chronic mania, will be omitted as not bearing on this subject. His physical condition has always been good, and there is no history of skin disease or special skin irritability in any of his family. During October, 1898, there had been less mental agitation, his appetite and bowels were regular, and he went to walk daily with his attendant. On November 7th he, with others on the ward, had an attack of diarrhea and he was kept in the house on this and subsequent days. The diarrhea stopped without medicine in his case and was succeeded the next day by constipation, which continued for several days before attention was drawn to it. On the morning of November 10th the patient first complained of itching. Examination showed a diffuse erythematous eruption extending over the entire surface of the trunk and extremities. There was considerable inflammatory edema of the skin, especially about the scalp and face. Vesicles formed on various parts, particularly on the front of the chest and forehead. In other regions the redness was diffuse, with less swelling, but associated with numerous fine red papules. The genitals were only slightly involved.

Itching and burning sensations were very intense and harassing and kept the patient from sleep. He often complained of cold and shivered, though the ward was warm. His appetite was poor and his mental agitation increased. The temperature was slightly elevated the first week, but never above 100°. So uncontrollable was the desire to scratch that his hands had to be restrained in stiff duck mittens fastened to a belt to keep him from tearing himself. As it was, in two or three days his short hair was a closely matted mass of crusts with serum oozing from beneath. His face was so swollen as to completely close both eyes. The conjunctivæ were not involved. The front of his chest was one extensive weeping surface, with crusts and smaller weeping areas on various other portions of his body and limbs. Even the palms and soles showed considerable scaling and crusting. By the end of the first week his general appearance reminded one of the excessive scaliness of acute exfoliative dermatitis. Here, however, scales were few in comparison with the many large thick crusts. At the start ivy poisoning was suspected but easily ruled out, as there had been absolutely no chance for exposure. Other external causes of irritation were carefully excluded. The urine was examined, with the following result:

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[2] H. Redcliffe Crocker, London: Text-Book of Diseases of Skin, p. 144. P. Blakiston, Son & Co.

[3] Prof. Franz Mracek, Vienna: Hand-Atlas of Diseases of Skin, p. 104. W. B. Saunders.

[4] Marcacci: Fatal case reported in Giornale Italiano delle Ma'attie ven. e. d. pelle, June, 1878. Referred to by Crocker.

[5] J. Nevins Hyde: Twentieth Century Practice, vol. v, p. 170.

Date, November 12, 1898.
Amount in twenty-four hours, 500 c. c.
Color, slightly high, turbid. Specific gravity, 1.030.
Odor, normal. Sediment, considerable.
Reaction, strongly acid. Solids, 33.4 grammes.
Uph. = + Urea = 2.4 per cent. Chlorine, normal. E. P. = +
Ind. = + + Uric acid ≐ + Sf. = + A. P., normal.
Albumin, slightest possible trace.
Bile pigments, absent.
Sugar, absent.
Total urea, 12 grammes.

Sediment: Occasional brown granular, fine granular and more frequent hyaline casts, mostly of small diameter. Numerous secondary calcic, oxalate and uric-acid crystals. Occasional leucocyte and squamous bladder epithelial cells.

Diagnosis: Active hyperemia of kidneys. Excessive intestinal putrefaction.

Remarks: Indican reaction very intense. Obstinate constipation.

Auto-intoxication was believed to be the cause of the eczema, but it was thought best to test the value of external methods of treatment alone, as often lately advocated. Various of the common antiseptic preparations were tried on one side, but they only aggravated the local lesions. Free opening of the bowels with Epsom salts and enemata relieved somewhat the congestion of the head, but the skin lesions still continued to increase. The stools confirmed the urine story of excessive intestinal putrefaction — were green, slimy and gelatinous, with extremely foul odor, and somewhat similar to those in the grave diarrheas of infancy. Here however the bowels were torpid. Thus the first week passed with constant aggravation of the symptoms. A simple lotion of one-half of one per cent. phenol in lime-water had allayed the itching and kept the exudations from becoming purulent. Zinc-oxide dusting powder was occasionally used.

On November 17th the intestinal trouble was made the point of attack. A strict bread and milk diet was enjoined. Salol was given after meals three grammes (45 grains) the first day, decreasing until five grains three times daily was the regular dose. The urine showed no evidence of carbolic-acid poisoning. The same vigilance against scratching was kept up and the soothing lotion continued. From the first day of this treatment the improvement was marked and continuous. The excoriations dried up, the edema lessened. By the 22d the extremities were nearly free from the lesions. By December 1st there were no weeping surfaces, and with the ordinary methods of removing the crusts he was soon well; though for some weeks after his hands were loosed he would occasionally rub his face and start up the trouble over a small area. On December 9th the urine showed:

Date, December 9, 1898.
Amount in twenty-four hours, 1,450 c. c.
Color, normal. Specific gravity, 1.012.
Odor, normal. Sediment, very slight.
Reaction, acid. Solids, 38.8 grammes.
Uph. slightly — Urea = .8 per cent. Chlorine, normal. E. P. = +
Ind. = - Uric acid, not increased. Sf., normal. A. P. = —
Albumin, absent.
Bile pigments, absent.
Sugar, absent.
Total urea, 11.6 grammes.

Sediment: Occasional bladder and prostatic epithelial cells and few leucocytes. Rarely a hyaline cast.

Diagnosis: Diminished metabolism.

Remarks: Bread and milk diet the last three weeks. Bowels quite free. Salol internally up to three days ago.

After commencing to give the salol, the intestinal disorder quickly subsided, as evidenced by the more regular motions and the urine. The patient began to gain in weight, and there has been no subsequent recurrence of the eczema.

Clinical Department.

A CASE OF CHRONIC CYANOSIS WITHOUT DISCOVERABLE CAUSE, ENDING IN CEREBRAL HEMORRHAGE.

BY RICHARD C. CABOT, M.D., BOSTON,
Physician to Out-patients, Massachusetts General Hospital.

THE patient, Mrs. R., forty-six, a widow, came to me in October, 1895, to find out if there were any trouble with her heart or blood. She had been a masseuse for the last ten years, and of late a blueness of the lips and attacks of prostration while at work had caused great alarm to her friends. The following history was obtained: She was always well as a child. Catamenia always painful, somewhat less so since an operation for dilatation of the cervix some time ago. Since the operation, always has used viburnum with relief. The flow is regular. Six years ago there was a sudden loss of consciousness, with settling of the blood on one side of the face, and her speech was thick and unintelligible. The attack lasted several days. Dr. Withington attended her.

Two years ago, after a period of very hard work, began to have periods of collapse or sudden exhaustion, mental and muscular, coming on suddenly during her work. She takes no vacation, and the attacks are growing more frequent. During such an attack her face gets dark purple and the eyes bloodshot. This symptom-complex occurs sometimes on the street and was once mistaken for drunkenness. Mild attacks are relieved by rest and food; severer ones go on to violent headaches with nausea and prostration for twenty-four hours. The skin is often blotchy, and hot flushes and other vasomotor phenomena are common. Two weeks ago she had an attack of sciatica, during which there were extensive ecchymoses on the outside of the thigh. The upper arms and the thighs have grown fat of late, but the calves and forearms thin. Her appetite is good; bowels regular. She sleeps well, and there are no complaints other than the above.

Physical examination. — Her lips and nose are remarkably cyanotic, whole face dusky and apparently somewhat puffy; tongue clean, cyanotic; no supraclavicular pads; heart apparently normal in size, first sound rather short and valvular, aortic second sound not accented, no murmur; lungs and abdomen negative; slight swelling of ankles; temperature 98.6°; pulse 90. Her urine from 60 to 70 ounces in twenty-four hours. Repeated examinations showed always essentially the following conditions: Specific gravity from 1.011 to 1.016; albumin, very slight trace; no sugar; always a few hyaline casts, sometimes with renal cells adherent; urea eight or nine grains per ounce. Blood showed red cells 10,460,000; white cells, 20,000; hemoglobin, 150 per cent. (about).

Her symptoms went on in about the same way, with occasional attacks of sick headache and exhaustion, and with now and then temporary swellings of the ankles, which, however, always passed off with rest. The condition of the heart, lungs and kidneys always remained the same. In the following summer she had a good rest and came back to work in the autumn feeling very well, but *cyanosis unchanged.* To test the possibility of myxedema, I had her take thyroid extract for considerable periods several times during the next few months, but without any effect that I could see. The temperature was never subnormal, and the mind always active. In the month of January, 1897, after having a tooth pulled, there was very free hemorrhage, lasting half a day, and controlled only by packing the cavity with gauze. This bleeding seemed to make her feel better rather than worse, but shortly after this she mentioned to me the occurrence of a peculiar attack, occurring while she was walking on the street. She said that her legs suddenly began to make peculiar movements of their own accord, contrary to her will; the movements were described as a rotation of the whole leg inward, followed by the relaxation of the muscles, the rotary motion causing the feet to almost move around each other in a circle. She had to hold on to the sidewalk fence to prevent herself from falling. Within a few minutes the attack passed off and she went about her work. A similar attack occurred a few weeks later, during a railway journey. In February, 1897, I saw her during one of her attacks of sick headache, which seemed at first like many that she had previously had, but during which there soon developed a weakness of the left arm and leg, with intense, persistent headache and vomiting. These symptoms steadily increased for two days, after which she gradually became comatose, and died, March 3, 1897.

Autopsy by Dr. E. H. Nichols showed the following conditions:

(1) Small hemorrhage from the middle meningeal artery.

(2) Passive congestion of all the organs.

No other pathological condition. These notes of the autopsy represent Dr. Nichols's verbal report. No fuller account can be obtained from him.

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AN EARLY SIGN OF TUBERCULOSIS.

BY THOS. F. HARRINGTON, M.D., LOWELL, MASS.

A recent report of the League for the Prevention of Tuberculosis says: "For every six persons in this country (France), at least one dies of consumption. Of the 850,000 deaths that occur every year in France, over 140,000 are caused by pulmonary tuberculosis or phthisis, and this number, instead of decreasing, goes on augmenting every year. All epidemics and contagious diseases combined — typhoid, varioloid, scarlatina, measles, diphtheria, cholera, etc. — do not cause half as many deaths." That the conditions in France are but the portrayal of those in other countries was evident from the published reports of the recent International Congress for Tuberculosis held at Berlin in May of this year.

It is now generally admitted that if the disease could be detected in what might be called the pretubercular stage, before the presence of the bacillus is demonstrable or before auscultation and percussion reveal the presence of the disease, a good step in advance would be taken towards the reduction of the number of cases now reported as incurable.

Inasmuch as science to-day possesses a knowledge of the means of diminishing the ravages of this disease any observation tending to recognize the disease, especially in its very early stages, should be made known, even though the observation be incomplete or the deductions faulty. The glistening eye of the consumptive has often been commented upon, as well as the pupil state in many diseases, but there is a condition of the eyes which is quite constant in patients who present themselves in the physician's office or at the clinic, and who make no mention of any symptom suggestive of a tubercular trouble, and in whom there are no evidences, either to physical or microscopic examination, of tuberculosis. I refer to a *widely dilated state of both pupils*, not a paralyzed pupil, but rather one which seems to be in a more or less constant state of dilatation, due to some irritation along the track of the nerve fibres in the cilio-spinal region, or perhaps an irritation of the sympathetic, brought about by some blood change associated with very early tubercular infection not yet fully recognized. I have repeatedly observed this condition of the pupils in persons who were apparently well, also in those exhibiting manifestations of a liver, stomach or intestinal disturbance, with no reason for suspecting tuberculosis; yet so frequently has tuberculosis followed at a later day that I have come to associate widely dilated pupils with incipient tuberculosis. Again and again I have made a note of the pupil condition in patients in typhoid fever, pneumonia, measles, post-operative surgical cases, etc., and so uniformly has tuberculosis developed in those showing the dilated pupils that I now give a guarded opinion in prognosticating such cases. I readily admit that such a sign is not infallible, and that there are cases of tuberculosis in which it does not occur as a premonitory sign, also that some persons have widely dilated pupils without tuberculosis ever developing. Yet, I offer it as the result of individual observation in the hope of interesting those who have dealings with a large number of tubercular-exposed suspects in order that the value of a sign so easily recognized may be disproved or confirmed. If the presence of dilated pupils be the cause of instituting preventive measures against tuberculosis in any number of cases, some good will necessarily result, much more in fact than can possibly follow the detection of the bacillus in the sputum or the employment of any means yet discovered for the mitigation of the ravages of this terrible slaughterer of mankind.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D., BOSTON.

(Continued from No. 22, p. 552.)

COCAINIZATION OF THE SPINAL CORD.

Bier[15] relates his experience with an entirely new application of a local anesthetic to produce general anesthesia. By the bold expedient of throwing small quantities of very dilute cocaine solution (0.005–0.01 grammes of cocaine) directly into the spinal canal he attacks the nerve roots and ganglia themselves as well as the non-medullated nerve trunks before their emergence from the spinal column and produces satisfactory anesthesia of the whole body beneath the nipple line. Insensibility is complete seven or eight minutes after the injection, which is done after the manner of Quincke's lumbar puncture, made painless by a preliminary Schleich's infiltration, and continues for about three-quarters of an hour. Strange to say, heat and cold perception and also the touch and pressure senses are preserved, but all impressions of pain are entirely obliterated. Because of this, and inasmuch as it seems incredible that the entire thickness of the large nerve trunks should be permeable by the solution in so short a time, the inference is drawn that the pain-conducting fibres are placed at the periphery of the nerve bundle.

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[15] Deutsche Zeitschr. für Chirurgie, April, 1899; The Medical News, July 1, 1899, p. 15.

Bier performed in this way such severe operations as osteoplastic resection of the ischium, knee and ankle joints, necrotomy of the tibia, resection of the femur, etc., to the perfect satisfaction of the patients. By experiment on himself and a colleague he also proved that the anesthesia was absolute and its production unaccompanied by unpleasant sensations.

Unfortunately for the vogue of the new method, however, the after-effects are quite as undesirable and much more prolonged than those following chloroform or ether, and consist in dizziness, severe headache, nausea and vomiting. As these symptoms do not put in an appearance till a number of hours after the operation it is assumed that they are due merely to the disturbance of the cerebro-spinal system and not to any direct toxic effect of the drug, and it seems probable that modification of the solution employed may eliminate these difficulties.

While in its present form suitable only for individual cases where the use of the usual anesthetics is inadmissible the idea is a very promising one and opens up a most suggestive field for investigation.

A CASE OF CEREBRO-SPINAL MENINGITIS TREATED BY LAMINECTOMY AND INCISION OF THE DURA MATER IN THE DORSAL REGION; DRAINAGE; RECOVERY; REMARKS.

Rolleston and Allingham, in an article on this subject,[16] report the history of a case upon which they operated as follows: An incision six inches long was made over the lower dorsal spines and laminectomy of the seventh and eighth dorsal vertebræ was performed. When exposed the dura mater was seen to bulge. It was incised for about an inch in the long axis of the cord. Coagulated lymph and cerebro-spinal fluid to the amount of about three ounces came out. Some of the fluid, soaked up in cotton wool, and the lymph were examined by the bacteriologist, but no diplococci were found. A drainage tube was inserted and no attempt was made to unite the incised margins of the dura mater. The skin was loosely approximated by nine sutures and the usual antiseptic dressings were applied. Next day the patient was decidedly better. His neck was less rigid; the knee-jerk was obtained on the left side but was absent on the right. The hands were less flushed than before. There was a free discharge of clear fluid from the wound necessitating its being dressed twice a day. For the following three and a half weeks the discharge from the wound continued, but at intervals of two or three days the discharge became impeded by the healing of the wound and as a result of this obstruction the patient became ill, his temperature going up to 102° or 103° F., his head ached, and the muscles of the neck (which were at other times normal) became rigid. All these symptoms disappeared when the wound was dressed and a free escape of fluid resulted. These symptoms therefore appeared to be due to increased pressure exerted by the cerebro-spinal fluid on the brain and upper part of the cord.

As far as the authors can find out, the spinal dura mater has not been freely opened before in acute cerebro-spinal meningitis. This procedure, however, is only carrying further what has already been done, namely, lumbar puncture, while in cases of chronic non-tuberculous posterior meningitis in infants Mr. Ballance has trephined the occipital bone and drained the posterior subarachnoid cistern. This method of treatment has therefore been already applied to the posterior fossa of the skull in a disease which is very closely allied indeed to epidemic cerebro-spinal meningitis, for Still comes to the conclusion that the micro-organism of simple posterior basic meningitis of infants is almost identical with the diplococcus intracellularis of epidemic cerebro-spinal meningitis.

As compared with lumbar puncture, laminectomy and incising the spinal dura mater is of course a rather more formidable proceeding, but, on the other hand, it gives exit to a much larger quantity of fluid and is a more radical method of treatment, inasmuch as it establishes a satisfactory drainage, and it may be added that in an experience of some twelve laminectomies the surgical writer of this article has never observed any untoward results.

In conclusion, the chief points of interest are: (1) the good effects of free drainage in relieving increased tension in the subdural space in cerebro-spinal meningitis, and (2) that while this is more perfectly effected by laminectomy and incising the dura mater than by the slighter operation of repeated lumbar puncture, there appears to be some danger lest this free drainage may establish an excessive secretion of cerebro-spinal fluid, analogous to that which Dr. St. Clair Thomson has shown to occur when the cerebro-spinal fluid leaks through the floor of the anterior fossa into the nose.

INTERSCAPULO-THORACIC AMPUTATION.

Le Conte, in an article on this subject,[17] discusses the various procedures that have been resorted to in interscapulo-thoracic amputation, and gives in detail a new method, limiting his remarks to pathological cases, that is, morbid growths. For the sake of convenience he divides the details of this method into seven steps.

(1) The incision is begun over the sternal end of the clavicle, carried along that bone to about its middle, and then curved downward to the anterior axillary fold. The skin and superficial fascia are dissected up, exposing well the inner two-thirds of the clavicle.

(2) The clavicle is disarticulated by severing its attachments to the sternum and the rhomboid ligament, the clavicular attachment of the sternocleidomastoid muscle is cut close to the bone, and the clavicular portion of the pectoralis major is separated with the finger from the costal portion of the muscle up to the anterior axillary fold.

(3) The clavicle is now pulled upward and out-

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[16] Lancet, April 1, 1899, p. 889.

[17] Annals of Surgery, September, 1899, p. 260.

ward, and if the subclavius muscle does not readily strip off, its attachment to the first rib is divided. The pectoralis minor will now be well exposed, and it is divided, and the coracoid portion reflected upward with the clavicle. This exposes the axilla fully, and the vessels are seen traversing it from the anterior scalenus muscle down.

(4) The sheath of the vessels is opened and the vein dissected away from the underlying artery. Two ligatures are passed around the artery and tied. The arm is then held up to empty it of blood, while two ligatures are passed around the vein, but these are not tied until the arm is blanched. This renders the use of an Esmarch bandage unnecessary. It must be noted that the cephalic vein has joined the axillary below these ligatures, or else separate ligature of that vessel is required.

(5) The vessels are now severed, together with the brachial plexus of nerves and the costal portion of the pectoralis major. This completes the division of the anterior attachments of the arm.

(6) A posterior incision is now carried from some point on the anterior incision (as near the tumor as it is deemed advisable to go) directly backward and downward to the inferior angle of the scapula, and up again to the posterior axillary fold. The skin and superficial fascia are dissected up for a short distance (half an inch to an inch).

(7) The trapezius is now severed and the transversalis colli or posterior scapular artery secured; the omohyoid muscle is cut and the suprascapular artery secured, and the muscles attached to the inner border of the scapula are rapidly divided close to the bone; then the serratus magnus and latissimus dorsi are cut, the latter at the posterior axillary fold. The arm is now held to the body by the skin of the axilla alone. If there is sufficient flap to cover the wound, the anterior and posterior incisions are joined through the axilla, but if more skin is needed, a flap may be raised from the under surface of the arm. The wound is then closed with suitable provision for drainage.

The author names the following advantages to the procedure just detailed:

(*a*) It gives the widest and fullest possible exposure of the vessels, and decreases the accidents of ligation to a minimum.

(*b*) The disarticulation of the clavicle is simpler, quicker, and easier than a resection of the bone, and the danger of wounding important vessels is less, because these structures are well protected by the sternohyoid and sternothyroid muscles.

(*c*) The elevation of the arm, after securing the artery and before the vein is tied, makes a practically bloodless amputation.

(*d*) The suprascapular and posterior scapular arteries (the only other vessels that can bleed) are easily picked up before being cut.

(*e*) In malignant growths, where the outer end of the clavicle is involved, there is less risk of a return if the entire bone with its periosteum is removed.

(*f*) It removes everything in one piece, a more surgical procedure when dealing with malignant growths.

(*To be continued.*)

ILLINOIS EPILEPTIC COLONY. — A bill has passed both Houses for the establishment of an epileptic colony in Illinois.

Reports of Societies.

AMERICAN PUBLIC HEALTH ASSOCIATION.

TWENTY-SEVENTH ANNUAL MEETING, HELD AT MINNEAPOLIS, MINN., OCTOBER 31 AND NOVEMBER 1, 2, AND 3, 1899.

(Concluded from No. 22, p. 557.)

DR. ERNEST WENDE, of Buffalo, N. Y., presented a report on the

CAUSE AND PREVENTION OF INFANT MORTALITY.

He paid particular attention to the subject of the milk industry, which he said should be under both State and municipal control, operating in harmony under similar principles with the identical object in view, both acting together, forming a system of protection from dairy to consumer. The State should exercise its functions and control until it passes to within the municipal limits and authority, and should include every feature and detail in all aspects of protective sanitation. These features include briefly:

(1) The license system, with fee, periodic systematic inspections, with revoking power and penalties for dereliction; (2) the inspection system should include inspection of herds (tuberculin tests), food, animal care; (3) demand sanitary environment and buildings, correcting existing evils, and examination and approval of plans, pending erection of new ones, which should comply with a standard of sanitary construction with special reference to specific requirements of the business, namely, separate milking and stabling quarters, proper cubic air space, non-absorbent materials; (4) scrutiny of water supply, standard feeding, health of employees, hygienic care of utensils and cans, cleanliness and protection in milking: (5) definite rules governing all procedures, particularly as to the cooling process, preparation for market, and in relation to the varying seasons; (6) the differentiation of the various characters of milk by different colored or shaped cans, and being properly labelled with date of milking, time of shipment; (7) prohibition of milk preservatives and coloring agents, of adulteration, and of the marketing of milk from diseased, sick or parturient cows, of the use of disinfectants, their necessity implying bad sanitation; the prohibition, particularly of refuse or swill food, upon any dairy premises of any food by reason of decomposition or fermentation considered unhealthful, and of the association of other domesticated or housing animals with cows; (9) a standard of quality, with periodic testing and analysis; (10) veterinary inspection with distinction and compensation within and quarantine against the introduction of tuberculous cattle from without the State; (11) it should be as rigid as against pestilence in man, and it is only by this means that the malady can be circumscribed and its bearing on human life favorably influenced; (12) with this standard of supervision by the State, the municipality should continue the supervision upon the same lines and which may be outlined as follows: (*a*) Continuation of the license system with penalties, together with stringent ordinances covering quality, adulteration, sanitary care and relation to contagious disease contamination; (*b*) milk should comply with the State standard as determined by lactometer tests, periodically instituted, as ascertained both in milk houses and on wagons: (*c*)

sanitary non-absorbent milk-rooms, of determined size, air space, ventilation and light; (*d*) with specifically constructed, indirect plumbed cooling and storage boxes, and non-communicating with sleeping rooms, privies, stables or other influencing rooms; (*e*) wagons properly lettered and numbered, with protection from summer heat; (*f*) stringent prohibition regarding intercourse with houses containing contagious diseases, particularly relating to the exchange of milk bottles and the prohibition of refilling of jars *en route;* (*g*) the constant surveillance of contagious disease in relation to milk routes by means of the "tell-tale" register"; (*h*) obligatory cleansing of milk utensils by a uniform method and of cans before returning to the dairy; (*i*) special supervision of and discouragement, if not abolishment, of grocery store and similar character milk sellers, where the business is subordinate to other interests, with a consequent lack of protective facilities; (*j*) until State and city act in unison in this, where interests are identical, the adoption of arbitrary interdiction or destruction at the city line of all milk coming from dairies whose conditions or herds may have a deleterious influence upon the milk; (*k*) systematic system of reports and with mutual warnings and notification of imperilling conditions.

Dr. A. G. Young, of Maine, contributed a paper entitled

FORMALDEHYDE AS A MILK PRESERVATIVE.

The results of his examination of all the available printed and other reports regarding the action of formaldehyde seem to justify the following conclusions: (1) That, used as a preservative, it tends at least to impair the nutritive value of milk; (2) its tendency is also to interfere with the digestive processes. In either case it is only a question of dosage, and the limit of safety is difficult to determine; (3) that though the inhalation of formaldehyde gas is much less dangerous than the breathing of the other gaseous agents much used as disinfectants, the results of tests upon animals and of one case of accidental poisoning of a human being indicate that formaldehyde taken into the digestive system may produce dangerous and even fatal results; (4) it would be unwise and unsafe to encourage or to suffer the use of formaldehyde in the public milk supply, even under any possible restrictive regulations; (5) in every State, as there is now in many, there should be a law prohibiting with effective penalties the use in milk of any chemical preservative whatsoever.

SECOND DAY.— AFTERNOON SESSION.

Dr. John L. Leal, of Paterson, N. J., described an epidemic of typhoid fever in that city which was traceable to an infected public water supply.

Dr. H. C. H. Herold, of Newark, N. J., spoke of the great decline in the mortality rate of typhoid fever since the improved water supply of that city.

Dr. Gardner T. Swarts, of Providence, R. I., made a favorable report of a four months' test of a mechanical filter plant at East Providence.

Dr. H. W. Clark, of Boston, dealt with the bacterial purification of sewage.

Dr. Chas. V. Chapin, of Providence, presented the report of a committee to examine into the existing sanitary municipal organizations of the country which belong to the Association, with a view to report upon those that are most successful in practical results.

The session closed with a paper by Mr. W. H. Allen, of Philadelphia, on

RURAL SANITATION IN ENGLAND.

THIRD DAY. — MORNING SESSION.

A resolution was offered and adopted, that steps be taken to secure advanced teaching and the giving of diplomas in hygiene, and that recognition of such diplomas be made by sanitary authorities.

Another resolution was adopted, recommending to all governments to set apart such portions of their forests as may be practicable for national parks.

The Association has established a section, known as the Bacteriological and Chemical Section of the American Public Health Association. This section is to meet on the day preceding the meeting of the general Association.

VACCINATION.

Dr. Wm. Bailey, of Louisville, narrated some points pertaining to the history of vaccination.

Dr. W. C. Woodward, of Washington, D.C., spoke of the accidents of vaccination, some of which arose from impure virus, lack of aseptic precautions, etc.

In the discussion, Dr. E. Licéaga said that revaccination was really unnecessary in Mexico, while in Europe it was imperative because animal virus was used. In Mexico humanized virus is used. His remarks were based on 200,000 vaccinations in the Republic of Mexico.

Dr. Cabana, of Massachusetts, referred to an epidemic of small-pox which occurred in Montreal in 1885, in which there were 10,000 cases. He thinks sterilized virus from the animal is preferable to the humanized virus. He referred to syphilis and other diseases being transmitted by using humanized virus.

Dr. Wright, of Minneapolis, related his experience during six years' residence on the western coast of the Mediterranean Sea. Humanized virus was used in vaccinating these cases and he knew of no case of syphilis or other disease communicated from one person to another by this method of vaccination.

Dr. Samuel W. Abbott referred to the rarity of cow-pox and believed that infection in most instances is transmitted by individuals rather than by the cows. Very little is known about the remote origin of the infectious diseases.

Dr. Wm. H. Welch, of Baltimore, referred to the septic infections that occur at the time of or following vaccination.

Dr. Peter H. Bryce, of Toronto, asked in regard to hypodermic injections of vaccinia, to which Dr. W. C. Woodward replied that Dr. Kinyoun had tried it in numerous cases with satisfactory results.

Dr. Chas. V. Chapin called attention to a report of the New York Board of Health for 1896, in which reference is made to experiments with the subcutaneous inoculation of vaccinia, saying it was not so reliable as inoculation by scarification.

Dr. Samuel H. Durgin reported a case in which subcutaneous injection of vaccinia was resorted to, the constitutional disturbance being the same as that observed by the usual method of vaccination. This case was observed some twenty or more years ago.

Dr. Frederick Montizambert, of Ottawa, Can., favored bovine instead of humanized virus, principally for the reason that if syphilis or any other disease should follow vaccination by humanized virus, the antivaccinationists would have an argument for the condemnation of vaccination generally.

DR. CHAS. F. ROBERTS, of New York City, also spoke in favor of bovine virus for vaccinating purposes.

DR. BENJAMIN LEE narrated an instance in which several members of one family were infected with syphilis by impure virus, the vaccination having been performed in this case by a drummer, not a doctor.

DR. JAS. F. KENNEDY, of Des Moines, Ia., said the president of the Antivaccination League lived in his State, and it is claimed by the antivaccinationists that not only syphilis but tuberculosis is transmitted by bovine inoculation, but he does not think so.

DR. LOUIS LABERGE, of Montreal, said that with humanized lymph, if proper aseptic precautions are observed, there is practically no danger of transmitting disease.

DR. LISTON H. MONTGOMERY, of Chicago, asked in regard to tetanus following vaccination.

DR. CABANA reported two cases of tetanus following vaccination.

DR. WOODWARD reported another case.

DR. H. M. BRACKEN said physicians should take cognizance of the length of time following infection. In two cases of tetanus which he had observed the disease developed on an average of three weeks after vaccination. These persons were very dirty, and he believes the vaccination had nothing to do with the development of that disease.

DR. H. W. HILL, of Boston, read a paper on

THE OFFICIAL DEFINITION OF DIPHTHERIA.

He said that the first factor in the production of the disease is the patient, and second the bacillus of diphtheria. The disease of diphtheria is existent only when the active diphtheria bacillus producing recognizable lesions is present. The presence of diphtheria bacilli without the production by them of recognizable lesions does not constitute this disease; nevertheless such patients may be a source of possible infection to others. The necessity of isolating persons suffering from the disease, in order to prevent its spread, has long been recognized.

In order to place the matter on a definite basis it is suggested that this definition be recognized by so wording all regulations relating to the supervision of diphtheria that, in so far as may be advisable for the protection of the public health, the demonstration of the presence of the diphtheria bacillus should be sufficient to empower health authorities to proceed with measures directed to prevent its dissemination. He suggested that such phrases occurring in regulations as "persons suffering from diphtheria," or "cases reported as diphtheria," should be modified to read "persons suffering from diphtheria or infected with diphtheria bacilli," and "cases reported as diphtheria or as infected with diphtheria bacilli." It seems to him a simple change of wording will give the necessary power to health authorities, while absolving them from any charge of wrenching terms to suit misunderstood conditions, such as are sometimes, although unjustly, brought forward.

DR. A. WALTER SUITER, of Herkimer, New York, offered the following resolution, which was adopted:

That *Whereas*, the State of New York has taken a decisive step in advance by the grant of an annual appropriation for the establishment and maintenance of a laboratory with all modern appliances for the persistent prosecution of studies in the etiology of cancer; and whereas results have already been obtained which lead to the hope that the discovery of the etiological factor in the production of this much dreaded disease may be attained; therefore, be it

Resolved, That the Association approve of similar efforts to that end, that State and national patronage in special and general scientific research may be universally established.

DR. H. M. BRACKEN, of Minneapolis, presented the

REPORT OF THE COMMITTEE ON A NATIONAL HOME FOR LEPERS IN THE UNITED STATES.

He stated that inasmuch as the Congress of the United States had passed a law for the appointment of a commission of medical officers of the Marine-Hospital Service to investigate the origin and prevalence of leprosy in the United States, and to report upon what legislation is necessary for the prevention of the spread of the disease, he would recommend that the committee of the Association be continued to report at the next meeting. He stated that the Ramsey County Medical Society and the Minnesota Academy of Medicine had already taken action urging upon the United States Government the necessity of establishing homes or colonies where lepers can be segregated, thus protecting the general public and at the same time furnishing these sufferers with a comfortable home and suitable medical care.

DR. U. O. B. WINGATE, of Milwaukee, Wis., presented the

REPORT OF THE COMMITTEE TO DEFINE WHAT CONSTITUTES AN EPIDEMIC,

and the following definition was recommended to the Association for adoption: "An epidemic is an outbreak of a communicable or infectious disease, affecting a dozen or more individuals in quick succession before the recovery of the first case, whether arising from a single focus or from several foci in the neighborhood." This definition was not satisfactory to the Association and the matter was therefore referred to another committee to be appointed for the next year.

FOURTH DAY — MORNING SESSION.

DR. BENJAMIN LEE, of Philadelphia, presented a paper in which he dwelt upon the

TREATMENT OF GARBAGE AND EXCRETA IN MILITARY CAMPS.

He spoke of flies as factors in the causation of disease. He also referred to the portable furnaces which are now being used by the United States Government at Havana for the destruction of garbage with gratifying results. Two additional papers were presented on waste disposal and its advances.

DR. C. H. JONES, Health Commissioner of Baltimore, related his experience in the

TREATMENT OF DIPHTHERIA WITH ANTITOXIN AND FORMALDEHYDE,

which showed a great decrease in mortality by the use of these agents. He said that the Health Department of that city has not lost a case of diphtheria which was treated with antitoxin within the first two days of the disease.

Dr. C. L. Wilbur, of Lansing, Mich., read the

REPORT OF THE COMMITTEE ON DEMOGRAPHY AND STATISTICS IN THEIR SANITARY RELATIONS

He stated that with the completion of the work relative to the nomenclature of causes of death, a larger part of the time of the Association should be devoted to other subjects of vital statistics, which have been neglected to some extent in recent meetings. Technical papers, dealing with the best methods of collection, tabulation and presentation of vital statistics, should be presented, but papers of a different class, relating to the employment of vital statistics in practical sanitary administration, should also receive consideration.

Some systematic effort should be made to extend the number of registration States, and to ensure that all States and cities adopting methods of registration shall comply with certain necessary standards of efficiency, which it might well be the province of the authorities connected with the Association to formulate for convenient reference.

Lastly, no efforts should be spared to raise the general standards of vital statistics and to increase their value in the public mind as an absolutely essential part of modern sanitary science, and the basis of public health work. Vital statistics should be systematically taught in our medical schools, with special reference to their practical use by health officers and students of the prevalence of disease. The practical study of mortality statistics is a necessary part of the work of the medical officer of health, and its reputation and character should not be diminished by withdrawing it in any case from medical direction.

The following officers were elected for the ensuing year: President, Dr. Peter H. Bryce, Toronto, Ont.; First Vice-President, Dr. H. M. Bracken, Minneapolis, Minn.; Second Vice-President, Dr. Juan Brena, Zacatecas, Mexico; Secretary, Dr. Chas. O. Probst, Columbus, Ohio; Treasurer, Dr. Henry D. Holton, Brattleboro, Vt.

Indianapolis, Ind., was selected as the place for the next meeting.

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Recent Literature.

The Hygiene of Transmissible Diseases: their Causation, Modes of Dissemination and Methods of Prevention. By A. C. Abbott, M.D., Professor of Hygiene and Bacteriology, and Director of the Laboratory of Hygiene, University of Pennsylvania. Illustrated. Philadelphia: W. B. Saunders. 1899.

The most important work of the health officer is the management and control of infectious diseases. By the aid of a thorough knowledge of the natural history of this class of diseases, any sanitary authority will be better equipped for the work of preventing their spread, whenever they occur in any community. The systematic and thorough method employed by the author in his treatment of the subject of transmissible diseases makes this volume a very valuable work, not only for the student of hygiene, but for every one who has to deal with this most important department of sanitary work.

The first chapter or section treats of the different circumstances which act as predisposing conditions in the causation of disease — age, sex, race, occupation, density of population, heredity and season of the year. Exciting causes are classed as chemical, physical or mechanical, animal parasites and bacteria. The author gives an unusually clear definition of the distinction between the terms *contagious* and *infectious.*

The second chapter treats of the causation, modes of transmission, and prevention of thirty different specific diseases of the infectious class, each disease being considered separately in a systematic manner. Under the head of typhoid fever we note his clearly stated opinion that "there is no evidence that the disease is disseminated through the air"; and under diphtheria, "neither is there any evidence, though opinion in abundance, that the disease is spread through the air of drains and sewers." Once having occurred in a house, however, he admits the possibility of its spread by "defective plumbing, when there is a direct passage for the infective materials thrown into closets and sinks."

The final chapter treats of the important subject of disease prevention, including isolation, disinfection, quarantine and the various methods of producing immunity.

The Phonendoscope and its Practical Application. A Translation of Lectures Delivered by Aurelio Bianchi, M.D. By A. George Baker, A.M., M.D. Philadelphia: George P. Pilling & Son. 1898.

Beside Dr. Bianchi's lectures the book contains translations of special articles on the use of the phonendoscope by Drs. Felix Regnault and M. Anastasiades. It is published by the sole agents for the sale and manufacture of the instrument in the United States, and appears to be a perfectly proper effort to popularize its use and increase its sale. The possibilities of the phonendoscope as set forth by its inventor are certainly marvellous, and almost incredible to one whose patient efforts to attain similar results have always been disappointing. By its use, among other things, "you can readily distinguish the beginning of the lung, its divisions into lobes and the overlapping of the same," and can "determine the exact size and boundaries of the heart, its division into ventricles and auricles, and the position of the large vessels." The work of the translator has been wretchedly done.

Asthma; Recent Developments in its Treatment. By Ernest Kingscote, M.B., C.M., etc. With colored frontispiece and illustrations. London: Henry J. Glaisher. 1899.

The point of view of the author can best be given in his own words, that "although he does not state that every case of asthma has a dilated heart, he does say that every case he has examined has had one; and further that he would have been unable to diagnose the state of the heart owing to the concomitant emphysema without the aid of his pleximeter," and that "personally he has seen a great number of cases (of hay fever), every one of whom suffered from a cardiac dilatation, on the reduction of which the tendency to hay fever invariably disappeared." The pleximeter, a description of which is given, would seem to be a rather remarkable instrument, since it shows that it is "not at all an uncommon condition" for a heart to be dilated "to the size of a small foot-ball," weighing "about as much as half a bucket of water." Perhaps the author's language is simply picturesque. Although the impression is given that he is more inclined to fit the facts to a theory than a theory to the facts the book deserves attention as the work of a man who has given much thought to the subject. It brings out many interesting points in a disease whose etiology is often obscure and whose treatment is often unsatisfactory. A very considerable portion of the volume is devoted to the subject of cardiac dilatation, in the treatment of which the Schott method is warmly recommended.

Railway Surgery. A Handbook on the Management of Injuries. By Clinton B. Herrick, M.D., Troy, N. Y., Lecturer in Clinical Surgery, Albany Medical College; Attending Surgeon to the Troy Hospital and the House of the Good Shepherd; Consulting Surgeon to the Leonard Hospital, etc. New York: William Wood & Co. 1899.

We have often wondered why some one did not write a work on railway surgery, but it is a book that we expected would be written by some surgeon in charge of one of the great systems of railways in the West. The author, however, has met a want and has done it in a very satisfactory manner. There can be but little doubt that eventually all railways will find it to their advantage to employ a permanent staff of surgeons, not alone to treat the emergencies and accidents that arise in transportation, but to advise and direct them as to the responsible care of the health of their patients. The chapter on Car Sanitation and Disinfection is one that should be read by every "master of transportation." The printing of the book is fair and some of the illustrations are excellent. We can commend the book to any one who has to do with railway surgery.

A Treatise on Human Physiology, for the Use of Students and Practitioners of Medicine. By Henry C. Chapman, M.D., Professor of Institutes of Medicine and Medical Jurisprudence in the Jefferson Medical College of Philadelphia. New (second) edition, thoroughly revised. Pp. 921. Philadelphia and New York: Lea Brothers & Co. 1899.

The writer offers this second edition of his text-book to the public unchanged in any essential respect. The chapters on physiological chemistry and the functions of the nervous system have, however, been largely rewritten in accordance with the recent rapid advances in our knowledge of these departments of knowledge. There has of late been a certain excess of text-books on physiology, but they receive a possible justification from the fact that they are often used by the authors, who are also teachers, for purposes of instruction in their own classes.

In this edition the author has devoted over two hundred pages to a consideration of the nervous system, including a certain amount of anatomy, as the necessities of explanation demand. It is needless to say that the newer theories and facts relating to the structure of the nervous system are considerable, and perhaps as needless to add that they are treated in rather too cursory a manner to be of great value. We are a little sorry to see a reproduction of Ferrier's well-known diagram of cortical areas on page 673, which certainly gives to the student a wrong conception of the significance of cerebral localization. The diagrams on the following page are much to be preferred.

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A BACTERIOLOGICAL AND CHEMICAL SECTION OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

On the day before the annual meeting of the American Public Health Association, held this year at Minneapolis from October 31st to November 3d, a meeting of the so-called Laboratory Committee of the Association was held in the Laboratory of Medical Sciences of the University of Minnesota.

This movement to group together laboratory workers, although in abeyance for some years, was practically begun five years ago at the Montreal meeting of the Society, when the Committee upon the Pollution of Water Supplies of the main Association obtained the authority of the society to hold a convention of bacteriologists, to discuss the various bacterial methods in use in different laboratories, in order to compare notes and to reach an agreement, if possible, upon certain essential elementary matters pertaining to bacterial work. This meeting was held at the Academy of Medicine in New York City during June, 1895, and brought together for the first time very many of the prominent bacteriologists of the country.

The meeting was presided over by Dr. W. H. Welch, of Johns Hopkins University, and the many interesting papers read at the meeting and the discussions of them are presented in the *Journal of the American Public Health Association* for 1895. The meeting at that time was chiefly valuable as showing the great divergence in methods used by different bacteriologists, and their apparent inability to agree upon standard media and standard or uniform methods of work. This result was to be expected, however, owing to the recent and rapid development of the science of bacteriology. From the time of this meeting practically nothing further was done in the way of following up this line of work or organizing laboratory workers of the class spoken of into any sort of an association, until about a year ago, when, largely through the efforts of Dr. Wyatt Johnston, of Montreal, new life was imparted to the movement, and the so-called Laboratory Committee of the American Public Health Association — comprising both chemists and bacteriologists, was formed with approximately sixty members. This was really an independent movement, with only a semi-official sanction by the Association, and many of the members joining this committee were not, at the time of joining, members of the main Association. In fact, many of the men who were this year and will hereafter be brought together in this way, while interested in a general way in the work of the Public Health Association, have not in the past felt drawn particularly towards it because of the very general nature of the papers read before the Association. For this reason alone it would seem that the formation of this Laboratory Committee cannot fail to be of advantage to the Association, and to many new and earnest members.

Through the efforts of Dr. Johnston and his associates, a well-attended and successful meeting of the Committee was held in the Laboratory of Medical Sciences of the University of Minnesota, as above mentioned, upon October 30th. The meeting was called to order by Dr. Welch, who again acted as chairman, as at the meeting in 1895. Dr. Welch opened the meeting with an address in which he called attention to the great benefit that would result from bringing together, in the way proposed and there exemplified, chemists and bacteriologists interested in public health work, as a section of the regular Association, and he further spoke of the lines of work that the section would find most valuable to consider. He spoke in the first place of tuberculosis, which is one of the most, if not the most, important problems of physicians when one considers that it is the most fatal of all diseases of the human race. Amongst other things, he suggested investigations with reference to the amount of danger resulting from infection from cattle, stating that the general ideas upon that subject showed great discrepancies, some minimizing the danger, others doubtless exaggerating it. He spoke also of typhoid fever and the lamentable experiences during the recent war and the lessons to be derived from the mistakes in diagnoses of cases and the absence of the application of hygienic principles, etc. The problem of disinfection he also touched upon, and the dissatisfaction at present with the procedures now in vogue. The subject of sewage disposal was also mentioned in his address, and the great promise of the natural methods now being studied in this country and in Europe. As to broader biological questions, he stated that there is the important and perplexing subject of differentiation of bacteriological species. With reference to the hog cholera group, for instance, after finding the properties of an organism and apparently identifying it, he asked if the bacteriologist could say with certainty that it is the hog cholera bacillus. Can anything more be said than that it belongs to that group, and is not the same thing true of the colon group and of the typhoid group?

Following Dr. Welch's address many papers were read, most of which were upon bacteriological subjects, and interesting discussions followed the presentation of each group of papers. The papers were all upon matters of considerable interest to the bacteriologist at the present time and the titles of them were as follows: "Studies upon the Distribution of Certain Varieties of Diphtheria Bacillus"; "A Streptothrix Form Isolated from Water, Resembling Diphtheria Bacillus"; "Branching Diphtheria Bacilli"; "The Significance of Gas-Producing Bacteria of Non-Colon Type in Sanitary Analysis"; "Bacterial Water Analysis"; "Some Points on the Differentiation and Classification of Water Bacteria"; "The Question of Standard Methods for the Differentiation of the Numbers of Bacteria in Water"; "The Observations of Odor as an Essential Part of the Water Analysis," etc. Two papers upon chemical subjects were also presented, being "The Iodometric Determination of Small Quantities of Carbon Monoxide," and "The Action of Water upon Lead."

The papers relating to the diphtheria bacillus were of much interest, especially that by Dr. Wessbrook upon "The Distribution of Certain Varieties of the Diphtheria Bacillus." In this paper Dr. Wessbrook presented the results of an extended study of organisms taken from the mouth or nose of 263 children in health, these children all attending one school. As a result, 25 per cent. showed no diphtheria-like organism in the nose or throat, while the remainder, or 75 per cent., showed the nose and throat infected. The frequency of occurrence of the two groups of diphtheria bacilli observed in the children and the inability, as stated by him, to free their throats of bacteria which produce little effect upon their health, led to a careful study of the morphology of the bacilli, as described in his paper. The diagnosis of diphtheria has become such a common thing, as he stated, and is carried out by municipal and other laboratories so frequently, that all workers have probably about the same ideas in regard to what constitutes the diphtheria bacillus. The danger of making the mistake of overlooking a diphtheria bacillus when it is present is extremely small; but, in the study of the possible means by which diphtheria may be spread, the fact that it remains dormant for a long time and then appears to break out is of great importance, and it is perhaps by the study of people who are not at the time infected, though they may be associated with cases, and also the study of apparently healthy children where no epidemic exists at the time, that is to help us in this particular, where many cultures are handled, of determining amongst the various forms what are really pathogenic diphtheria bacilli.

It will be noticed that many of the papers read dealt with the determination of bacteria in water, both qualitative and quantitative, and the importance of this branch of sanitary work, in connection with the examination of public water supplies, etc., is well illustrated by the fact that 75 per cent. of the papers presented at this meeting were upon studies along this line of bacteriological and chemical work. The question of the proper media for the cultivation of water bacteria and the proper degree of reaction of the media, and the desirability of uniform methods of procedure in different laboratories, was again discussed in a most interesting manner. A study of the classification of water bacteria and its importance was presented in an interesting way, and also the desirability of formulating, if possible, standard methods of procedure for isolating the colon bacillus and its allied forms, as this is one of the most important bacterial determinations that the working sanitary bacteriologist has to deal with when analyzing a suspicious water at the present time. The colon bacillus can without doubt be isolated if present in a water supply, and data upon its presence in various supplies, its numbers in a given volume of water from a supply, the relation that it bears to the total number of bacteria present, etc., will be of increasing value to those dealing with water-supply problems. Especially will the significance of its appearance be of value to those under whose direction a polluted water supply is filtered before passing to the consumers.

The subjects touched upon at the meeting in Minneapolis were only a few of the many important questions now coming to the front in public health laboratory work, and of course only one or two of the papers can be mentioned here. It can be said, however, that the subject of standard methods of analyzing water, both chemical and bacteriological, was considered of enough importance to cause the appointment of a committee to study and report upon the subject to the section, and this is only one of many committees upon like subjects that will be appointed if the laboratory movement is a success and the meetings continue.

It was found to be impossible to consider this meeting as that of a regular section of the main society, as the proposition to form a section, while meeting a favorable reception from the Association, cannot be voted upon until the ensuing annual meeting. An organization was formed, however, and the name "The Bacteriological and Chemical Section of the American Public Health Association" was adopted. A chairman, secretary and executive council were elected, the Chairman for the ensuing year being Dr. Theobald Smith, of Harvard University, and Pathologist of the Massachusetts State Board of Health; the Secretary, Dr. Wyatt Johnston, Bacteriologist of the Board of Health of the Province of Quebec; Recording Secretary, Dr. A. Gehrman, Bacteriologist of the Chicago Board of Health; and the Council of five members, consisting of Dr. W. H. Welch, of Johns Hopkins University; Dr. H. L. Russell, Bacteriologist of the State Board of Health of Wisconsin; Mr. H. W. Clark, Chemist of Massachusetts State Board of Health; Dr. J. Ramirez, of Mexico, and Dr. Gardner P. Swarts, Secretary of Rhode Island State Board of Health. This is a very strong body of men, and should mean good work in this department of research.

LEGISLATION FOR THE ARMY MEDICAL SERVICE NEEDED.

ON another page will be found a bill to be submitted to the present Congress by Surgeon-General Sternberg, looking to an increase in the personnel of the Medical Department of the Army, and we desire to call the attention of the medical profession to the urgent necessity for legislation in behalf of that department in the military service. This bill calls for the addition of 124 commissioned officers, an estimate which appears to be extremely moderate in view of the fact that there are now only 192 commissioned medical officers in the army, while the actual needs of the service are such, as regards medical attendance, that there, are, in addition, more than 400 civilian physicians serving with the colors, under contract.

Surgeon-General Sternberg has in the past repeatedly called attention to the fact that the number of medical officers, as authorized under existing law, was insufficient for an army of 25,000 men under the peace conditions existing prior to the war with Spain; and during the past two years a large number of posts have been established upon the seaboard of the United States, in Puerto Rico, in Alaska and in the Hawaiian Islands, which will presumably be permanently garrisoned hereafter. With the recent improvement in our coast defences, no less than 18 new posts, where troops are now stationed, have been established in the Department of the East alone; and in the Department of the Columbia, including Alaska, there are 10. The number of independent garrisons in Puerto Rico at present is 11; the number of independent commands in Cuba is 30. At the present time there are stationed in the Philippine Islands, or under orders therefor, no less than 52 medical officers of the regular army, 23 surgeons of volunteers, 75 regimental surgeons and assistant surgeons of volunteer regiments and 157 acting assistant surgeons — a total of 307. How many medical officers may be required for duty with troops constituting the permanent garrisons of these islands it is impossible to say at the present time; but there can be no doubt that even if the modest number of commissioned medical officers asked for in this bill is authorized by Congress it will still be necessary for many years to come to employ a considerable number of contract surgeons to meet the requirements of the service.

The second recommendation in the surgeon-general's bill directly affects the efficiency of the medical service. It has formerly been customary to commission candidates upon the attainment of the required average before the examining board, and without that insight into their character and aptitude for the service which can only be gained through extended observation and personal contact. With a probationary period of six months it is believed that men of undesirable personality, or such as appear not likely to maintain the professional reputation of the medical corps, can be more thoroughly excluded from the service.

The last section of the bill recommends that such medical men as have satisfactorily served their country, either in the volunteer service or as contract surgeons, shall, if possessed of the necessary qualifications, be made eligible for immediate appointment — under existing laws medical officers of the volunteer service being entitled to be graded at the head of their entering class and to have their volunteer service count for their promotion to the rank of captain. It is certainly just and proper that such men should have the way opened to them to obtain commissions, and it is evident, as experience with the contract surgeon system, as exhibited in the letter from a Washington correspondent, proves, that those medical men who would be the most desirable acquisition to the service cannot afford to remain indefinitely under a contract which may terminate at any moment and which affords no prospect of advancement.

The personnel of the medical corps is not only small in numbers but lacking in that political "push" through which legislative reforms are brought about. It stands alone in the military service without share in the rewards and preferment so freely bestowed upon other departments, either neglected or the target for ill-directed censure, satisfied to deserve well of the profession it represents. It asks no favors and wishes but justice. That its needs are positive and that present conditions are productive of inefficiency cannot be gainsaid, and it is equally true that the institution of measures for its relief lies in large measure with the medical profession in civil life. It becomes, therefore, the duty of the latter to support the surgeon-general in his efforts to improve present conditions, not only by tacit approval but by active measures calculated to show Congressional legislators that the medical profession as a whole fully appreciates the requirements of the Medical Department of the Army, and earnestly desires that they be satisfied. The medical men throughout the country can force the adoption of such reasonable measures as are proposed, and any apparent indifference on their part will furnish a most potent argument for the defeat of the bill to those who place partisan politics above the public welfare. We strongly urge that the profession throughout the country take the interests of the army medical service to heart and, through the formal action of medical societies as well as by brief personal letters to their Congressional representatives at Washington, exhibit an emphatic desire for the passage of the proposed bill.

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AMERICANS AND ENGLISHMEN AS WELL AS ITALY, FOR THE ITALIANS.

It appears that the Italians are making a vigorous attempt under the leadership of a Signor Santini to prevent the practice of English physicians among their countrymen sojourning in Italy. It is the same lament that has from time to time gone up in Paris relative to the invasion of foreign physicians drawn to it by the constantly increasing number of travellers and permanent foreign residents. For an American or an Englishman to desire a physician who speaks his language and understands his ways, in whatever part of the world he may happen to be, is both natural and commendable, and no doubt he will persist in his desire, however unwelcome his choice may be to his temporary hosts.

The question has apparently reached something of a crisis in Italy, with the renewed introduction of a bill known as the Santini Bill into the Legislature, providing for an obligatory Italian qualification on the English-speaking practitioner, which practically means that English-speaking people, while in Italy, must be content with the services of Italian physicians. Previous attempts to make this bill a law have failed, a fate which we trust may also befall this last effort. The influx of English and American tourists into Italy is enormous and, no doubt, increasing each year, which means a corresponding expenditure of money, a sum estimated seven years ago at £20,000,000 sterling, almost one-third of the Italian revenue. It is perhaps not to to be wondered at that Italian doctors, being human, should wish to divert a part of this money to their personal uses. To take legal measures to that end is, however, quite unworthy of the profession to which they belong, and altogether inconsistent with the manifest rights of the individual to choose whom he wishes as his medical adviser; it is, moreover, likely to prove unacceptable to the Italian hotel-keeper and other native purveyors, as well as injurious to the Government railways, etc. It is not probable that the Italian Legislature will deliberately divert the stream of American and English travel; without it, Italy would be a much less desirable place for the Italians.

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MEDICAL NOTES.

Inoculation of Troops Against Typhoid Fever. — About 70 per cent. of the British troops sent to the war in South Africa have been inoculated against typhoid fever according to the method of Professor Wright, of Netley.

Cui Bono Doctores? — With the above query, a somewhat malicious layman sends a newspaper account of a female evangelist's being raised from the dead by a reverend gentleman who had need of her. He explains that he performed the act with all proper deference to an overruling Providence; and she explains that she was dead because she knew she was — not because she had previously had a doctor.

A Memorial to Dr. William H. Welch. — Following the German custom it is proposed to publish a memorial volume in commemoration of Dr. Wm. H. Welch's twenty-fifth year as a teacher and investigator. The circular of announcement states that during the past twenty-five years some seventy-five persons have undertaken investigation under Dr. Welch's leadership and nearly half of these will contribute to the volume. The book will contain contributions to pathology and correlated sciences; the edition will be limited by the number of subscribers. All communications and subscriptions should be addressed to Dr. F. P. Mall (Secretary of the Committee of Publication), Johns Hopkins University, Baltimore, Md.

Appointment of Dr. Joseph Sailer. — The appointment of Dr. Joseph Sailer as assistant pathologist to the University of Pennsylvania Hospital has been announced.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the eight days ending at noon, December 6, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 82, scarlatina 45, measles 38, typhoid fever 15.

Five New Cases of Small-Pox in Chelsea, Mass. — Five new cases of small-pox have recently been discovered in Chelsea. The Board of Health has begun an investigation to trace the origin of the disease.

Two Centenarians. — Timothy McDonald, of Greenfield, Mass., is reported to have died recently at the age of one hundred and three years. Mrs. Mary Peters, of Henniker, N. H., who has died within a week, is said to have attained the age of one hundred years and eleven months.

NEW YORK.

Infectious Diseases from Immigrants. — On returning from his recent trip to Europe, Health Officer Doty stated that his observations there convinced him that the reports of danger of infection from Russian immigrants, which constitute a large proportion of those arriving at the port of New York, had been greatly exaggerated. He found that when emigrants from Russia start for this country they are first examined in their own towns. They are then passed across the frontier to one of six stations, and at these places another inspection occurs, and frequently the people are thoroughly fumigated as a precaution. From these stations they are sent to what is called a "control station" near Berlin, in Germany. There they are inspected once more, and if they again pass muster they are allowed to proceed to the port of embarkation. At the ports they are compelled to submit to still another inspection, this time under the auspices of the steamship companies. This last inspection, said Dr. Doty, is the most severe of all, as the companies are anxious not only to guard against contagious and infectious diseases, but also against the other diseases which debar an immigrant from being allowed to land here, as they know that they will have to carry back immigrants thus affected at their own expense. Usually the intended immigrant is kept by the steamship company in a lodging-house from three to five days to see if any disease develops.

ARMY AND NAVY NOTES.

Dengue in Cuba. — From Cuba also, as well as Luzon, the report comes that dengue has existed to a considerable degree, particularly among the United States troops.

Hospitals at Havana. — Owing to the lessened amount of sickness among troops at Havana the large Military Hospital No. 1, formerly the Alfonso XIII hospital, has been ordered turned over to the city authorities as a civil hospital. This institution, of a capacity of 2.000 beds, was largely renovated on the occupation of Cuba with the expectation that disease would prevail to a greater degree among our troops than has fortunately been the case. The smaller Las Animas Hospital has also been closed and hereafter the sick will be sent to the large hospital at Camp Columbia, at Quemados, several miles from Havana.

Investigation of Tropical Diseases at Manila. — Dr. E. R. Hodge, pathologist at the United States Army Medical Museum, Washington, D. C., has recently left for Manila for the purpose of securing that institution such pathological specimens as may result from active hostilities and the occupation of a tropical country; he is also empowered to purchase any articles relating to the practice of medicine or surgery which might be of value to the Museum. Dr. Hodge will have his headquarters at the First Reserve Hospital in Manila; making such trips into the surrounding country for material as may appear to be of advantage. He goes equipped with a complete outfit for the preservation of specimens and will remain in the Philippines for at least a year. This innovation in having a trained representative of the Museum on the spot will undoubtedly result in the accumulation of a large amount of valuable material and data which would otherwise have been lost to science. An expedition to the Philippines for the investigation of tropical diseases and the acquirement of museum specimens was planned some time since by Surgeon-General Sternberg, but owing to recent reports from Manila, which indicate that the insurrection is liable to collapse at any time, it was deemed advisable to send Dr. Hodge in advance. It is understood that the remainder of the party — which includes several expert bacteriologists — will leave Washington about the beginning of the year.

Arrival of Hospital Ship "Missouri." — The hospital ship *Missouri* arrived safely at Manila, *via* the Suez canal, on November 29th.

The Wounded at Puerto Cabello. — The Surgeon-General of the Navy is in receipt of a report from Dr. W. C. Braisted, Surgeon U. S. Navy, with regard to the assistance given the wounded at Puerto Cabello, during the recent revolution in Venezuela. Of the character of the wounds Dr. Braisted writes: "The majority were compound fractures of long bones. The rifles used were mostly Mausers, but the ammunition was generally not the regulation Mauser bullet but a softer leaden bullet that flattened out on impact and produced a most remarkable amount of disintegration of soft and hard tissues. The wound of entrance corresponded to the size of the missile, or was a little larger, while the wound of exit was very large and ragged."

Gen. Leonard Wood, M.D. — Gen. Leonard Wood has recently left Santiago, under orders from the War Department, to visit Washington. It is generally believed that this action is taken in view of an intention on the part of the President to appoint General Wood as the civil governor of Cuba in the new administration of the island. With reference to the report that General Wood was destined to succeed Surgeon-General Sternberg, on the statutory retirement of the latter, as head of the Medical Department of the Army, General Wood, we are informed, authorized the statement that he had not been offered the position and that he would not accept it under any circumstances. To emphasize his statement he is reported to have dictated the following: "My relation with the Medical Department of the Army so far as any further duty in the medical corps is concerned is at an end, and whatever duty I may perform in the army in the future will be solely in the line." General Wood has been repeatedly mentioned as one of the more prominent candidates for the position of brigadier-general in the regular army — a postion of which his undoubted military ability and excellent administration of affairs at Santiago prove him fully capable of satisfactorily filling. His candidacy, however, is meeting with the united opposition of the line, who look on such positions as the perquisites of their branch of the service and who fully appreciate that the comparative youthfulness of General Wood, should he be made a brigadier-general in the line, would undoubtedly place him in command of the United States Army for many years. His former associates in the medical corps would all be glad to have him promoted; first because he has fairly earned the position of brigadier-general in the regular army; second, because as a general officer, ultimately commanding the army, he would be in a position to be of powerful assistance to the Medical Department, whose needs he knows and a decade of service in which he can never forget.

Miscellany.

ARMY MEDICAL BILLS.[1]

BILL FOR THE INCREASE OF THE MEDICAL DEPARTMENT OF THE ARMY.

Be it enacted by the State and House of Representatives of the United States of America in Congress assembled,

Section 1. That there shall be added to the number of medical officers of the army now authorized by law, four assistant surgeons-general with the rank of colonel, ten deputy surgeons-general with the rank of lieutenant-colonel, thirty surgeons with the rank of major, and eighty assistant surgeons with the rank of first lieutenant, who shall have the rank of captain at the expiration of five years' service as now provided by law. Provided that the original vacancies created by this act in the grade of colonel, lieutenant-colonel and major shall be filled by seniority promotion in accordance with established laws and regulations.

Sect. 2. Hereafter candidates for appointment in the medical corps of the army who pass a medical examining board in compliance with existing regulations shall be appointed acting assistant surgeons for a probationary period of six months; during this probationary period they shall attend the Army Medical School established at the Army Medical Museum in the city of Washington, and the faculty of the Army Medical School shall report to the Secretary of War at the end of the prescribed course of instruction upon the fitness and relative standing of the probationary candidates; those who are recommended by the faculty may then be commissioned by the President to fill existing vacancies in the medical corps of the army.

Sect. 3. Acting assistant surgeons appointed in accordance with the provisions of Section 2 shall be paid $100 per month and shall not be entitled to any allowances or to mileage in reporting for the prescribed course of instruction, or in returning to their homes if they are not recommended for a commission.

Sect. 4. The number of acting assistant surgeons appointed in accordance with the provisions of Section 2 shall not exceed the number of vacancies existing or to result from retirements during the probationary period.

Sect. 5. Candidates who have rendered satisfactory service as acting assistant surgeons or as commissioned medical officers in the volunteer army of the United States for a period of six months or more, shall be exempted from this period of probation and may be commissioned at once if vacancies exist and they pass a satisfactory examination as to their physical, moral and professional qualifications.

BILL FOR THE RELIEF OF ACTING ASSISTANT SURGEONS IN THE UNITED STATES ARMY.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Section 1. That on and after the passage of this Act acting assistant surgeons in the army of the United States shall have the same rights and privileges as regards leaves of absence as commissioned officers of the army.

Sect. 2. Acting assistant surgeons in the army of the United States who have been appointed since the first day of May, 1898, who have been absent from duty, by proper authority, on account of sickness contracted in the service, shall be paid for the time of such absence at the rate per month specified in their contracts.

BILL FOR THE RELIEF OF ASSISTANT SURGEONS WITH THE RANK OF CAPTAIN IN THE VOLUNTEER ARMY OF THE UNITED STATES.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That assistant surgeons in the volunteer army of the United States commissioned by the President as captains, in accordance with the provisions of an Act for increasing the efficiency of the army of the United States and for other purposes (approved March 2, 1899), are entitled to the pay of a "captain mounted" from the date of their acceptance of such commission as prescribed by law.

IS NAIL-CUTTING A SURGICAL OPERATION?

Some time ago, according to the *British Medical Journal*, a German court had to adjudicate on the question whether corns constitute a disease. A still more abstruse problem has recently engaged the attention of a Vienna tribunal. A medical practitioner of that city, having occasion to operate, very properly trimmed his nails as a preliminary. In doing so, however, he cut his finger, but was nevertheless able to perform several operations on the same day. The wound became infected, and the practitioner himself had to be operated on. He was thus disabled for twenty-one days, and therefore claimed five florins a day from an accident assurance company. The company repudiated liability, on the ground that, according to its by-laws, no claim can be entertained for an operation performed by a medical practitioner on himself. The question whether nail-cutting is a surgical operation appears to have proved too much for the judicial intellect, for, after hearing arguments on both sides and suffering much vexation of spirit, the court reserved its decision. We do not presume to offer any help towards the solution of so subtle a question. We venture, however, to submit that, if nail-cutting comes withtn the sphere of operative surgery, *a fortiori* shaving must do so, for that procedure was once among the duties of a surgeon. So well was this recognized in some countries that at the beginning of the present century some English surgeons were summarily dismissed the Danish Naval Service for refusing to act as barbers to the crews of their ships.

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[1] Three bills to be submitted by Surgeon-General Sternberg to Congress, at its coming session.

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Correspondence.

THE ARMY RATION.

Washington, December 4, 1899.

Mr. Editor: — Articles have appeared recently in the public press criticizing the army ration, denouncing its unsuitability for troops in a tropical climate and urging a radical change in its character. These articles are based on the elementary propositions that while fatty foods are good where a high development of animal heat is required, they are harmful in a climate where there is no call on the system for a large heat production. Every reader is willing to grant these propositions. They are simple and can be verified every summer and winter by the inhabitants of the north temperate zone. There are 12 ounces of bacon in the army ration and this is no doubt an excess of fat for a dietary in the tropics. But it does not follow that the army ration should therefore be changed. The critics who see so clearly that the ration should be altered to suit their views of what is right and proper to be eaten in tropical climates and who are astounded at the dulness of those army officials who think it wise to be slow in doing anything of this kind, do not appear to know that the army ration is run on a broader gauge than the elementary propositions which form the basis of their argument.

There is in the army of the United States a considerable difference between the ration of the soldier and the diet of the soldier. The critics of the army ration do not understand this. The ration is the allowance for subsistence of one person for one day. The diet is what is actually prepared in the kitchen for consumption by the soldier day by day. The ration is prescribed by law and consists of the meat, the bread, the vegetables, the fruit, the coffee and sugar, the seasoning and the soap and candle components.

The meat component does not consist of fat pork or bacon, as those who know nothing of the domestic economy of army kitchens appear to believe. On the contrary, there is some variety in the meat component. It consists of 20 ounces of fresh beef, *or* 20 ounces of mutton when the cost does not exceed that of beef, *or* 12 ounces of pork, *or* 12 ounces of bacon, *or* 22 ounces of salt beef, *or* 14 ounces of dried fish, *or* 18 ounces of pickled fish, *or* 20 ounces of canned salmon, *or* 18 ounces of fresh fish.

The bread component consists of 18 ounces of flour, with baking powder when the men have to bake their own bread, *or* 18 ounces of soft bread, *or* 16 ounces of hard bread, *or* 20 ounces of cornmeal.

The vegetable components consist of $2\frac{2}{5}$ ounces of beans, *or* $2\frac{2}{5}$ ounces of pease, *or* $1\frac{3}{5}$ ounces of rice, *or* $1\frac{3}{5}$ ounces of hominy AND 16 ounces of potatoes, *or* $12\frac{4}{5}$ ounces of potatoes and $3\frac{1}{5}$ ounces of onions, *or* $11\frac{1}{5}$ ounces of potatoes and $4\frac{4}{5}$ ounces of canned tomatoes, *or* $4\frac{4}{5}$ ounces of other fresh vegetables, not canned, when they can be obtained in the vicinity or transported in a wholesome condition from a distance.

The fruit component consists of 2 ounces of dried fruit, such as prunes, peaches, or apples. The other components consist of coffee green, or coffee roasted, *or* tea green or black, *and* sugar, *or* molasses, *or* cane syrup; vinegar, salt and black pepper, and to these are added the soap and candle components.

The slightest knowledge of practical cookery will enable any one who reads what I have just written to form an idea of what may be called the flexibility of the army ration. The soldier in the tropics is not called upon to eat his twelve ounces of bacon *or* go hungry. That *or* is not to be found in the regulation statement of the meat component of the ration, although there are more than half a dozen other important *ors* in it. And there is variety also in all the other constituents except the soap and candle components.

If the scientist will calculate the elementary constitution of any one of the various diets which may be formed from the flexibility of the army ration, he will find that there is a sufficiency of nitrogen and carbon in each to support the system of the soldier under the heaviest strain of work and exposure. If the proximate principles be calculated it will be found that many variations may be made in the relative proportions of proteids, hydrocarbons and carbohydrates. But more than all this, we *know* that the soldiers of the United States have never gone hungry on their full ration.

Granted then that the ration suffices to sustain the system in the cold of a Montana blizzard, will any one suggest its insufficiency for nutritive purposes where there is little call for physiologic fuel to keep up the animal heat? No, but, says the critic, for whose information I am writing, there is too much of the hydrocarbons, too much bacon in the ration to make it a suitable ration for tropical climates. Too much bacon! Too much candle! There is a candle component in the ration, but the soldier is not called upon to eat it. Nor is he required to eat the bacon if he does not desire to do so.

This leads me to refer to the elasticity of the ration. Its flexibility has already been referred to; but its elasticity also is wonderful. It is so elastic that the soldier may verily eat his candles if he does not require them for other purposes. He may leave the candles in the hands of the subsistence department and if their money value will pay for a can of peaches, or a pound of rice, or so much of any other of a long list of articles kept for sale by the subsistence officers, he can eat his candle component in the form of peaches and rice or any of the other purchasable things. So with the bacon. He is no more required to eat that because it is part of the ration than he is required to eat the candles, but he may transform it into some other article of food which he likes better or which is better for him under the climatic conditions which affect him at the time. So, indeed, with all the other components of the ration, excepting only the fresh vegetables, fresh bread, baking powder and dried fruit. Even the fresh beef component may be reduced in quantity and the money value of the quantity not issued for use may be drawn in other articles of sales.

There is even a greater elasticity than this to the ration, for the money credit for components not drawn and used may be applied to the purchase of articles from outside sources, articles not kept for sale by the subsistence department. Thus in probably every company and post mess-hall in the United States on Thursday, November 30, 1899, there was turkey with cranberry sauce on the table, representing so much bacon and other articles of the formal ration not drawn in kind and used, but left in the hands of the subsistence department and placed as a cash credit for the payment of turkeys and cranberry sauce or of any other purchases to vary the diet of the soldier. If at any of the posts they did not have turkey and cranberry sauce on that day it was because these things were impossible there, but they no doubt had an excellent dinner all the same.

Under the present law and regulations as to the ration the soldier can have any variation of his diet within certain money value limits which his officers consider necessary for his well-being. His ration is fixed by law and it is a most liberal one; but his dietary depends upon the intelligent supervision of company officers and the ability of the company cooks. I have stated the law and regulations concerning the ration and its flexibility and elasticity, and the subsistence department may be depended upon to provide the articles necessary to vary the diet. If a change in the dietary is advisable it lies with the company commanders to carry it into effect. If the change is desirable on medical grounds, medical officers should communicate their views to these responsible officers and the change can be effected without difficulty. There is no need to talk about changing the ration to effect a change in the dietary.

But it may be said, Why not go a step further and reduce the ration to simpler terms? Why not make it a money value instead of so much of this, that and the other component? A money value to be of equal value at all military stations would have to be a different value to every station. A dollar is worth nothing from the point of view of the ration if there is not a bite of anything within its purchasing radius; but to the stomach of a hungry soldier 20 ounces of fresh beef, 12 ounces of bacon, etc., have a fixed value and when the subsistence department is charged with providing these articles the soldier will fare much better than if the department had only to provide him with so many cents a day for his food.

The United States Army ration is the most liberal ration in the world. It is the best ration for the far northwest of this continent, whence come the subzero cold waves to sweep over the country from the upper strata of the atmosphere, and it is the best for the tropics when intelligently utilized. It is the product of the experience of several generations of army officers and it is the part of wisdom to be slow in urging alterations at the suggestion of people who know that an excess of fatty food is not suitable for a dietary in the tropics and who have just discovered that there are 12 ounces of bacon in the soldier's ration.

But the best dietary for the tropics is a wholly different subject from the ration and we will await with interest the publication of the observations of our officers, line and medical, on the modifications which appear to them to be judicious for Cuba, Puerto Rico and the Philippines.

Very truly yours,

Charles Smart, M.D.,

Lieutenant-Colonel and Deputy Surgeon-General, U. S. Army.

CONTRACT SURGEONS IN THE UNITED STATES ARMY.

Washington, December 4, 1899.

Mr. Editor: — The issue of a general order of the War Department calling attention to the fact that acting assistant surgeons should be given the same protection in their positions and the same respect and obedience from enlisted men as is accorded commissioned officers is of interest, coming, as it does, almost simultaneously with the publication of a call for a mass meeting of acting assistant surgeons in New York on the 5th of December, for the redress of grievances and favorable legislation by Congress in their behalf. It calls attention to the anomalous status of this worthy class of men as well as to the many serious defects in the contract surgeon system which are constantly requiring petty regulation and legislation on the part of the authorities for the promotion of its efficiency.

It may be premised at the outset that all of this annoyance, friction and dissatisfaction would be promptly done away with if every medical man connected with the military service possessed the well-understood rights, privileges and responsibilities of commissioned officers, and at the same time there is no doubt but that the professional services of a superior class of men would be thus secured to the Government. The present contract system, by which physicians are brought from civil life and paid a fixed stipend so long as their services are required without endowment with military rank, is degrading to the dignity of the medical profession whose representatives they are, and is a relic of the former social inferiority of the medical man as compared with line officers, an inferiority even now tacitly assumed in the British service, where the surgeon is not invited to join the regimental mess nor his wife and family accorded equal social privilege with the households of the combatant officers. It is a direct effort to belittle his importance, restrict his services and exclude him from his rightful position in the military oligarchy. No one should suggest the temporary hiring of grocery clerks to perform the duties of commissariat nor of civilian contractors to act as purchasing, constructing or shipping quartermasters; yet the proposition to bring in the practising physician, wholly inexperienced in the ways and needs of the military service and expect him to satisfactorily perform the multifarious duties of the trained medical officer appears to be only natural to the public mind. Popular imagination pictures the army surgeon as a somewhat gory individual, who at such times as he is not engaged in lopping off arms and legs acts merely as a dispenser of pills and potions. This conception, however, is far from the reality. The field of operative surgery is circumscribed by restricted opportunity, and antisepsis, with resulting conservatism. The more humane character of wounds of the battlefield have done much to still further reduce the surgical duties of the medical officer. With a more rational knowledge of the effects of drugs the importance of prescribing has greatly diminished and the army surgeon, like his civilian *confrères*, is prone to depend rather upon careful nursing and the *vis medicatrix naturæ* than upon the doubtful effects of generous medication. It is obviously essential that he should be expert in the branches of medicine and surgery, but it is none the less certain that the army medical officer finds his chief usefulness in the province of hygiene, a subject rarely capable of being turned to financial account in civil life and one in which the average practitioner, striving to meet his monetary obligations and hold his own in professional competition, is usually both unlearned and uninterested. Hence it is that the army medical man finds his civilian counterpart not in the busy physician or surgeon but rather in the health officer or the few whose independent means permit the study of an unremunerative science, and hence also the far greater value to the military service, if outside assistance be required, of the latter professional class. It may be accepted that few medical men are properly qualified by their previous training to enter at once upon the duties which fall to the lot of the army surgeon.

Besides bringing into the service a class of men who, while excellent professional men as regards the active practice of civil life, are unfitted to assume the responsibilities of the sanitarian, the contract surgeon system, with the absence of official status which it entails, is both illogical and productive of friction and inefficiency. However one may regard the army medical service in the abstract, it is a distinctly military institution. Discipline must be maintained and there are enlisted hospital-corps men to control, educate and command. How relatively important a task this is may be seen by the fact that during the war with Spain there were in our army more than 7,000 sanitary soldiers — the equal of a command of a major-general — and at the present time the number, 4,000, is equal to the numerical strength of eight infantry regiments as organized eighteen months ago. These men, like their comrades and superiors in the line, are prone to respect authority only as they see it officially embodied in shoulder straps. During the late war, and at present also, these men were largely organized into ambulance and hospital-corps companies which had to be commanded and instructed, not only in nursing and first aid, but in the duties of the soldier — the things which change undisciplined recruits into an efficient integral factor of the military establishment. Such commands were often larger and of more responsibility than those possessed by captains of infantry, cavalry and artillery — and no one would be willing to say that an untrained individual brought in from civil life is, through intuition, at once competent to organize, educate and control such organizations in the line.

To properly administer a large division or general hospital often containing the numerical strength of a full regiment requires not only executive ability and experience in handling men but also an intimate acquaintance with military methods and customs. Further, some one must be responsible for the safety and administration of medical property, of which millions of dollars' worth are possessed by the United States for securing the comfort and care of the sick. The Government has no official hold upon the contract surgeon and hence dares not attempt to make him an accountable officer. He is not amenable to court martial any more than any other civilian, and justice — for malfeasance of office — can only be brought about by the ponderous machinery of the United States civil courts. Such a condition is obviously undesirable. In addition, incompetency, inattention to duty, disobedience of orders or other military offences can be punished only by discharge from the service. Furthermore, the system is directly prejudicial to the *morale* and efficiency of the Medical Department. Few men of the professional attainments desired in the service care to occupy the anomalous position of contract surgeon, with its absence of authority and its precarious future presenting small hope of advancement. Bright and desirable young men accept contracts to tide over temporary financial difficulty and, their object attained, go back into civil life at a time when, through the experience they have acquired, they and their services have become of the most value to the Government. A few older men who have passed the comparatively elementary examination required for appointment, but who have failed in the competition of civil life or are unwilling to risk its hazards, are content with the means of temporary support afforded by the position they occupy; secure in the knowledge that their professional progress in its relation to the general advancement of medical science will not be tested in the future, as is repeatedly done with all commissioned medical officers. This class of men is not wanted in the military service.

The contract surgeon system has not even the merit of economy. It is true that Congressman Hull stated in Congress last winter that "the best medical talent in the country could be secured for $150 per month," as contract surgeons, but with this statement the medical profession at large will scarcely agree. The pay of an acting surgeon exceeds the pay of a commissioned medical officer for about the first seven years of his service. The allowances of both are the same, except that the medical officer is required to purchase and keep his mount at his own expense, while the contract surgeon is allowed the use of a Government horse gratis, wherever it is required. Further, the former is obliged to maintain a much larger and more expensive outfit of uniforms. It will be admitted that such a condition works an injustice to the men who have undergone a far more searching examination into their physical, mental and moral qualifications and who may therefore be fairly assumed to be, as a whole, a superior class of men.

In the contract surgeon system there is unfortunately no legal safeguard against its use for political purposes. Candidates are appointed by the surgeon-general, who is thus made an object of attack by the place hunters, whose support and qualifications are too often more of a political than a professional character, and by that class of politicians who regard all Government positions as a means of patronage and whose scruples are not too great to prevent their use of any influence to force compliance with their demands. There is no legal provision, however, by which an appointment through the surgeon-general cannot be directed by higher authority, even in the face of strong objections. The method of appointment of commissioned medical officers is based wholly on merit, is minutely prescribed by law and is so entirely irrespective of politics that there is no way by which a candidate could be appointed who has not fulfilled all the qualifications required by an impartial examining board. Such a protection given a special class should cover the entire personnel of the Medical Department; for it, and it alone, bears the praise or censure resulting from the efficiency of its representatives.

The remedy for the above conditions is simple, and is in the power of the medical profession of the country to administer during the next Congressional session. All medical men serving with troops should be commissioned officers having a permanent status and possessing equal prerogatives with officers of other departments. They should be sufficient in numbers to properly cope with any emergency. In the few instances where outside and temporary appointments may be necessary such action should be taken only after the attainment of the standard required in the regular service and the appointers should be commissioned as officers of volunteers. They should be in a position to demand as rights what too many line officers are prone to regard as concessions. They should all possess the power of command, a power the proper exercise of which has been demonstrated by General Wood and others to depend upon the man rather than upon the calling which he has chosen in life.

In conclusion, it behooves the medical profession at large to protect the rights of its representatives in the military service, and that the necessity is actual rather than theoretical is shown by the fact that at the present time there are only 187 regular medical officers and over 400 contract surgeons serving under the colors.

Very respectfully yours,
Edward L. Munson, M.D.,
Assistant Surgeon United States Army.

SWEDISH MASSAGE LITERATURE AND SWEDISH MASSAGE.

Boston, November 27, 1899.

Mr. Editor: — Dr. Douglas Graham's communication in the Journal, November 23, page 534, induces me to ask you kindly to publish a few remarks which I think are appropriate.

The statement conveys several incorrect impressions. It asserts that no book existed in the Swedish language prior to, or in, 1887; it implies that the Swedes gained their first knowledge of massage from an article written by Dr. Graham and translated into the Swedish language; it also implies incompetency of the Swedes on the subject of massage and its application. It expresses the view that massage with the aid of lubricants is merely inunction, that oil and other lubricants are used for the purpose of preventing friction, and that the Swedes are over-fond of methods of manipulation by the aid of grease.

In reply I would wish to call the attention of Dr. Graham to the following citation of Swedish authors, with the name and date of their publications on the subject of massage and gymnastic treatment. Also, I would refer him to Swedish medical literature from the early part of this century until to-day. The work of the Swedes in this field is so well known and generally admitted that this refutation of Dr. Graham's well-meaning but misguided and erroneous attempt of furnishing unsolicited information would hardly be necessary, but it is earnestly hoped that it may help him to estimate more accurately the history of massage, and the effect which the work of the Swedes has had upon the development of this form of treatment, as it is understood and practised to-day.

Dr. T. J. Hartelius's "Lärobok i Sjukgymnastik" (second edition) was published in June, 1883. In 1833 Dr. M. Retzius wrote "Några ord om värdet af friktioner," and a few other publications in Swedish are: by Asp in 1878 "Om lifmoder massage"; by Bergham in 1875, "Om de akuta traumatiska ledgängskadornas behandling med massage"; by Berghman and Helleday in 1873, "Anteckningar om Massage"; by E. Johnson in 1878, "Bidrag till Massage-behandlingens Statistik"; by Lindblom in 1887–8, "Om Brandts' gynekologiska gymastik"; by "M—u" in *Eira* (a medical journal), 1877, "Massage i Japan"; by Nicolaysen in 1873, "Om Massage som Helbradelses Middel" (Norwegian); by Pippingskjöld in 1881, "Yttrande öfver Majoren Thure Brandts' genital gymnastik i allmänhet och särskildt"; in 1875, "Tio fall af Massage" by Westerland, and "Nägot om Massage," by Wretlind, and others too numerous to mention. Also, it must be remembered that many Swedes have written on this subject in foreign languages, notably German, French, English and Spanish; furthermore, nearly every author on massage, of whatever nationality, refers to Swedish workers and quotes their publications freely, thus giving them credit of pioneer work in this field.

The impression is received from Dr. Graham's letter that the Swedes gained their first knowledge of massage as a remedial agent from a translation into their language of an article written by Dr. Graham; a very absurd impression, obviously, since Scandinavian physicians had given attention to this subject long before Dr. Graham saw daylight. It is not my object in writing this to claim for the Swedes the credit of all the work that has been done in this direction; many English, American, French and German physicians have done an immense amount of work and they are freely quoted by recent Swedish writers on this subject. Dr. Graham is himself entitled to credit for such work, but it is to be regretted that he should expose himself to criticism by such a reckless and intemperate outburst, containing inaccurate statements and implying incompetency of a whole race in a line of work where they have achieved universal reputation, and deservedly so, since it has been gained by conscientious, industrious, persevering work along rational, scientific lines.

The quotation from Dr. Mitchell's article needs comment. In the first place, it is difficult to understand what bearing this quotation can have upon the qualifications, or lack of them, as Dr. Graham so fondly maintains, of the reviewer who favorably mentioned Mr. Ostrom's book on massage, to do so, and who, by so doing, precipitated this extraordinary assault upon the Swedes. I do not know who wrote the review, but I am quite sure that it was not written by a Swede, and the alleged incompetency of this race would therefore not be material in discussing the shortcomings of a reviewer on a book, even though the book itself were written by a Swede, and on the subject of massage, about which, among this nation, ignorance, or, at the very best, an erroneous conception, is prevalent, according to Dr. Graham's view.

Regarding the quotation itself, I need only refer to the many favorable comments made by American, English, German and French physicians about Swedish massage and gymnastics, and to the excellent books and articles published by well-trained and balanced physicians in the Swedish language on this subject, to show the folly and inaccuracy of Dr. Mitchell's statements. That they rub badly may be true, but they apply massage and gymnastics well, as a rule, if they have received the training adopted in Sweden; rubbing is one thing and massage another. That they are over-fond of *effleurage* is not true; if Dr. Mitchell cares to read Dr. Hartelius's book, or any other book on this subject written by a Swede, he will find that this manipulation occupies its proper place, and is not recommended out of place. I have never known that any American made the claim of having originated the special manipulation known as muscle-kneading; the different modes of kneading a muscle are spoken of in early Swedish writings. Kneading of the muscles was also practised among the Greeks and Romans, and among barbaric races long before the dawn of our present civilization. Therefore it would seem incorrect to speak of an American muscle-kneading, or of a Swedish muscle-kneading. As for thought at the very finger-ends, the use of these words in this connection may be original with Dr. Mitchell, but the use of intelligence and care in manipulating the tissues in disease is not original with him.

In Continental Europe (and in America too) many so-called institutes and sanitariums exist, where Swedes are employed to apply massage, but they are usually not thoroughly trained, either as *masseurs* or as physicians. They are commonly employed because they are Swedes, and a very limited knowledge of some manipulations has been acquired by them; they are usually fairly strong and willing, and often think they must give the patient his money's worth, and they do so by using considerable physical force in their manipulation. Probably Dr. Mitchell fell into such hands. To draw generalized conclusions, and to make so sweeping statements from such premises and from a few poorly chosen individual experiences, is obviously not only illogical but also unjust. I am not aware that Dr. Mitchell ever claimed to be a practical *masseur*, and if he is not, his proficiency as a critic of the massage technique of the Swedes, who are masters in this field, would seem questionable. I believe somebody has referred to Dr. Mitchell as a "father of massage"; this title appears to be misapplied, since it is for his ability as a diagnostician and medical practitioner that Dr. Mitchell has earned attention, rather than as a *masseur*. I regret the necessity of unfavorable comment on the statements of so distinguished, scholarly and learned a physician as Dr. Mitchell undoubtedly is, but I feel that justice demands it, since his words carry great weight with them, even though they be thoughtlessly spoken.

The impression is also suggested, from the use of these quotations by Dr. Graham, that he is a native of America, but I believe that he was born in Scotland.

As to the use of oil, or other lubricants, in doing massage, it is not only to be recommended, but absolutely necessary when giving deep frictions. The object of the lubricant is obvious: it is to prevent injury to the epidermis. It is not for the purpose of preventing friction, as Dr. Graham so illogically says; the friction is essential, and it is a very important factor as a remedy, due not only to the effect upon the circulation, but also in some instances to the heat produced; the degree of heat to be generated by the friction would depend on the object to be desired, and is regulated by the speed, pressure and size of friction surfaces, and also by the quantity and quality of lubricant used. The moderate use of oil cannot justly be termed inunction; it does not obviate the manipulation called friction, but facilitates it. A good "grip" is not necessary in doing friction, since it is done by making the hand, or finger, slide over the skin with a certain degree of pressure. I agree with Dr. Graham that it does not require any more skill to *rub* with grease than it does to paint a barndoor (although to do this well would require a certain amount of technical skill, as every painter can vouch for), but I also wish to emphasize the fact that the use of lubricants in *massage* does not in the least diminish the necessity for technical skill, manual dexterity, medical knowledge, and other qualities required by everybody who would attempt to apply massage for the relief of disease. I would cite the manipulation of the sciatic nerve, when diseased, as an example, where deep friction by the aid of lubricants would be indicated and where judgment, skill and knowledge are as important as in any condition requiring dry manipulation (such as kneading, percussion, vibration and pressure).

A word about the home of massage. No educated Swede ever claimed his country as the home of this treatment, if by home is to be meant the place of birth or origin. Sweden can only claim to have produced a number of men who have done considerable original work with a view of adapting manipulations and movements as a means of cure of disease, of having systematized this mode of treatment, and of having paved the way for its rational application to disease in accordance with medical thoughts and progress. But as already stated, they are not alone in this work; other nations have done their share.

The home, or origin, of massage is to be found in the Garden of Eden. Adam found that scratching relieved itching, and from his time until to-day, steady progress has been made. As is well known, many savage and semi-savage people use the treatment; even the dog takes a hand in massage when licking his swollen, painful feet.

If I am not encroaching too much upon the valuable space of the Journal, and if deemed proper, I would like to add a word about Mr. Ostrom's book. On the whole, the book deserves favorable comment, and fulfils the purpose for which the author intended it fairly well. The conciseness of the book becomes, however, in some instances, too pronounced, and more descriptive and accurate terms could be used in naming certain movements and manipulations; a few slight inaccuracies also occur. For instance, no mention of centrifugal light striking over the peripheral nerves is made; deep straight frictions are also omitted. Too little is said of nerve-pressure; vibration is spoken of as a shaking, which it is not, and should not be. The various forms of kneading are not sufficiently dealt with. In Fig. 7 on page 22, the hands are in correct position for circular or combined kneading of the thigh, a manipulation produced by a combination of an alternate squeezing and rolling of the hands, the grasped tissues being carried along with the motion of the hands, but it is represented as an illustration of kneading with the thumbs, a procedure which would, ordinarily, hardly be appropriate in this region, or would be but rarely needed here. Transverse muscle-kneading is not spoken of. The most conspicuous deficiency in the terminology is offered by the constant use of the word "rotation" wherever the author intends to speak of circumduction. On page 55, in the chapter on vibrations, the author says: "Pressing and shaking [meaning vibration][1] have a stimulating and strengthening effect upon the nerves"; this is evidently an error. The effect of nerve-pressure and of vibration is sedative, allaying irritation and relieving pain. This effect is produced probably by diminishing the conductivity of impulses through the neuron; such a result would imply diminished physiological activity of the nerve tissue, or a condition approaching rest, rather than increased physiological activity, which would be anticipated from stimulation.

Some criticism may be made of the remarks about the treatment of tabes; co-ordinative exercises are not even alluded to, the description of nerve stretching is not complete, and a more detailed account of spinal massage would not be amiss.

In spite of these and other minor defects, the book is a step in the right direction, and it is certainly very practical.

Respectfully yours,

Alfred H. Lindström, M.D.

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[1] My brackets.

METEOROLOGICAL RECORD

For the week ending November 25th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer — Daily mean.	Thermometer. — Daily mean.	Thermometer. — Maximum.	Thermometer. — Minimum.	Relative humidity. — 8.00 A. M.	Relative humidity. — 8.00 P. M.	Relative humidity. — Daily mean.	Direction of wind. — 8.00 A. M.	Direction of wind. — 8.00 P. M.	Velocity of wind. — 8.00 A. M.	Velocity of wind. — 8.00 P. M.	We'th'r.* — 8.00 A. M.	We'th'r.* — 8.00 P. M.	Rainfall in inches.
S...19	29.83	51	51	48	86	90	88	S.W.	W.	6	12	O.	F.	.09
M..20	29 85	44	51	36	78	75	76	N.W.	N.W.	18	11	C.	C.	
T...21	29.95	39	45	33	80	66	73	N.	N.W.	10	4	C.	C.	
W..22	29.78	44	51	36	65	66	66	W.	W.	9	9	R.	O.	.02
T...23	29 88	42	47	36	75	60	68	N.	N.	12	14	C.	O.	
F...24	30.03	40	49	32	69	49	59	N.W.	N.W.	8	6	C.	C.	
S...25	29.97	34	39	29	74	63	68	N.W.	N.W.	12	10	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfal. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 25, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from — Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,550,053	1153	370	9.00	21.33	1.17	.90	3.24
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,266,832	—	—	—	—	—	—	—
St. Louis. . .	624,000	—	—	—	—	—	—	—
Boston . . .	539,416	225	74	10.12	20.68	.41	1.76	4 84
Baltimore . .	506,389	167	42	5.90	8.26	—	—	5.31
Cincinnati . .	405,000	103	—	2.94	9 80	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	305,000	93	22	12 96	14.04	1.08	7.56	2.08
Washington .	277,000	96	22	14.56	8.32	—	6.24	5.20
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	51	12	18.50	10 10	7.40	3.70	1.85
Nashville . .	87,754	25	7	12.00	16.00	4.00	4.00	8.00
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	111,732	35	9	14.30	5.12	5 12	—	2.86
Fall River . .	103,142	25	7	20.00	16.00	12.00	4.00	4.00
Cambridge . .	92,520	33	10	15.15	21.21	—	6.06	6.06
Lowell . . .	90,114	27	10	7.40	18.50	3.70	—	3.70
New Bedford .	70,511	19	8	10.52	10.52	5.26	—	—
Lynn	68 218	—	—	—	—	—	—	—
Somerville . .	64,394	12	4	16.66	16.66	—	—	8.33
Lawrence . .	59,072	18	12	16.66	11.11	5.25	—	—
Springfield . .	58,266	22	3	8.30	4.15	4.15	—	4.15
Holyoke . . .	44,510	14	3	21 42	7.14	7.14	—	7.14
Brockton . .	38,759	—	—	—	—	—	—	—
Salem	37,723	10	4	20.00	10.00	10.00	—	—
Malden . . .	36,421	7	1	—	—	—	—	—
Chelsea . . .	34,235	14	2	7.14	—	—	—	7.14
Haverhill . .	32,651	10	2	20.00	—	—	—	10.00
Gloucester . .	31.426	4	—	—	—	—	—	—
Fitchburg . .	30,523	4	—	—	—	—	—	—
Newton . . .	30,461	11	1	9.09	9 09	—	9.09	—
Taunton . . .	28,527	12	—	—	8 33	—	—	—
Everett . . .	28,102	6	2	16.66	16.66	—	16.66	—
Quincy . . .	24,578	4	—	25.00	—	—	—	25.00
Pittsfield . .	23,421	11	3	9.09	9.09	9.09	—	—
Waltham . .	22,791	3	1	33.33	33.33	33.33	—	—
North Adams .	21,583	3	3	—	33.33	—	—	—
Chicopee . .	18,316	7	4	14.28	28.56	14.28	—	—
Medford . . .	17,190	3	2	—	—	—	—	—
Newburyport .	15,036	3	1	—	—	—	—	—
Melrose . . .	14,721	2	—	—	—	—	—	—

Deaths reported 2,257; under five years of age 644; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 212, acute lung diseases 376, consumption 263, diphtheria and croup 81, typhoid fever 34, diarrheal diseases 32, measles 18, scarlet fever 16, erysipelas 13, cerebro-spinal meningitis 12.

From measles New York 12, Pittsburg 3, Providence 2, Boston 1. From scarlet fever New York 9, Boston 2, Washington, Providence, New Bedford and Salem 1 each. From erysipelas New York 9, Cincinnati 2, Boston and Washington 1 each. From cerebro-spinal meningitis New York 4, Boston and Worcester 2 each, Washington, Cambridge, Somerville and Haverhill 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404.408, for the week ending November 18th, the death-rate was 17.3. Deaths reported 3,785: acute diseases of the respiratory organs (London) 324, diphtheria 117, fever 98, measles 83, diarrhea 52, whooping-cough 36, scarlet fever 30, small-pox (Hull) 6.

The death-rates ranged from 11.5 in Burnley to 25.3 in Preston: Birmingham 18.0, Bradford 15.9, Croydon 12.7, Gateshead 19.1, Huddersfield 14.6, Leeds 17.5, Leicester 17.1, Liverpool 21.2, London 17.5, Manchester 18.5, Newcastle-on-Tyne 15.3, Nottingham 19.6, Portsmouth 14 5, Sheffield 21.4, Sunderland 15.4.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING DECEMBER 2, 1899.

L. G. Heneberger, surgeon, ordered to temporary duty, November 23d, in connection with Recruiting Rendezvous, Detroit, Mich.

H. N. T. Harris, passed assistant surgeon, ordered to New York, N. Y., December 4th, for examination for promotion, and then home and to wait orders.

M. H. Simons, medical inspector, ordered to the Naval Recruiting Rendezvous, 177 Main Street, Buffalo, N. Y.

A. F. Price, medical inspector, ordered to be examined for promotion at Washington, D. C., November 28th, and then to wait orders.

G. P. Lumsden, surgeon, detached from the Naval Recruiting Rendezvous, Buffalo, N. Y., and ordered home to wait orders.

D. Dickinson, medical inspector, detached from the Naval Hospital, Washington, December 1st, and ordered home and to wait orders.

A. F. Price, medical inspector, ordered to the Naval Hospital, Washington, D. C., December 1st.

F. B. Hancock, assistant surgeon, resignation accepted to take effect from November 25th.

B. R. Ward, passed assistant surgeon, ordered to the "Independence," December 15th.

J. S. Taylor, assistant surgeon, detached from the "Independence," December 15th, and ordered to the "Scindia," December 31st.

E. Davis, assistant surgeon, appointed assistant surgeon, November 21st.

G. P. Lumsden, surgeon, ordered to temporary duty on the "Franklin," December 1st, during absence of Passed Assistant Surgeon J. A. Guthrie, on leave; thence home and to wait orders.

J. Stoughton, passed assistant surgeon, order of October 14th, detaching from the "Monadnock" and ordering to the "Bennington," revoked.

D. G. Beebe, assistant surgeon, order of October 14th, detaching from the "Bennington" and ordering to "Ranger," revoked.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING NOVEMBER 30, 1899.

Carter, H. R., surgeon. To report at Washington, D. C., for special temporary duty. November 18, 1899.

Carmichael, D. A., surgeon. Leave of absence for thirty days granted by Bureau letter of August 23, 1899, revoked. November 17, 1899.

Magruder, G. M., surgeon. Relieved from duty at Memphis, Tenn., and directed to report at Washington, D. C., for special temporary duty. November 23, 1899.

Geddings, H. D., passed assistant surgeon. To proceed to New York, N. Y., for special temporary duty. November 18, 1899.

Smith, A. C., passed assistant surgeon. To report at Washington, D. C., for special temporary duty. November 20, 1899. To rejoin station at Norfolk, Va. November 22, 1899.

Grubbs, S. B., assistant surgeon. Relieved from duty at Cienfuegos, Cuba, and directed to report at Washington, D. C., for special temporary duty. November 23, 1899.

Robinson, D. E., assistant surgeon. Relieved from duty at Mobile, Ala., and directed to proceed to Memphis, Tenn., and assume command of the Service. November 23, 1899.

Thornbury, F. J., assistant surgeon. Relieved from duty at New York, N. Y. (Immigration Depot), and directed to proceed to San Francisco, Cal., for duty and assignment to quarters. November 20, 1899.

Bready, J. E., acting assistant surgeon. Granted leave of absence for seven days. November 23, 1899.

Clarke, F. M., acting assistant surgeon. Granted leave of absence for ten days from November 20th. November 21, 1899.

Dudley, D. E., acting assistant surgeon. Department letter of October 31, 1899, granting Acting Assistant Surgeon Dudley leave of absence from November 1, 1899, amended so that said leave shall date from November 16th. November 21, 1899.

Smyth, F. R., acting assistant surgeon. Granted leave of absence for four days. November 20, 1899.

Achenbach, John, hospital steward. Relieved from duty at Port Townsend, Wash., and directed to report to the Port Townsend Quarantine Station, Wash., for duty. November 18, 1899.

Brock, G. H., hospital steward. Relieved from duty at New Orleans, La., and directed to proceed to Cincinnati, O., for duty and assignment to quarters. November 18, 1899.

McKay, M., hospital steward. Relieved from duty at Boston, Mass., and directed to proceed to New York, N. Y. (Stapleton), for duty and assignment to quarters. November 18, 1899.

Allen, G. C., hospital steward. Relieved from duty at New York, N. Y. (Stapleton), and directed to proceed to the Delaware Breakwater Quarantine Station for duty and assignment to quarters. November 18, 1899.

Peck, F. H., hospital steward. Relieved from duty at Baltimore, Md., and directed to proceed to New Orleans, La., for duty and assignment to quarters. November 18, 1899.

Olsen, E. T., hospital steward. To rejoin station at Wilmington, E. C. November 18, 1899.

Troxler, R. F., hospital steward. Relieved from duty at San Francisco, Cal., and directed to proceed to Port Townsend, Wash., for duty and assignment to quarters. November 18, 1899.

Peckham, C. T., surgeon. Granted leave of absence for four days. November 28, 1899.

Glennan, A. H., surgeon. Relieved from duty as quarantine officer at the port of San Juan, Porto Rico, and directed to proceed to New Orleans, La., and assume command of the Service. November 27, 1899.

Pettus, W. J., surgeon. Relieved from duty at the Cape Charles Quarantine Station and directed to proceed to Cleveland, O., and assume command of the Service. November 27, 1899.

Smith, A. C., passed assistant surgeon. Relieved from duty at Norfolk, Va., and directed to report at Washington, D. C., for special temporary duty. November 28, 1899.

Stimpson, W. G., passed assistant surgeon. To rejoin station at St. Louis, Mo. November 27, 1899.

Eager, J. M., passed assistant surgeon. Relieved from duty at Detroit, Mich., and directed to proceed to Cincinnati, O., and assume command of the Service. November 27, 1899.

Oakley, J. H., passed assistant surgeon. Relieved from duty at Evansville, Ind., and directed to report at Washington, D. C., for special temporary duty. November 27, 1899.

Sprague, E. K., passed assistant surgeon. Relieved from duty in the Hygienic Laboratory, Washington, D. C., and directed to proceed to New York, N. Y., and report to Surgeon L. L. Williams (Immigration Depot) for special temporary duty. November 28, 1899.

Thomas, A. R., passed assistant surgeon. Relieved from duty at the Reedy Island Quarantine Station and directed to report at Washington, D. C., for special temporary duty. November 28, 1899.

Wickes, H. W., passed assistant surgeon. Relieved from duty at Cleveland, O., and directed to report at Washington, D. C., for special temporary duty. November 27, 1899.

Greene, J. B., passed assistant surgeon. To report at Washington, D. C., for special temporary duty. November 25, 1899. To rejoin station at Boston, Mass. November 28, 1899.

Mathewson, H. S., assistant surgeon. Relieved from duty at the San Francisco Quarantine Station and directed to report at Washington, D. C., for special temporary duty. November 24, 1899.

Lavinder, C. H., assistant surgeon. Relieved from duty as quarantine officer at the port of Ponce, Puerto Rico, and detailed as quarantine officer at San Juan, Puerto Rico. November 27, 1899.

Grubbs, S. B., assistant surgeon. Relieved from duty as quarantine officer at the port of Cienfuegos, Cuba, and directed to report at Washington, D. C., for special temporary duty. November 24, 1899.

Russell, H. C., assistant surgeon. Relieved from duty at Cairo, Ill., and directed to proceed to Boston, Mass., for duty and assignment to quarters. November 27, 1898.

Von Ezdorf, R. H., assistant surgeon. To rejoin station at New Orleans, La. November 27, 1899.

Fricks, L. D., assistant surgeon. To report at Washington, D. C., for temporary duty. November 24, 1899.

Gwyn, M. K., assistant surgeon. Relieved from duty at Boston, Mass., and directed to proceed to Chicago, Ill., for duty and assignment to quarters. November 27, 1899.

Corput, G. M., assistant surgeon. To report at Washington, D. C., for special temporary duty. November 24, 1899.

Richardson, T. F., assistant surgeon. Relieved from duty as quarantine officer at the port of Nuevetas, Cuba, and directed to proceed to the Reedy Island Quarantine Station and assume command of the Service. November 24, 1899.

King, W. W., assistant surgeon. Relieved from duty at New Orleans, La., and assigned to duty as quarantine officer at Ponce, Puerto Rico. November 27, 1899.

Korn, W. A., assistant surgeon. Relieved from duty at Chicago, Ill., and directed to proceed to Evansville, Ind., and assume command of the Service. November 27, 1899.

Holt, J. M., assistant surgeon. Relieved from duty at St. Louis, Mo., and directed to proceed to Cairo, Ill., and assume command of the Service. November 27, 1899.

Edson, Elmer R., assistant surgeon. To proceed to St. Louis, Mo., for duty and assignment to quarters. November 24, 1899.

Wille, Clarence W., assistant surgeon. To proceed to Boston, Mass., for duty and assignment to quarters. November 24, 1899.

Amesse, John W., assistant surgeon. To proceed to Detroit, Mich., for duty and assignment to quarters. November 24, 1899.

Wilson, Robert L., assistant surgeon. To proceed to San Francisco, Cal., for duty and assignment to quarters. November 24, 1899.

Brown, B. J., Jr., acting assistant surgeon. Granted leave of absence for three days. November 27, 1899.

Frick, John, acting assistant surgeon. Relieved from duty at Santiago, Cuba, and directed to proceed to Havana, Cuba, for duty. November 29, 1899.

Lindsley, J. M., acting assistant surgeon. Detailed as quarantine officer at the port of Cienfuegos, Cuba. November 24, 1899.

Stone, Owen W., acting assistant surgeon. Detailed as quarantine officer at the port of Nuevitas, Cuba. November 24, 1899.

APPOINTMENTS.

Elmer R. Edson, of Indiana; Clarence W. Wille, of Pennsylvania; John W. Amesse, of Michigan, and Robert L. Wilson, of Texas, commissioned as assistant surgeons. November 22, 1899.

Original Articles.

EXPERIMENTS UPON THE DISINFECTION OF ROOMS WITH FORMALDEHYDE GAS IN THE CITY HOSPITAL AT CHARLOTTENBURG, BERLIN.

BY A. W. FAIRBANKS, M.D., BOSTON, WITH REMARKS BY PROF. E. GRAWITZ, M.D., BERLIN.

The following experiments in the disinfection of rooms by means of formaldehyde gas were instituted at the instance of Prof. Ernst Grawitz, of the City Hospital at Charlottenburg, and conducted under his supervision. The object was to determine the actual value of that form of formaldehyde recently placed upon the market by the firm of E. Schering as a practical disinfectant.

This form of formaldehyde differs from that hitherto in use, in that we have to do here with the polymerized state, the so-called trioxymethylene.

FIRST EXPERIMENT.

The first investigations with this substance were made by Aronson,[1] who found this polymerized formaldehyde practically a non-poisonous body. According to the same investigator, this substance may be changed, by the action of the hot gases of combustion, from the solid state of polymerization to a gaseous condition of non-polymerized formaldehyde, and retained in this condition by the moisture incident to the combustion.

This polymerized formaldehyde as used in these experiments is put up by the above-named firm in the convenient form of tablets, each containing one gramme.

The apparatus employed is one of exceeding simplicity. It consists of a sheet-iron cylinder (*d*) resting upon three legs. In the upper portion, for the reception of the tablets, is placed a cup-like receptacle (*c*), the upper third of which is pierced by apertures covered by wire netting (*n*). Beneath the structure is placed an alcohol lamp with several burners. The formaldehyde in *c*, subjected to the hot gases of combustion from the lamp, passes off in a gaseous state. These gases of combustion pass through the perforations *n*, and mix with the formaldehyde gas, supplying to it the amount of moisture necessary to prevent its return to a solid state[2] (see diagram).

The apartment employed was an ordinary living-room, containing 96.6 cubic metres air space. Small pieces of woollen and linen cloth, of a size conveniently introduced into the culture tubes, were thoroughly soaked in bouillon cultures of the bacteria, were then dried *in vacuo*, and exposed in different parts of the room.[3] Of these pieces, some were openly exposed, others enclosed between layers of cloth.

(1) Pieces infected with anthrax, diphtheria, typhoid and staphylococci:

Anthrax: Freely exposed on the upper, middle and lower portion of a window curtain; freely exposed on the floor; between two layers of cloth, on the floor; between two mattresses on the floor.

Typhoid: Freely exposed on a table; between two layers of cloth on the floor.

Diphtheria: Freely exposed, some on a table, others on the floor.

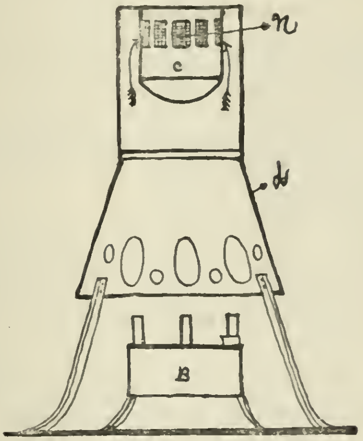
Staphylococci: Between two layers of cloth, about two metres above the floor.

(2) Besides these pieces of infected linen and woollen there were also placed in the room two thickly grown agar cultures of anthrax, wrapped in many folds of linen, the one at a height of two metres, the other on the floor. Another culture of anthrax was placed openly in a glass plate on the floor. Silk threads were infected with the same bacillus and placed on glass plates, one as near as possible to the disinfector, another as far as possible away.

(3) Two glasses of sputum, which contained tubercle bacilli in large numbers, were dried in the vacuum. Of these one was placed in the room, the other was retained for control.

(4) From a pile of horse-hair, from an old mattress, that lay by chance in a corner of the room, several cultures were made just before the door was closed.

It may here be noted that these cultures showed profuse growth of a large bacillus, of cocci and sarcini.



The doors and windows were closed and all cracks stopped with cotton wool, over which were pasted thick strips of heavy paper. The disinfector was now placed in the middle of the apartment, with 95 tablets in the receptacle, a proportion of approximately one gramme of formaldehyde for every cubic metre of air space. The lamp was now lighted and the entrance door of the room closed likewise, in the manner above described.

It should be here mentioned that from each of the infected objects cultures for purposes of control, made just before closing the room, showed active growth.

Shortly before the opening of the room, at the end of thirty hours, that portion of the tubercular sputum that had been retained as control was mixed with sterile water and injected into the abdominal cavity of a guinea-pig (weight 490 grammes).

At the end of about thirty hours the room was opened. Upon entering, a sharply irritating effect of the gas upon the nasal and conjunctival membrane was experienced. This irritation, although at first very severe, soon ceased, and it was perfectly possible to remain in the room for two hours with doors and windows still tightly closed. Upon leaving the room later, and again re-entering it, after some moments in the clear air, the same irritation was noticed, only again to diminish as the stay within was prolonged. The tablets were consumed, a few ashes only remaining in the receptacle.

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[1] Hans Aronson: Ueber eine neue Methode zur Desinfection von grosseren Raumen mittels Formalin. Zeitschr. f. Hyg. u. Infectionskrankheiten, Bd. xxv, 1897.

[2] Loc. cit.

[3] The use of such infected pieces of woollen and linen would seem to correspond more nearly to the conditions encountered in practical disinfection than the use of silk threads.

Each infected piece of cloth was now placed in a separate sterile glass containing a sterilized two-per-cent. solution of ammonia, and allowed to remain for a few moments in order to remove any traces of formaldehyde, possibly present in the pieces, that might hinder the growth of organisms not killed during the exposure. The pieces were then placed in bouillon and upon agar, and the tubes left in the incubator at a temperature of 37° C. The same was also done with cultures from anthrax, agar *g*, *h*, *i*.

The results were the following:

(1) Anthrax *a*, *b*, *c*, *d*, which were the pieces openly exposed at different heights in the room, remained sterile at the end of a week's time.

Although the bouillon remained sterile at the end of this period, yet a considerable quantity from the tube *c* was injected into a white mouse. On the following morning this mouse was found perfectly well, while another mouse that had been injected with bouillon from one of the control tubes was found dead. In the blood of the latter mouse anthrax bacilli were microscopically demonstrated in large numbers, and cultures from the same gave vigorous growth of anthrax in eighteen hours. At the end of two days the mouse that had been injected with bouillon *c*, and had remained without sign of infection, was killed. Microscopical preparations from the blood showed no trace of anthrax, and cultures from the same remained sterile after a week's time.

Bouillon *e*, containing the pieces that had lain enclosed between two layers of cloth on the floor, also remained sterile after a week's time, and, injected into a mouse at the end of this period, produced absolutely no effect. Bouillon *f*, containing pieces that had lain between mattresses, showed, at the end of twenty hours, profuse growth of typical anthrax bacilli.

Agar *g* and *h*, upon which cultures from the thick agar growths of anthrax that were wrapped in many folds of linen were made, showed after twenty hours also profuse growth of anthrax. A portion of the cultures from agar *h*, mixed with bouillon and injected into a mouse, caused death in sixty hours (a decidedly diminished virulence). From the blood of this mouse cultures of typical bacilli were obtained. Agar *i*, infected from the thick agar culture freely exposed to the formaldehyde gas, showed but a slight growth at the end of twenty-four hours, and at the end of three days the growth was not profuse. Agar *j* and bouillon *k*, containing the silk threads, remained sterile.

Diphtheria. — Bouillon *a* and *b*, containing the pieces openly exposed, showed no growth after a week.

Typhoid. — Bouillon *a*, with the piece that had been openly exposed and bouillon *b*, with the piece that was placed between two strips of cloth, both failed to show growth of typhoid. (Bouillon *b* was contaminated by a surface growth of a bacillus from the air. The under stratum of the bouillon was clear.)

Staphylococci. — Bouillon *a* (openly exposed pieces) also was sterile at the end of a week.[4]

(2) *The tubercular sputum* that had been exposed to the formaldehyde was (as in the case of the control sputum) mixed with sterile water, and a large syringeful was injected into the abdominal cavity of a guinea-pig (weight 520 grammes).

(3) Several tubes of bouillon, containing portions of the horse-hair from the centre of the pile above mentioned, taken immediately after opening the room, remained absolutely sterile at the end of three weeks.

Cultures that were made (immediately after entering the room) from dust from one corner of the apartment produced in twenty-four hours profuse growth of a small spore-forming bacillus (not pathogenic for white mice).

In the desire to prove that the solution of ammonia in which the infected pieces were washed had no absolute inhibitory influence on bacterial growth, pieces of infected cloth that had not been exposed to the formaldehyde were washed in the same two-per-cent. ammonia solution, and placed in agar and bouillon tubes. These tubes showed, without exception, profuse growth of the respective bacteria in twenty-four hours.

SECOND EXPERIMENT.

In this instance were used anthrax spores obtained from a culture from the blood of a mouse, dead in twenty hours after infection; also diphtheria, typhoid and staphylococcus albus.

As the results of the preceding experiment were satisfactory for superficial disinfection of the bacteria employed, most of the infected pieces were placed in the following trial between layers of cloth or between mattresses.

Owing to the fact that in the previous trial growth was obtained from cultures from the dust from a corner of the room, after its exposure to the formaldehyde, pieces infected with anthrax spores, diphtheria and typhoid were placed in the same corner, as far as possible from the disinfector. Control cultures in every case were made, and showed profuse growth of the respective bacteria.

In order to determine the effect of the gas upon various articles, there were placed in the room pieces of fine cloth, soft and hard rubber, brass, gold, polished wood, etc.

To determine the effect on the living organism several white mice and a rabbit were confined in the room during the time of exposure. The dark curtains over the windows were left open in the first trial, but were drawn in the following. At the end of twenty-five hours the room was opened. The animals were found lively and, although carefully examined, showed themselves in no way different from such as had not been so exposed. Especially noteworthy is the fact that in no case was conjunctivitis present, and I may here mention that, in my own case, although the irritation of the gas was quite severe for the first few moments after entering the apartment, it soon subsided, and I was able, without any discomfort, to remain over an hour with doors and windows closed. No conjunctivitis ensued.

Although it was proven in the first experiment that the washing of the pieces in a solution of ammonia of a strength of two per cent. did not prevent the growth of the bacteria, yet in this case only a one-per-cent. solution was used, the pieces were allowed to remain therein somewhat longer than before, and were afterwards washed in sterilized water. From all of the pieces a portion was placed in bouillon, another portion on agar. The tubes were, as before, kept in the incubator, at a temperature of 37° C. The arrangement of the pieces, their places in the room, and the results, may perhaps be better shown in the following table. The concentration of the formaldehyde in this trial was approximately one and one-half grammes per cubic metre air space, that is, 145 tablets (Table I).

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[4] All of these tubes were observed for about three weeks. It may be said here that in this, as in the experiments to follow, several of each of the different classes of exposed pieces were placed in different tubes; that by this procedure each test was therefore in reality repeated two or more times, and in cases of contamination other tubes could be relied upon.

In summing up the above results we find that the pieces infected with the anthrax (spores), when transferred to bouillon and agar, gave no evidence of containing living germs at the end of a week's time in the cases where the formaldehyde gas had free or comparatively easy access to the infected pieces, that is, where the pieces lay openly exposed or between two layers of cloth (anthrax *a′* and *b′*).

TABLE I.

Bacteria.	Result of Control Cultures.	Position of the Infected Pieces.	Result after 25 Hours' Exposure to Formaldehyde. Cultures in Bouillon and on Agar.
Anthrax (spores)			
a′	Profuse growth in 24 hours.	Openly exposed in the above-mentioned corner.	Bouillon: No growth in 7 days.
b′	“ “	Between two layers of cloth on a table.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
c′	“ “	Between two mattresses.	Bouillon: Growth of typical bacilli in 48 hours. Agar: Growth of typical bacilli in 48 hours.
Diphtheria			
a′	“ “	Openly exposed in the above-mentioned corner.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
b′	“ “	Between two layers of cloth on a table.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
c′	“ “	Between two mattresses.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
Typhoid			
a′	“ “	Openly exposed in the above-mentioned corner.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
b′	“ “	Between two layers of cloth on a table.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
c′	“ “	Between two mattresses.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
Staphylococcus (albus)			
a′	“ “	Between two layers of cloth on the floor.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.
b′	“ “	Between two mattresses.	Bouillon: No growth in 7 days. Agar: No growth in 7 days.

At the end of a week's time about a cubic centimetre of the bouillon in each of these cases was injected into the peritoneal cavity of white mice. The pieces on agar were washed in bouillon, and this bouillon was also injected into mice in a like manner. These mice showed absolutely no sign of infection at any time, and were, without exception, living two weeks later. It would appear, therefore, as if there could have been on these pieces not only no virulent organisms, but also no bacilli or spores capable of germination.

In the case of anthrax *c′*, on the other hand, profuse growths of typical anthrax bacilli were present at the end of forty-eight hours both in bouillon and on agar. As will be noticed, these were the pieces that had lain between mattresses.

In the case of diphtheria no trace of these bacilli could be discovered after ten days in any of the tubes. The same was also the case with typhoid and staphylococci. The tube containing typhoid *c′* was contaminated and this fact may possibly have affected the further growth of the typhoid bacillus. This was so only in the bouillon; the agar tube remained absolutely sterile.

From the bouillon several agar and gelatine "plate cultures" were made in the effort to isolate any bacilli of typhoid that might be present, but failed to indicate any trace of this organism.

Some of the bouillon tubes were contaminated by a large moving bacillus, with rounded ends. In every case where this occurred — in five tubes, including the typhoid above mentioned — a considerable amount of the bouillon was injected into mice. The bacillus (bacillus subtilis?) proved non-pathogenic for these animals, and they were all living, without sign of infection, two weeks later.

It is of interest to note that a culture made from the dust in one corner of the room, immediately after opening the room, showed profuse growth of the same small spore-forming bacillus, apparently, as that found in the first experiment. It produced no effect when injected into white mice; for these animals, therefore, non-pathogenic.

(To be continued.)

MEDICAL TESTIMONY ON INSANITY AS AN EXCUSE FOR CRIME; REPORT OF A CASE.[1]

BY JAY PERKINS, M.D., PROVIDENCE, R. I.

Mr. President and Gentlemen of the Massachusetts Medico-Legal Society: — It is, perhaps, presumption on my part to bring before you the subject which I have to-day, for I fully realize that I am not an alienist and am very poorly equipped to discuss questions relating to insanity. I come before you simply as a student of legal medicine, but in legal medicine, as I am by experience fast learning, the question of sanity and insanity is becoming of more and more importance, and unless we who are doing general medico-legal work are willing to bow submissively to the expert alienist, we must consider the subject by ourselves, and it is in this attitude that I present this case and discussion before you to-day.

Much has been written and said as to the medical-expert witness, and I will be brief in giving my opinion of him and his attitude towards the case. In the last quarter of a century the science of medicine has in many ways made a phenomenal advance, and things which twenty-five years ago would have been looked upon as wholly fanciful are to-day undisputed and form part of the basis of all our work. This is true of many of the theories of the past; they are now facts; but this is not true of all of the theories of the past, many of which are now never mentioned. In medical discussions in society meetings, it is well to give all new and advanced ideas, as there they will be discussed by medical men and their truth or falsity can be properly estimated; but in courts of law, where often the only hope for the lawyer for the defence is to make out a disagreement of medical experts, we should be more conservative. Theories or suspicions, especially when advanced by a man of reputation as facts, may, and often do, give to a jury sufficient cause for a reasonable doubt, and thus do much harm to the cause of justice and destroy confidence in medical witnesses.

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[1] Read before the Massachusetts Medico-Legal Society, Oct. 4, 1899

The aid of law makers has been invoked to bring the medical witness into better standing by giving the court the power to appoint experts. We have a very good law of this kind in Rhode Island, but you cannot make a set of experts into a jury, as you would be doing if you made their decisions final. They must be cross-examined and this cross-examination will bring out differences unless they are conservative and hold only to that which is well known. Then, too, you cannot prevent the lawyer from putting on independent medical witnesses. So this matter cannot be fully regulated by law any more than you can reform a drunkard by law. Laws may help, but the real reform must come from the physicians themselves, and the medical witness should in no sense be a partisan or advocate.

In the trial which I am about to report the prosecution had three, and the defence five, physicians, for the most part well-known and eminent men in the profession, who were advising the attorneys as to what questions to ask. As to the propriety of this, I am in doubt. How far does our duty to the case go in this respect and where does our professional honor demand that we desist? Especially with us as medical examiners: what is our proper attitude to the prosecution?

There is no class of cases in which all that has been said is truer than where there is the question of sanity. Psychology is an extremely complex science, and when one of Massachusetts' leading psychologists, whose writings are frequently quoted, goes before the Legislature and prevents the passage of a law which limits the substitution of ignorance and superstition for knowledge and science, and does it through reasoning from his psychological tenets, are not we, who are trying to do scientific work, justified in asking for some good proof and evidence of these tenets and the deductions therefrom, instead of blindly accepting them?

On the night of February 12, 1899, I was called, in my capacity as medical examiner, to the house of Mr. Amos D. Palmer, in Cranston, R. I. The house is just beyond the city line, but the examiner for that district could not be found. I arrived at the house at 11.30 P. M., and then learned that Mr. Palmer and his wife had been celebrating the eighth anniversary of their marriage on that day. Four guests, two ladies and two gentlemen, had been present. At about five o'clock the gentlemen went to the billiard-room, where they remained until 8 P. M., when they went down stairs, and soon after the guests went home.

The history of the case for the next few hours I give as I learned it that night and from notes taken at the time the statements were made to me by the servants, and not just as it was brought out at the trial, as I believe the former to be the more accurate.

After the guests were gone, Mr. Palmer went down into the basement, as he said, to fix the furnace; when he came up he and Mrs. Palmer had a light lunch, during which they had a quarrel concerning his going down to fix the furnace, Mrs. Palmer claiming that what he went down for was to get some liquor, and that he should let John take care of the furnace. The cook told me that he was evidently under the influence of liquor at the time they had the lunch. (At the time of the trial the cook could not remember of any such condition.)

Mr. and Mrs. Palmer went upstairs about nine o'clock. At 9.15 the two servants, Mary Farrell, the cook, and Margaret Sullivan, the second girl, were in the room over Mr. Palmer's and heard sounds like "knocking," and heard Mrs. Palmer scream three times. The cook went downstairs to the first floor, and walking through the rooms of that floor heard Mr. Palmer talking, but did not know anything that he was saying. She went back to her room again, and in about ten minutes Mr. Palmer called to her; "Mary," and upon her answering, said, "Did you hear that?" She asked, "What was it?" and he said, "I fear I have killed her." When she found that Mrs. Palmer was dead, she said, "Oh, Mr. Palmer, what have you done?" He replied, "She tried to kill me first," and then said, "Oh, what have I done; what have I done?" Mrs. Palmer was then lying with her head on a hassock. Both Mr. and Mrs. Palmer were dressed in night clothes and blanket wraps.

The cook then called the coachman, John Devine. When he reached Mr. Palmer's room, Palmer was naked, having taken off his night-dress and was apparently preparing to dress himself. At the time there was nothing said as to any frenzied condition, though the counsel tried to draw this out at the time of the trial. He did say, however, that Palmer went to a drawer and took out a revolver and wanted to load it in order to kill himself, but was restrained by his coachman. There were two revolvers given to me after my arrival at the house; one contained empty shells, five of 32 calibre, and presented evidence of having been recently fired; the other was empty and had not been recently fired, and, as was afterwards shown, it was not in good working order. He kept these in different places, and had gotten the loaded one first and to use in shooting his wife.

Palmer then telephoned to his physician, Dr. Carr, and told him that he had shot his wife. Dr. Carr was not able to go, and asked Dr. George D. Hersey to go in his place. Dr. Hersey went out, arriving there at a little before eleven, and about two hours after the shooting. Palmer was then fully dressed and met him on the landing of the stairs. After Dr. Hersey found that Mrs. Palmer was dead he told Palmer so, and he then became somewhat excited and again said he wanted to kill himself. He repeatedly stated his desire to commit suicide.

I arrived at the house at about 11.30, and saw Palmer a moment then, as he was sitting quietly on a sofa with Dr. Hersey. I went into the room where his wife's body lay and made an examination of it. Dr. Hersey came in with me, but in a few moments we heard scuffling, and the coachman said Palmer was trying to kill himself by taking some poison. Dr. Hersey then stayed in the room with him.

After examining the body, I telephoned to the chief of police and went in and talked to Mr. Palmer and was then with him much of the time for a couple of hours. His breath smelled strongly of liquor, and upon questioning him as to what had occurred he claimed that he could remember nothing from the time he and his guests were in the billiard room until after Dr. Hersey arrived. However, he certainly seemed to realize what he had done and repeatedy exclaimed, "Why did I do it; why did I do it? I couldn't have done it." At no time, however, did he seem to doubt that he had killed his wife. When we stopped talking, he would walk across the floor with his head slightly bowed and an anxious expression upon his face and then say, "Why did I do it; why did I do it?" Upon questioning him as to why he did it, he said that all that he could lay it to was the whiskey and beer that he had drunk; that he had had four drinks of Mount Vernon whiskey and several bottles of beer; he ought to have known better than to have drunk that whiskey, "as Mount Vernon whiskey always did him up." He told me that he drank the whiskey when he went down to fix the furnace, and drank the beer in the billiard-room. He said that he and his wife lived happily together; that "they had their little quarrels as everybody does," but that they made up and were happy again, and he could remember of no quarrel this night. All of the time he talked rationally, but would have, apparently, great remorse when we stopped talking. I saw nothing, however, to indicate any frenzied condition and certainly no stupor or mental abstraction. It was impossible to get his mind off from what he had done. If we talked about anything else, the moment we stopped talking his mind went back at once to the shooting. He said that he was a murderer; that he would give himself up to the police. He said this before, as well as after my arrival.

When the police arrived and rang the bell, before he saw them he said, "There comes the police; it will be a charge of murder."

At about eleven o'clock, Dr. Hersey gave him 30 grains of bromide of soda and at twelve o'clock another 30 grains. He became somewhat quieter and calmer after one o'clock; though, as previously stated, there was nothing approaching a frenzied condition — certainly not after my arrival.

Between four and five o'clock, when in the presence of the officers, he vomited, the vomitus smelling strongly of liquor.

At about the time I notified the police of the murder, Dr. Hersey suggested to Mr. Palmer that it would be well perhaps for him to notify his lawyer of what had taken place. Mr. Palmer told him his lawyer's name and Dr. Hersey telephoned.

It was an intensely stormy night and the officers stayed at the house all night, taking Mr. Palmer to the court the next morning. He had slept none, and ate no breakfast. He was somewhat nervous at the court, and at the suggestion of his lawyer pleaded "Not guilty," but on leaving the court house for the prison, he said, "My God, I am a murderer."

The next morning I turned the case over to the medical examiner of that district, Dr. A. H. Longfellow, and he made an autopsy, at which I was present. There were six bullet wounds, five of entrance and one of exit. One bullet entered the left arm just above the wrist on the back side and there was a corresponding wound of exit higher up on the inside of the arm, and the bullet was found imbedded in the sleeve of the night-dress. There was a bullet wound at the lower border of the left nipple; another three-quarters of an inch lower and a little to the outside; another three inches diagonally below and outside the nipple, and another three inches above the nipple. One bullet went straight in, passing through the heart and the root of the right lung. The others had a downward tendency, some more, some less; but all passed through some part of the stomach. One bullet was imbedded in the left loin. There were corresponding openings, about which the loose wool was much burned, in her blanket wrap.

By subsequent examinations, I found that the revolver was held at a distance of not less than five and not more than ten inches from the blanket wrap, and from the relations of the holes in the burned areas I determined that if the revolver was held as is usual, one of the shots was fired with body erect and the others as it was falling. This was determined by the holes being on the trigger side of the burn.

There was no disarrangement of the furniture or anything about the rooms which would indicate any struggle. Dr. Hersey and I remained at the house all night, and neither of us had any doubt but that Mr. Palmer's condition was due to alcoholism and remorse.

Now let us look briefly at Mr. Palmer's earlier life so far as it is known. Most of those associated with him, and all associated with him intimately, are dead. His father died when he was about eighteen months of age, and from that time until he was a man grown he was almost exclusively with his mother or nurse until the death of the former in 1890. Their family physician during his childhood and his nurse are also dead, so that his early history is not very definite. His mother never sent him to school and never allowed him out of her sight, or that of the nurse, during his childhood. He never associated to any extent with any other boys, as they did not enjoy his company enough to come to him, and his mother would not let him go from home. There is no doubt but that there was some good reason for this. The defense claimed that the reason was, attacks of epilepsy. The evidence on this point was not over strong, but some light attacks of epilepsy were fairly established, the best evidence being that of a barber. The evidence does show that his mind was not fully developed and there is other evidence which was not introduced into court which shows a marked mental deficiency, but it seems to me that there is still a chance to question whether the attacks introduced were really epileptic or whether they were merely manifestations of an undeveloped mind. The evidence was skilfully handled with a view of showing that he had epileptic seizures. All of the witnesses for the prosecution, excepting those on the case officially, had been skilfully brought into an extremely sympathetic attitude to the prisoner and were practically witnesses for the defence.

When sixteen years of age he was in Florida with his mother and there began to drink liquors, which habit he kept up to the present time. About two years later, after a summer at Narragansett Pier, he had an attack of delirium tremens, and drank very hard until within about three years of the homicide, during which latter interval he drank less, but still considerably.

In 1891 he married without his mother's knowledge, a divorced woman whom he had known intimately for several years. It was at about this time that his mother died and he now passed from his mother's influence to that of his wife. He loved her passionately, and, as I think is usual when the higher faculties of the mind are dwarfed, the emotions and animal passions stood out more strongly. As had the mother, so now the wife possessed the stronger mind, and when he was not under the influence of liquor she ruled his weaker mind easily. He was, however, at times jealous of her and apparently not without cause. They always had quarrels, and about five years ago he had shot at her, the bullet striking the bed. One of the servants reluctantly acknowledged she had heard him threaten "to throw her down stairs and break her neck."

In recent years the only thing that they could bring up to show a tendency to epilepsy was his falling off from his wheel one day while out bicycling with his wife, and at another time while riding in a carriage he had a severe headache, becoming partially unconscious, but this evidence was very shaky.

When Mr. Palmer was on the stand he claimed that while in jail he woke up several mornings with his tongue sore and swollen and bloody foam in his mouth, which was, however, never brought to the attention of the physician, and in fact, his lawyers would not allow him to see the physician of the State institutions whom the State desired to have examine him.

While on the stand Palmer answered the questions more intelligently than several of the other witnesses and was attentive throughout the trial. He claimed that he could not remember when the guests went home the night of the shooting; he could remember bringing the beer up to the billiard-room but could not remember drinking any of it (though that night he remembered it distinctly), and the next thing he could remember was, "I remember bending over my wife, who lay on the floor in my bedroom and remember lifting her head on the hassock and exclaiming, 'My God, she is not dead!'" This all faded out like a dream, and the next thing he remembered was being in the sitting-room and two gentlemen coming in, "one of whom must have been a doctor, because he gave me something bitter to take," and after a long time two other men came in. He also remembered his dog coming in and lapping his hands and face, and later of having a cup of coffee which made him sick. He claimed that the first that he realized that anything was wrong was "when the officers were there and one of them kept dogging him around"; then he recalled going to court and to jail; all the rest he said was a blank, yet he remembered that his wife had on a light blanket wrapper, as brought out on the cross-examination, though he claimed in answering his lawyer's questions that he could not remember his wife's face.

In relation to attacks of epilepsy, he testified with a good deal of minuteness to attacks which he had had. The first he could remember were when he was eleven or twelve years of age; they came on with an "all-gone feeling and a queer feeling in the head," and he lost consciousness. After coming out of the spells he would be in a kind of stupor. He could remember the time he fell from his bicycle; he was not feeling well in the morning, ate little breakfast, and started on the ride soon after breakfast. He did not at any time lose consciousness, but felt dizzy and fell from his wheel, but with his wife's assistance he got out to one side of the road and rested for about half an hour, after which they went home slowly, he feeling "used up."

He remembered having delirium tremens and getting so drunk he could not walk steadily on a number of occasions; that sometimes the boys put him to bed. One time after drinking champagne he was taken to the City Hotel and put to bed, not knowing where he was when he awoke the next morning, but this knowledge came to him gradually.

The physician who attended him in recent years knew nothing of any epileptic attacks; he had attended him after some of his drinking spells and told him as a means of frightening him, that if he did not stop drinking they might have to put him in an asylum.

As before stated, all of the witnesses, even those for the prosecution, had been brought to a very marked degree of sympathy for the prisoner, and this was so evident in the change in the testimony of those with whom I talked the night of the shooting, that I could not place much reliance on what most of the witnesses had to say as to details. One of the witnesses testified that he saw him have spells when a boy and that he frothed at the mouth. Under cross-examination, however, he acknowledged that he had not thought of the frothing until the attorney for the defence had questioned him on that point at some time before the trial and fifteen to twenty years after the occurrence. This sympathy for the prisoner extended to the relatives of the dead woman, one of whom, a sister, kissed Palmer one day in the court-room. The servants were all kept at the house on good pay until after the trial, and the reputation of his wife gave him much sympathy from the public in general. The most of the evidence put in by the defence was of little real value. There was one witness, a barber, however, who testified that he had seen Palmer in attacks of epilepsy while getting his hair cut. On one of these occasions his eyes bulged out, he became purple in the face, grew rigid and cried out, "Oh, oh, oh!" His mother then took him, and the hair-cutting was completed two or three days later. The barber then testified that Palmer would sometimes take up some of the hair that had been cut off and say, "Isn't that funny hair; look at it jump; it is alive"; and sometimes would complain of the furniture moving about the room. Also during some of the attacks which Palmer had while his hair was being cut, and in which he lost consciousness, he was sitting in a straight-back chair and yet he never fell out of the chair.

I believe that what I have said will give you a fair idea of the case and the character and substance of the testimony. The defence had not put in all of its testimony, when it was agreed that the experts on the case should confer as to the prisoner's sanity or insanity. This they did, and at the next session of the court, the following statement was presented:

Willard B. Tanner, Esq., *Attorney-General:*

Dear Sir, — We, the undersigned, having examined Amos D. Palmer as to his mental condition, with reference to the indictment against him for the killing of his wife on the night of February 12, 1899, hereby report that we jointly agree in the opinion that he is the subject of mental disease, and that the act was committed under the influence of that disease; and, in our opinion, is therefore not responsible for his homicidal act and that proper measures

should be taken to protect him and the public from further consequences of his mental disease. Signed: P. M. Wise, C. P. Bancroft, G. F. Keene (experts for the State) G. F. Jelly, Edward Coles, Walter Channing, W. H. Palmer and F. H. Peckham, Jr. (experts for the defence).

The prosecution and the defence then both asked that the jury be instructed to bring in a verdict, "Not guilty by reason of insanity." The court, however, stated that it could not direct the verdict, and suggested that an expert be put on the stand from each side that the jury might bring in a verdict from evidence.

All of the experts were placed upon the stand; their evidence was in conformity with the statement made in writing by all, excepting that the defence laid stress upon the epileptic element, Dr. Channing going so far as to say that "he was probably in an epileptic condition at the time of the homicide."

There was evidence presented to the experts showing the weak mind, which was not of a character to be presented in open court, but I am informed there was nothing of any weight as to epilepsy; all agreed that the nature of his mental affliction was imbecility, and in this I certainly agree; and I approve fully the finding of the jury, "Not guilty by reason of insanity."

Dr. Bancroft testified, in part, that Palmer possessed a defective will power and at the time he committed the act he was unconscious. What alcohol he took may have aggravated this condition, but under it all lay the fact of his imperfect mental condition; that he was a congenital imbecile and that the disease was incurable and progressive. It seems to me that this covers the case and is all that is justified by the evidence when carefully sifted and considered.

In all of our work I know that it is hard not to let our judgment be swayed by our sympathies and our sympathies go to those whom we are trying to help, and though it is not always easy to form or express just judgments, if there is any one in the world who needs to be just and fair, it is the medical expert, yet we all know to what depths he has fallen in many cases in the opinion of the courts and his brother physicians and the people in general. Much of this feeling is certainly unjust, but not all of it. It is impossible for the courts or the laity to keep abreast of the advance in medical knowledge. Law is built upon precedent; medicine is always reaching out towards the unknown, and at each advance tries to make use of all it can reach, and each day sets new standards, which unfortunately do not always bear up under the weight of new structures. They have not been properly tested, and when used, break under the burdens they should bear if sound, or perhaps break because they are not made for the burdens which are placed upon them. It seems to me that this is the condition of expert testimony on "insanity as an excuse for crime" to-day. The alienist has given us much new material in his line, but is he not sometimes too much flushed with his successes and not calm enough in his opinion? There are gynecologists who can find but few healthy ovaries, and but few ovaries are removed post mortem which are absolutely normal, yet every woman should not have ovariotomy performed because she has a pain in the side or back. There are a great many persons who do not come up to the physical standard set by Dr. Sargent as the normal, and yet they are able to do good work, though some will not work. There are but few minds which upon careful examination are at the standard of perfection, yet all these are not insane even if they do what some people consider insane things. In judging of a person in a doubtful case many things must be considered, such as his education, environment, habits, efforts at self-control, and in fact his whole life.

Insanity is now the defence resorted to in all cases where there is no other, and an able counsel can do much to establish insanity in many cases where there is no insanity, the enthusiastic and sympathetic expert helping him. In the case I have related the experts were particularly eminent and honest. Those from Massachusetts you all know better than I, and I know them well by reputation and know nothing against them in any way, and for the very reason of my opinion of them, I have studied this case and their evidence and acts, yet I cannot come to agree with them in all they have said. Was this man Palmer in an epileptic condition at the time of the homicide? I will not review the case farther than to recall a few features. He had been drinking a strong liquor which he said was "always too much for him." He knew enough to know where to go for the loaded revolver first, and later for the other. Ten minutes after he had done the shooting, he told the servants that he had killed his wife, but that she had tried to kill him first. Have you known of an epileptic murderer pleading self-defence? Then he wanted to commit suicide. Do epileptics commit suicide while still under the influence of the seizure? He and his wife had a quarrel about his drinking but a short time before the shooting. He had shot at her before and had threatened her. There was no stupor, no absolute forgetfulness. He remembered bringing beer into the billiard-room, he remembered putting his wife's head upon the hassock after killing her, he remembered the doctor and other men coming in, he remembered his dog, the coffee, leaving the house, and yet he could not remember the most of what had taken place that night. At no time after the shooting could his mind be kept from it, and if drawn away, would go back almost at once. He could talk rationally during most of the time he claimed everything was a blank. His breath smelled strongly of liquor and he vomited liquor. He had a mind which was congenitally weak. Now, gentlemen, granting even that he had epileptic attacks during childhood, do these things indicate epileptic seizures, or an epileptic condition at the time of the crime, or was he in a subconscious condition due to the action of alcohol on the weak mind?

It is true that a person may have attacks of epilepsy only few in number and very slight, and then be free from it for a long time; then in an epileptic condition commit murder of which he is wholly unconscious and cannot believe. Probably men have been hanged for murder while protesting their innocence though guilty, because the murder was done under the epileptic influence, but is this a sufficient reason for saying that a murder was done during an epileptic condition because the man has had an epileptic seizure at some time during his life? There is no reason why an epileptic may not get under the influence of drink and do as others have done who never had an epileptic seizure. I know that cases are reported where a man has had but one or two epileptic seizures during his life and has committed murder during one of these, but is it safe to draw marked inferences from this and to be ready to support the belief of epileptic homicide in all cases where the person has had an epileptic seizure earlier in life, unless all the indications point that way? It is easier for a man who has shown no signs of insanity for some years to get out of an asylum than for a murderer to get out of prison. When a man is committed to an asylum he is committed until cured, and when his sanity is proved he must be released, and, in case of murder, cannot be retried. If a man is committed to prison, there are provisions, at least in Rhode Island, by which if insane he can be transferred to the insane asylum. It is not, however, the effect in an individual case which I would oppose, but the principle of being too radical in expressing opinions as to insanity, because of the effect thus produced upon the reputation of the medical witnesses in the opinion of the court, bar and jury, and the cause of justice as a whole.

In this case time will probably show whether Palmer is an epileptic or not. The State wisely intervened and said that he must remain in the State and he is now in Butler Hospital. The records of that institution as yet show no epileptiform attacks, and I have had as a patient a man who as an attendant had the care of him for a time, and who tells me that the only thing he noticed as different from other men was a silly laugh; this laugh was used at the trial as an evidence of an unsound mind.

As a result of imperfect action of cortical areas, we can readily conceive that unrestrained reflex psychical activity may take the place of intelligent thought, that normal waking consciousness and memory may both be absent, and do we not see just this kind of automatism in somnambulism, in the delirium of fevers, in the peculiar mental state attendant on poisoning by cannabis indica, alcohol, and occasionally profound nervous shock? In this case I believe that the loss of consciousness was due to alcoholism and not to epilepsy.

Clevenger[2] says: "It is a common plea of inebriates who have been arrested for all sorts of criminal acts, that they have no recollection of what they have done, and it is still more common for an inebriate to recover from a spell and to experience great mortification over what he has done, with no recollection of his disgraceful performance. The resemblance of such phenomena to epileptic phases is very close, and it is to be remembered that alcoholism may be attended with epilepsy, including petit mal and convulsions, and in the relation of cause and effect. Sometimes a hazy recollection of drunken acts is preserved afterwards, or here and there a more or less distinct memory of things spots the debauch."

Dr. C. P. Bancroft has reported four cases of "subconsciousness" where there was no reason to suspect epilepsy, and others are on record.

These facts, it seems to me, ought to caution us to be conservative in our opinions before the courts, and I believe that thereby the standing of the medical witness would be raised.

The following is a stenographer's copy of the testimony of the experts as given on the witness-stand:

Dr. George F. Jelly:

I have seen Amos D. Palmer at the jail and at the court. I have made six examinations of Mr. Palmer at the jail, the first time being thirteen days after the homicide, on the 25th day of February, this year. I have no doubt, upon the examination which I made at the jail, from what I have seen and heard in court of him and his testimony, from the evidence that has been given here in court, and from frequent visits to the prisoner since he has been confined in this house, I have no question that Amos D. Palmer is a man of unsound mind, that he was of unsound mind and beyond his control in mental disease at the time of the homicide; that he is wholly oblivious as to this crime by reason of his mental disease; that he is in that condition where he needs care and restraint for the treatment of his mental disease. I have no doubt also that he is absolutely honest in everything he has told you. I do not think he is capable, by reason of defective mental process, of conceiving or concocting the plan. I do not think he could combine circumstances which would enable him to make a plan of defence. I think he is telling the truth when he says it is out of his mind, and that he has no memory of the event or of his wife's features; it is absolutely true, so far as I can judge. I think he was very fond of his wife. Frequently, as a child, he has shed tears in speaking of her, and I have no doubt if to-day he could recall the crime he would not attempt to conceal it. And for that reason, I believe he should be treated as a defective, diseased man, put under care, and for himself and for the community he should be treated with the hope of doing him good and protecting him. I do not think that Mr. Palmer will ever be a strong man mentally. I do not think he has ever been. I think, under good care and treatment, he would learn better control than he has now. I do not think he will ever be a strong mind. I am afraid the disease is progressive.

Dr. Peter M. Wise:

I consider that Amos D. Palmer at the time of the homicide was unconscious of the act, that his will was impaired by reason of his mental disease, and that he was wholly irresponsible for the act. I have had well-attested facts presented to me that have not been already presented in evidence. In respect to the prisoner's mental condition, I consider the disease an incurable disease, and one very likely to progress.

Dr. Charles P. Bancroft:

I think Amos D. Palmer was not responsible for his act at the time he committed it. It is my opinion that he was in a state of unconsciousness, and that he possessed defective will power, imperfect control, and that he should be in no wise held accountable for his act at that time. I think what alcohol he took may very likely have had the effect of aggravating his already weakened mental condition, but underneath all is the fact of his imperfect mental condition, which, in my mind, dates from birth. I should say that he was a congenital imbecile. I am sorry to say that I think the disease is incurable and progressive.

Dr. George F. Keene:

In my opinion, on the 12th of February last Amos D. Palmer was irresponsible for his actions at the time by reason of mental disease. He is incurable, in my opinion; the disease is progressive.

Dr. Edward Cowles:

I have visited him five times previous to the trial, and have heard the testimony that has been given. In my opinion, he was not responsible, not in a condition of responsibility, at the time of the homicidal act. He was under the influence of a disease with which he has been affected from his birth, a defective physical and mental condition, constituting a form of disease. In addition to that, in my opinion, he has had the disease of epilepsy, which has contributed by its effects to the mental incapacity. I consider that, in consequence of that disease, there are times when under its influence he is not responsible and has not control of his conduct; that he is not responsible for what he does. I believe that the events of the night of February 12th are to him a blank, and so far as I have been able to ascertain them, and from all the evidence which we have been able to learn, that is consistent with an attack of that disease at that time, and that

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Medical Jurisprudence of Insanity, page 644.

he was not then conscious of the nature of his act, or at all responsible for it. In my opinion, he should be placed under medical care, both for his own sake and for the protection of the public from further possible consequences of his condition; for his own sake, that he may receive the benefit of treatment it is possible that he may receive. I believe the disease is progressive and incurable.

Dr. Walter Channing:

I think at the time of the commission of the homicide that Amos D. Palmer was irresponsible. I think that from birth he has been of feeble mental organization and, as a result of a very careful physical examination that I have made of him, as well as mental examination, that he would now be classified as a high-grade imbecile. I think also that he has been an epileptic, and that, probably, on the night of the homicide he was in an epileptic condition. I think that as a result of this general condition that on the night of the homicide he was the subject of mental disease and that the act was the result of the mental disease and that he was on that night irresponsible. I think the disease will be progressive and I see no chance of cure.

Dr. Fenner H. Peckham:

I consider that at the time of the homicide, February 12, 1899, that Amos D. Palmer was in an unconscious condition as a result of mental disease, combined with an epileptic attack, and was therefore not responsible for his act which he committed. I do not think he will recover from this disease, and I think it is a progressive disease.

Dr. William H. Palmer:

My conclusions are that Amos D. Palmer, when he fired those shots that killed his wife, did not know what he was doing; he was unconscious of what he was doing; he had no control of his actions, and that all these conditions were the outcome of the disease from which he was at the time suffering and from which he has been suffering from his earliest youth. In my opinion, that disease was of the character of epilepsy, for I know of no other disease that would so arrest and retard mental development like that. I think he was therefore wholly irresponsible for his act on the night when he fired those shots. The disease will progress; perhaps in the best years of his life the advance would not be so rapid, but it will be onward, at times slow, at other times fast.

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FOOD POISONING AND METALLIC IRRITANTS.[1]

BY CHARLES HARRINGTON, M.D., BOSTON.

In the discussion which followed the reading of a report of a case of supposed ptomaine poisoning at the last previous meeting of this Society, reference was made to the great difficulty often experienced in determining the correct diagnosis, owing to the close resemblance in the symptoms produced by ptomaines and by arsenic, and in response to a question bearing on that point the statement was made that in a doubtful case recovery pointed to ptomaines and a fatal termination to arsenic as the cause. As this was allowed to pass without comment or contradiction, whether it was or was not intended to be taken seriously, it seems not out of place to call attention to certain points of difference which may be observed even in those cases in which the general train of symptoms points equally well either way. But first of all, with regard to the diagnostic point above mentioned it must be said that fortunately not all cases of arsenic poisoning terminate fatally, even in the absence of treatment, and unfortunately not all cases of poisoning by ptomaines recover under most careful management.

Before passing on to a consideration of the effects produced by arsenic and other metallic irritants and by food poisons, their resemblances and differences, attention must be called to certain misapprehensions concerning ptomaines and to a common laxity of the use of the term. Ptomaines are organic bases formed by bacterial action on nitrogenous organic matter of both animal and vegetable origin. They are sometimes designated as animal alkaloids, a term which in view of their possible vegetable origin is manifestly incorrect. It is a common belief that they are all poisonous in their nature, but while some of them are decidedly so, the majority of those thus far isolated are quite incapable of exerting any harmful influence. Different kinds of bacteria form different kinds of ptomaines and the same organism may produce different kinds according to the nature of the substance and according to the conditions, such as temperature, access of air and other circumstances under which it works. In contact with certain kinds of material it may produce no ptomaines, or harmless, or very poisonous ones; and acting upon one and the same material under differing conditions it may be capable of evolving a variety of compounds equally different in action. Again, the same material may yield under like conditions poisonous or non-poisonous ptomaines, or none at all, to different varieties of bacteria.

We have fallen into a common habit of ascribing to ptomaines the effects of all forms of organic poisons due to decomposition of food materials, regardless of the fact that other substances than organic bases are formed by bacterial activity. To these substances various names have been given, and at the present time there is considerable difference of opinion as to their applicability. In view of the fact that this confusion exists, and that in any case of poisoning of this sort the nature of the toxic substance cannot be known until it has been demonstrated by careful analysis, I would suggest that it would be preferable to adopt a general term suggesting food poison rather than a specific one having reference to the particular kind of product, the presence of which is suspected but not demonstrated.

In all cases of food poisoning the effects produced are due either to substances formed by bacterial agency in the food itself before ingestion, or to toxic substances developed within the body after infection by the contaminating bacteria. They vary widely in character, sometimes closely resembling those caused by metallic irritants, sometimes suggesting the presence of narcotics, and again being mistaken for infectious disease of common occurrence. For the purpose of this paper only those cases in which the symptoms resemble those of poisoning by metallic irritants will be considered. The individual members of the latter class cause practically the same group of symptoms, but with the exception of arsenic they cause such peculiar metallic tastes that their effects are not very likely to be mistaken for those of bacterial products. Therefore, the discussion may most properly be further limited to the resemblances and differences observable in poisoning by this substance and by foods.

From the character of the onset, no assistance in making a diagnosis can be expected, because of its exceeding variability in both classes of cases. In arsenic poisoning the first effects may be manifested almost immediately or not for a number of days, even after as many as eight or nine. In one recorded case the first effects were shown eight days after ingestion, and recovery was complete within a short time; in another no symptoms appeared until the ninth, and death occurred on the twelfth. The symptoms generally begin with burning pain in the stomach, vomiting, diarrhea and other evidences of gastro-intestinal irritation, but they may, on the other hand, resemble those of narcotic poisoning up to within a short time before death, when those of irritation may appear. Again, no effects whatever may appear for some hours, and then death may follow very quickly after. Thus, in a case in which nothing remarkable occurred until seven hours after the poison was taken and no signs of irritation until the following day, the latter appeared suddenly, and within a half-hour the victim was dead. The onset in food poisoning may appear almost at once or at any time up to four or five days, and the same food shared by a number of people may affect them at widely different times and with different degrees of severity according to the amount eaten. Sometimes, too, different portions of a piece of meat or of a sausage or other food are unequally altered by putrefactive changes or unequally cooked, and thus produce different manifestations. As is the case with arsenic, fatal termination may occur in much less than twenty-four hours or may be postponed many days. In both classes the vomitus is very variable in character and appearance. It is less likely to be bloody in food poisoning, but may on the other hand be quite devoid of any remarkable appearances in poisoning by arsenic. The stools, too, present no uniformity of character in either case, but they are likely to be bloody in arsenic poisoning and to be extremely and unusually offensive in food poisoning. Diarrhea may be present in neither, but instead there may be obstinate constipation.

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[1] Read before the Massachusetts Medico-Legal Society, October 4, 1899.

In arsenic poisoning constriction and heat in throat, cramps in the calves and elsewhere, coldness of the extremities and of the whole surface of the body, weak, almost imperceptible, pulse, anxious countenance, eruptions of different kinds on the skin, great prostration, headache, stupor and convulsions, are common symptoms, and in food poisoning they are equally so. In short, most of the symptoms caused by the one are commonly observed in the other.

There are, however, three notable differences:

In arsenic poisoning we observe heat and constriction in the throat; the patient often finds it difficult to swallow because of the pain which accompanies the effort. In food poisoning these same effects are among the most constant symptoms, and in addition, swallowing and speaking may be even impossible rather than simply difficult. This is *not due to pain*, as in arsenic poisoning, but to involvement of the nerve cells; there is a genuine condition of *paralysis* of the throat, such as is not seen in poisoning by any of the metallic irritants. Sometimes this difficulty is one of the very first symptoms.

A second point of difference is the condition of the pupil. In most of the reported cases of food poisoning of the class which we are considering a marked dilatation of the pupil had been noticed, and in many, also, great impairment of vision and even total blindness. In some cases the eyes react not at all to light. Rarely, instead of dilatation, contraction of the pupils is noticed, and sometimes the one condition succeeds the other.

A third point of difference is the extent to which the muscular system is involved. In arsenic poisoning there is great prostration, but as a rule the patient is able to stand and walk about, though only with great effort. In food poisoning, on the other hand, it is most commonly the case that the legs refuse to support the body, even when the patient is assisted. In one outbreak, in which over 70 persons were involved, this condition was remarked in almost every case; in another, in which the number of victims was 30, the same condition was noticed in all.

Fortunately, in the matter of treatment, the diagnosis between arsenic and food poisons is not of very great importance. In either case the removal of the offending substances from the alimentary tract by appropriate means and supportive treatment are essential. In doubtful cases the administration of the usual antidote for arsenic can do no harm even though that poison is not present.

In cases of fatal ending the post-mortem appearances are by no means always to be depended upon to clear up doubtful diagnosis. In some cases of fatal arsenic poisoning the lesions are no more extensive than those of food poisoning, although as a rule the latter are slight or wanting.

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Clinical Department.

SIMULATED APPENDICITIS.

BY J. G. MUMFORD, M.D., BOSTON.

Cases of simulated appendicitis are so common that it seems as though no new abnormality of the sort could be recorded; yet here is a case which will interest surgeons, I believe.

In a recent address on "Acute Abdominal Symptoms demanding Immediate Surgical Intervention"[1] Dr. M. H. Richardson gave an excellent table, enumerating all such urgent cases, apparently; yet it is hard to say where he would have put this case.

The patient, a young girl of twelve, was brought to the Massachusetts General Hospital. I saw her for Dr. Homans. She was sent in with the diagnosis of appendicitis, made by her physician, and with the statement that an immediate operation seemed imperative. Her past history was a good one. She was a vigorous, well-developed child, with an acute attack of abdominal disease, and this was the third day of her illness. Without warning or known indiscretion in diet she had been seized suddenly with acute agonizing pain in the umbilical region. The pain lasted six hours, when vomiting set in. The character of the vomitus was unknown; at any rate there was some considerable relief from pain for a few hours.

On the second day the pain returned gradually, becoming constantly more severe; situated at first in the right inguinal region, but later extending into the right chest and back. There was then more indefinite vomiting, but without relief from pain. There was "high fever." Castor oil was given on that second day, but was vomited at once. During all this time there had been no movement of the bowels. On the third day, some twelve hours before her entrance to the hospital, castor oil was given her again. A large number of watery stools followed, but now for ten hours there had been no movement, and it was stated that during that time the abdominal pain had been growing worse steadily.

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[1] Boston Medical and Surgical Journal, vol. cxli, page 381.

When I saw the girl she seemed to be in good general condition, flushed and frightened but without the peritoneal facies. Her sublingual temperature was 103° F.; pulse 112; respiration 28. Her abdomen was uniformly distended and tender; extremely tender in that particular region which has come to be known as "McBurney's point," and there her greatest pain was localized. On the right side, too, there was marked muscular rigidity and spasm. No special tenderness was to be made out by the rectum.

The case seemed so clear that I decided to operate at once; and I think any one of my colleagues would have done the same. No blood count was made at the time, but one was made immediately after the operation. The incision was made over the seat of greatest pain, and a distended but otherwise normal-looking cecum discovered, together with a long, normal retrocecal appendix vermiformis. The incision was enlarged and the abdomen carefully explored, but all the viscera were found to be perfectly sound, with the intestines somewhat distended, but healthy in appearance. To be sure a mass which seemed about half the size of a hen's egg had been felt within the cecum, but this was at first taken to be fecal.

After exploring the abdomen I returned to a further investigation of the apparently fecal mass. Careful palpation showed that it was not fecal. It felt like a coil of matted shoe-strings. But it might be a tumor growing entirely within the lumen of the gut. It did not seem freely movable. At any rate its removal was necessary to relieve the patient's symptoms. A two-inch longitudinal incision in the cecum allowed the foreign body to be squeezed out readily. It proved to be a compact mass of orange pulp. The cecum was closed, the abdominal wound sewed up and the patient put to bed. She was relieved of her symptoms, made a good recovery and went home at the end of four weeks.

Another interesting feature of this case was not developed until after the operation: the blood count at the time showed 30,200 whites. Had I received this report before operating, instead of immediately afterwards, I should have felt still more convinced that I was dealing with an acute intra-abdominal inflammation. Two days after the operation the count had come down to 10,500 whites.

Further comment on this case is almost needless, except to point out that the diarrhea following the giving of a dose of castor oil, so far from contraindicating appendicitis, went rather to confirm that diagnosis, when one coupled with those facts the continued and increasing pain and distention suggesting a perforated appendix and spreading peritonitis.

REPORTING CASES OF LEAD POISONING.— A coroner's inquiry has recently been held in the neigborhood of Manchester, England, relative to the supposed death from lead poisoning of a workman at a chloride electrical storage factory. It appears from a statement in the *British Medical Journal* that it is incumbent upon practitioners to report to the Home Office all cases of lead poisoning, as well as poisoning from arsenic and phosphorus.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D., BOSTON.

(Concluded from No. 23, p. 577.)

THE RESULTS OF VON BRUNS'S SUBPERIOSTEAL AMPUTATION OF THE LEG.

HAHN, in an article on this subject,[18] states that in 1893 Professor von Bruns published an account of his method, which had been employed in 20 cases. He states that at present the total has risen to 81, a sufficient number to draw definite conclusions as to the value of the operation.

A desirable method of amputation of the leg should fulfil the following conditions: It should be easily performed, and the conditions attending wound healing should be of the simplest kind; it must do away with gangrene of the flaps, and, lastly, should give a perfectly shaped stump. The author states that all these requirements are fulfilled in von Bruns's operation.

The skin being well retracted by an assistant, a circular incision involving all the soft parts is carried down to the bone. Two vertical incisions are now made at right angles to the first for about four centimetres, one along the inner border of the tibia down to the bone, the other penetrates between the muscles down to the fibula. Through these incisions the soft parts, including the periosteum, are raised from the bones. The entire mass of soft parts being properly retracted, the bones are sawn through. There remains then anterior and posterior flaps of periosteum, muscles and skin. After ligation of the vessels and trimming of the tendons, the periosteal muscular portion is united over the bones with buried catgut sutures, the skin is united separately after somewhat rounding off the corners. Above the lower third, or where the condition of the soft parts demands it, the circular incision through the skin is made separately and at a somewhat lower level.

Of the 81 cases 63 were in the lower third, 12 in the middle. There were no deaths. Perfect union was obtained in 62, slight disturbances occurred in 11, suppuration and healing by granulation eight times, two requiring reamputation. In only three cases was there gangrene of the flaps — less than four per cent. Each of these cases was attended with conditions specially predisposing to gangrene. In 1882–1888 the amputations in the clinic were attended, according to the author, with a percentage of gangrene of 17. Some collections of statistics give as high as one-third of the cases as resulting in gangrene of the flaps. The after results as regards shape and usefulness of the stump were most satisfactory. In no instance was the scar adherent; equally good results attending the complicated and unfavorable as the good cases.

THE TECHNIQUE OF LARYNGECTOMY.

KEEN,[19] in a paper on this subject read before the American Surgical Association, gives the history of a case of epithelial carcinoma on which a thyrotomy was done in May, 1898. In October of the same year it was found that total laryngectomy was necessary, and the author adopted a method which rendered the operation one of simplicity, caused but little loss of blood and little shock, and avoided the danger of aspiration pneumonia. He states that his patient was out of bed on the fourth day, and was practically well on the tenth day, entire union by first intention having been secured. The details of the operation are as follows:

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[18] Beiträge zur klinischen Chirurgie, Band xxii, Heft 2; Annals of Surgery, June, 1899, p. 781.

[19] Annals of Surgery, July, 1899, p. 1.

The patient was placed in the Trendelenburg position, and an incision was made in the median line, in the scar of the old thyrotomy. The thyroid cartilage was again split, and the two halves drawn apart to determine by inspection whether a total or unilateral laryngectomy was required. Having decided upon a total laryngectomy, the soft parts were dissected away from the entire larynx, keeping very close to the cartilages until the esophagus was reached posteriorly. All hemorrhage was carefully arrested by catgut ligatures. The median incision in the skin was carried down nearly to the sternum, but the soft parts were only separated down to the cartilages. A low tracheotomy was then done, but instead of any tampon canula a large ordinary tracheotomy tube was inserted, the calibre of the outer tube of which was twelve millimetres in diameter. The inner tube was removed and the metal tube of Hahn's canula was inserted and connected with its chloroform apparatus. Prior to this time chloroform had been administered by the mouth.

The trachea was now divided completely across below the level of the cricoid and below the inner border of the beard. The lower end of the portion to be removed was then drawn forward by a hook, and chiefly by the finger, but with the occasional assistance of the Allis dissector; the author very carefully separated the larynx from the esophagus up to the upper level of the larynx. By a few snips of the scissors the author was able to divide the attachments of the upper margin of the larynx horizontally and remove it. The epiglottis was drawn down through the median incision and removed. A few vessels were tied with catgut.

The upper edge of the anterior wall of the pharynx was then carefully attached to the tissues, just below the hyoid bone, by interrupted silk sutures, placed very close together. It was thus hoped to shut off entirely the secretion of the mouth and pharynx from the operation wound. The upper end of the trachea was now united to the skin by silk suture. The tracheotomy tube was then withdrawn and chloroform was administered on a pledget of cotton covered with a layer of gauze, held in a pair of ring forceps over the open end of the trachea. The tracheotomy wound was then immediately closed by catgut sutures to the trachea, and silkworm-gut sutures closed the corresponding wound in the skin. The wound above the tracheal opening, at the former site of the larynx, was also closed by silkworm-gut sutures, a small gauze drain being inserted in the lower end. The amount of blood lost during the operation was less than three ounces.

The wound was dressed as follows: Narrow folded strips of gauze were placed above and below the tracheal opening, which was left bare. To protect the wound from infection, if possible, and certainly from dust, the body of a disinfected wooden pill box, from which the top and bottom had been removed, was placed over the tracheal opening, and over the pill box two or three layers of gauze were laid and pinned to the dressing on each side, the object being to filter the air. From time to time the gauze and pill box were removed, so as to remove any discharge from the margin of the tracheal opening. The entire operation of tracheotomy and laryngectomy occupied an hour and a half.

The author considers that a further improvement can be made in the technique, namely, the omission of any — even a temporary — tracheotomy. He proposes in his next case, after dissecting the soft parts from the larynx and upper trachea back to the esophagus on both sides, to place the patient in the Trendelenburg position and deepen the narcosis to a slight extent; to then divide the trachea transversely, and by three sutures, one in the middle line and one on each side, to quickly attach the tracheal stump to the skin. He then proposes to introduce the ordinary tracheotomy tube into the open end of the trachea instead of through a tracheotomy wound and continue the anesthetic through the tube. The later steps of the operation will be the same as above described. In order not to embarrass the operator, the flange of the tracheotomy tube should only project at the sides, as the usual wide upper border of the flange would interfere with access to the parts in the beginning of the removal of the larynx.

THE RECONSTRUCTION OF A PERFECTLY FUNCTIONATING ANAL SPHINCTER FROM THE LEVATOR ANI AND GLUTEAL MUSCLES.

Lennander[20] has devised an original and successful operation for the restoration of the anal sphincter in a case in which it had been destroyed by a phlegmonous ulceration which originated in the ischiorectal spaces and left the patient without the power to retain either flatus or feces, even when astringents and opiates were employed. The opening into the rectus readily admitted three fingers, and electrical stimulation failed to reveal any contractility of the anal sphincter. Subsequent examination, after a successful operation had been performed, showed a local anesthesia in the area about the anus and in the mucous lining of the gut, which made it highly probable that the nerves had been destroyed as well as the muscle.

Finding no analogous or similar cases reported in literature, the author determined to construct a new sphincter, employing for this purpose the levator ani muscles, which have been shown to have the power of contraction in a manner similar to the anal sphincter. After careful dissections of the male perineum and a study of the possible operations he performed the following, with results that were all that could be desired, as the patient secured perfect control over both flatus and feces, even when the latter were liquid.

An incision followed the line of the sacrum and coccyx to the tip of the latter bone, and then took a horseshoe form about the rectum. The posterior portion of the levator ani and the anterior portion of the coccygeus were laid bare by dissecting back the glutei from their median origin. The levator ani muscles were freed from the coccyx and coccygeal muscles, although the separation was not made completely to the margin of the pelvis, as it would have interfered with the innervation of the muscles by dividing the nerves which are found there springing from the sacral plexus. These portions of the levator ani were carried on either side of the rectum, and fixed to the anus in such a manner that their contraction produced a constriction of the rectum. The median portion of both glutei muscles were separated from the tubero-sacral ligament, the sacral bone, and the coccyx, and used to fill the defect in the pelvic floor caused by the displacement of the levator ani muscles. They were united in the median line with each other, with the levator ani muscles, and with the skin of the anus. The after-treatment consisted in electrical stimulation and the use of small enemata to accustom the rectum to retain its contents.

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[20] Cent. f. Chir., June 24, 1899; American Journal of the Medical Sciences, August 1899, p. 219.

INOPERABLE ANGIOSARCOMA CURED BY ELECTROLYSIS.

Videbech [21] reports a case of angiosarcoma occurring in a girl of sixteen years. It was the size of a child's head; was situated at the base of the neck posteriorly, and had rapidly increased in size during the last two months. The attempt was made to remove it, as it was not adherent to the skin and had considerable freedom of motion. The operation, however, showed that it had invaded the deeper structures and had passed anteriorly between the lateral spines of the vertebræ, where it was impossible to reach. After as much as was possible had been removed, the wound was cauterized with chloride of zinc and an antiseptic dressing applied. The microscopical examination of the tumor showed it to be an angiosarcoma. On the removal of the dressing on the fifth day there was considerable hemorrhage. The wound was packed with iodoform gauze, and the next day electrolysis was commenced. Four needles were passed from the positive and negative poles as deeply into the remaining tumor as was deemed safe, in different directions, and a current of 500 milliampères was passed. This was followed by a copious discharge of necrotic tissue sometimes as large as an egg. The wound finally cleared up and granulated over.

About a month later the granulations assumed an unhealthy appearance and a microscopical examination showed sarcomatous cells. The electrolysis was, therefore, repeated on four successive days. The current was several hundred milliampères, and the chemical action about the needles was marked. The wound healed rapidly after this by granulation, and the patient was shortly dismissed, about six weeks after the original operation.

The patient was under observation for over three years, and no recurrence had been noted.

A careful review of the literature of the subject shows that no results similar to this have been obtained where the nature of the tumor has been determined by microscopical examination, and an operation has demonstrated the impossibility of removing it in its entirety.

The author agrees with Kaarsberg that the rational method of operating by electrolysis consists (1) in using it as an adjunct to the knife where that cannot be employed; (2) in the employment of strong currents of electricity, which produce a decided, quick and thorough destruction of the diseased tissues. To make this possible the tissues must be freely accessible, so that one can see where to work and avoid injuring vital parts, and also to provide an outlet for the devitalized tissues.

Powerful currents are not as dangerous as has been supposed. The needles should be thrust deeply in at various points, and should be employed at various poles.

THE ACTION OF THE HOLLOW-TIP BULLET.

Bruns [22] conducted an extensive series of experiments with this new bullet and his findings may be summarized as follows:

The wounding faculty of a missile fired by a given weapon and a given powder can only be increased by rendering it more easily deformed. Consequently, the extent of the wound inflicted is proportionate to the projectile's alteration in shape. In the modern rifle the entire covering of the leaden core of the bullet is made sufficiently resisting as to be only affected on striking a bone and only when fired at a comparatively short range. To the use of jacketed bullets must be given the credit of the occurrence of less gruesome wounds attending the employment of the small-bore weapon.

In attempting to increase the efficacy of the ordinary modern bullet, the tendency was naturally towards removal of the tip of the mantle, resulting in the so-called "Dum-Dum." These were used in the last Indian uprisings by the British, and at short range the wounds inflicted were frightful. Even simple wounds of the soft parts are extremely severe, as the tremendous initial velocity quickly results in the "mushrooming" of the soft lead. To the softness of the lead tip is due its lack of penetration, which at short range is four or five times less than the "full mantle" bullet. They are also far inferior in ballistic quality.

In penetration the hollow-tipped bullet compares favorably with the ordinary type so long as no alteration in its shape is produced, and the greater the resistence of the target the more unfavorable the comparison. The following examples are instructive: Distance, 25 metres, dry deal block, "full mantle," no change, 100–110 centimetres penetration; hollow tip, slightly altered, 84 centimetres penetration; lead tip, markedly altered, 20 centimetres penetration. Same distance, dry beechwood, "full mantle," no change, 54 centimetres penetration; hollow tip, markedly altered, 14 centimetres penetration; lead tip, markedly altered, 12 centimetres penetration.

The gain in lateral effect must therefore constantly be obtained at the expense of penetrating power. The hollow-tipped bullet inflicts nasty wounds at short range, but is incapable of passing through four or five opponents or heavy covering. While such missiles may be of value in dealing with savage opponents, their usefulness in European warfare is questioned by the writer. If in the latter event an engagement were opened at 1,000–1,500 metres, a decisive result would occur as soon as the range was reduced to 500 metres; and even at this last distance the specific action of the hollow-tipped bullet has been proven experimentally to be wanting.

He may reasonably anticipate that, following the lines of the English improvements, there will be a renewal of efforts at increase of wounding capacity of bullets, and by following up this principle, efforts will doubtless be made to check the otherwise certain tendency to a further reduction of calibre. The evolution of the modern firearm is still active.

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[21] Cent. f. Chir., 1898, No. 31; American Journal of the Medical Sciences, July, 1899, p. 104.

[22] Annals of Surgery, May, 1899, p. 651.

Reports of Societies.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

JULIAN A. MEAD, M.D., SECRETARY.

The Society met October 4, 1899, at 19 Boylston Place, Boston. After the transaction of routine business, Dr. Jay Perkins, of Providence, read a paper on

INSANITY AS AN EXCUSE FOR CRIME.[1]

Dr. Hough: There is one point in the paper that I would like to bring up, and perhaps the reader can give us the information I seek. I refer to the propriety of the medical examiner acting as assistant district attorney, suggesting questions to catgut liga- witnesses. For my part, I should like to was carried the custom is in different parts of the Sta t parts w

In Bristol County the district attorne A low always considered that it was one of the dutie f the medical examiner to give to the district attorney every assistance possible in every way in the preparation of a case, as well as in the actual conducting of the trial, and he is expected to sit near the district attorney and suggest to him questions to be asked on the cross-examination of medical witnesses for the defence, and also questions pertaining to medical matters of his own medical witnesses. Whether this is done elsewhere or not, I should like to know, and I hope that our associate members may enlighten us.

Herbert Parker, Esq.: Of course, I can only speak of my own personal experience and my own judgment in the matter, as to what may be the duty of the medical examiner, both before the inquiry in court, and during preliminary examinations. It is quite true that all district attorneys look upon medical examiners as officers to whom they can always go for assistance in investigations and preparation of a case which seems to involve medical questions in connection with a crime. My own view of the situation is this, and I have always followed it. I do not have a medical examiner with me for the purpose of prompting or suggesting questions, or appearing in any way to participate in the conducting of the trial. The medical examiner has, of course, his own duties. He makes an examination at the autopsy, and draws an inference as to the cause of death, without at the time intending to form any prejudgment as to who may or may not be connected with the death, if it should turn out to be a crime. The medical examiner, so far as possible, should stand before the court impartial because of the duty that he has taken. I agree entirely with the gentleman who has just spoken. Difficulties have grown out of expert testimony, and the reason why that testimony has been condemned in the popular mind is because the expert (which has happened in a vast majority of cases) after artful examination will stand revealed as a partisan, and the moment he has been so disclosed, I can tell you that he has become valueless. My own practice is to confer immediately with the medical examiner, after the autopsy, concerning the condition. I do not need to charge them, as they are quite as intelligent as I. They all know that if the case comes to trial their duty is to tell exactly what they saw and found, and abstain from drawing inferences, except the inferences that are to be drawn from pathological conditions. The moment a medical examiner becomes of the belief that a person is guilty of the crime, his duty is one very dangerous to the subsequent value of the case. Of course, there is a conference with the medical examiner outside of court, and we must be diligently instructed when we try to deal with some matter within your province. Let me say here, and have it understood, that I am not at present a district attorney, but an ex-district attorney. I have always looked upon my medical examiners, in all questioning, as of the utmost value; we cannot conduct any criminal inquiries without them, but they should not participate in the prosecution. This same condition should be carried out in the trying of cases where physicians are employed by corporations in the case of an accident for the consequences of which the corporation may be held to answer. The physician goes and makes an examination, not so that he may be useful in the trial, but, as an impartial man, expresses his opinion as to the physical condition at the time of the examination, and should absolutely abstain from trying to gather from the patient when he visits him what were the circumstances of the accident, because it is always charged that the physician goes to the patient not wholly as a physician bringing the assistance of his science, but as a detective trying to make diligent inquiries to get some important statement that may be brought against that person and may be brought out in the court.

Dr. Pinkham: I should like to ask a question in regard to dying declarations. Is it necessary for a person to believe absolutely that he is going to die, before his declaration can be taken, or if he thinks that he is very likely to die, is that sufficient? That is the question. You take the criminal abortionist: there is a question about the propriety of the physician's telling the patient that she must die; he cannot be sure of it until, perhaps, she is unable then to make an intelligent statement. We save these cases up to the very last, when they seem to be in extreme conditions, but owing to surgical treatment may get well; can the physician tell such a patient that she will die and discourage her, perhaps add to the probability of her dying? If the physician must make that statement and the patient must believe absolutely that she is going to die, I think it would be difficult to get dying declarations that would be admitted to the court; it would be very rare. This is the question that I want to raise, whether in this declaration, in view of the extreme condition, probability of death would be sufficient.

Herbert Parker, Esq.: The dying declaration must be made by the deponent under the condition of mind which is removed from all hope of recovery; it must be made in anticipation of death. The theory upon which it is admitted at all as evidence, so contrary to the rules of evidence, is that the solemnity of the occasion, deepened by the belief that they are about to die and go before their Maker, and dare not die with a falsehood on their lips, has established this evidence as competent, and that the deponent at the time of making this declaration had no hope of recovery, but made it in anticipation of death. What the gentleman has said in regard to the difficulties attending are well appreciated by courts and prosecuting officers. They know that it would be the gravest question, and that the physician would hesitate in saying something that might make the recovery of the patient doubtful. There have been quite a number of cases, where I have known the attending physician to watch the patient, prepared to take the declaration when it becomes necessary, and to wait until he is sure that no human aid will save the life. Where the priest is necessary, the patient is told the condition, and so we get this condition, that many declarations used in evidence will be lost for reason of the moral responsibility of the physician. The evidence is valueless, unless given in anticipation of death, the patient having no hope of recovery.

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[1] See page 595 of the Journal.

DR. CHARLES HARRINGTON read a paper on

FOOD POISONING AND METALLIC IRRITANTS.[2]

DR. HOUGH: I think that the question here is a question of diagnosis during life, as well as the appearances after death. I fear that I have not grasped some of the points in Dr. Harrington's paper, wherein he makes out in three points for diagnosis the difference between arsenical and ptomaine poisoning. In the first place, in food poisoning the actual paralysis of the throat, so that swallowing was impossible, and the patient could not speak; second, in food poisoning there was usually dilatation of the pupil, sometimes absent, and rarely detected; third, you could make a person poisoned by arsenic get up and walk, but in food poisoning you could not. As physicians, we could hardly make use of the last-mentioned sign or diagnosis, so it appears that we are limited to the dilatation of the pupil, and the paralysis of the throat. We must acknowledge that in some cases, if not many, that diagnosis during life is impossible, and we have only the chemical examination.

PROFESSOR HARRINGTON: I did not mean to imply that there are no cases which it is absolutely impossible to diagnose without these signs; I have, however, taken some which are very common in food poisoning, and not observed in arsenic poisoning. I certainly should not advocate taking a man out of bed to make him walk; the man absolutely cannot walk in food poisoning, but simply slumps to the ground. As to dilatation, that is another point which is not invariably present, not very commonly. I do not think that it is commonly present in poisoning by arsenic. While there is likely to be great difficulty in swallowing before death, caused by arsenic poisoning, that difficulty is owing to emotion of pain, while in food poisoning there is an involvement of the cells and throat, and swallowing is impossible, not on account of pain, but the inability to swallow. There are one or two other points that I have mentioned on which I have laid no special emphasis, as to the character of the stool, very offensive odor in food poisoning, which in arsenical poisoning is not so. There are a great many cases recorded, where, from the symptoms as given, it is impossible to determine whether food or arsenic poisoning was the cause of death. Oftentimes where arsenical poisoning has been suspected, a chemical analysis made afterward found no arsenic, but ptomaine poisoning had been demonstrated.

DR. HARTWELL: I was particularly interested with what Professor Harrington said in reference to paralysis of the throat as a point in food poisoning. At a hotel in London, some 70 people were prostrated, and one, Professor Webber, died within forty-eight hours. In all of the cases the papers stated that the prostration was caused from ptomaine poisoning, and many would not be able to live, and our English cousins claimed the sickness was caused by certain products that came over from America, as those prostrated had eaten something that had come in cans, apricots or peaches. The case comes up in October, and there is wide attention given it in the city of London, on account of the standing of the hotel.

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[2] See page 601 of the Journal.

Recent Literature.

Sexual Impotence. By VICTOR VECKI, M.D. From the author's second German edition, revised and rewritten. Philadelphia: W. B. Saunders. 1899.

In his preface to the above volume, the author has expressed himself thus, in part: "When the first German edition was published in 1889, there was some commotion in the ranks of old and young medical fogies, who were indignant that any one dared to resist their intellectual tendencies, refused to worship their superannuated gods. The second German edition found the ranks of the same kind of professional formula-riders and bigots solid though somewhat thinned. I have taken the liberty of preserving the independence of my altruistic opinions, and shall continue to fight against false and hypocritical quasi-scientific pretensions," etc.

The above quotation suggests that the author has with difficulty escaped the perhaps congenial role of a martyr at the hands of a part of his professional *confrères*, and has adopted the rather aggressive attitude which his words indicate instead. At any rate there is no room left by them for doubt as to his unalterable determination to nail his colors to the mast and to perish nobly in defence of the beliefs which he seems persuaded are wholly personal and to call for full preparations for *combat à l'outrance.* In view of this suggestion we are a little surprised at not finding anything either so radically new or startling upon reading his excellent work as to explain the need he feels for writing such a preface, or that could have called down upon him such condemnation as that with which he has evidently been visited.

There is not much to be said by way of adverse criticism, and something certainly to be spoken in its favor. It is a thorough presentation of a subject which, as the writer says, has received too little attention, though we cannot agree with him in considering it to be one that has been so profoundly neglected as he seems to consider.

The subject is introduced by one chapter on the anatomy and one on the physiology of the organs concerned, both of which are good. In the course of the latter the formation of the spermatic fluid is dealt with at considerable length, and the theory of reabsorption of spermatozoids is also combated. Examples are adduced to show that daily coition does not necessarily make the spermatazoa wholly disappear from the seminal fluid.

The various forms and etiological factors of impotence are considered in detail in the following chapters, and the book concludes with a description of the various methods of treatment, including that of suspension by means of an apparatus similar to that used for applying plaster-of-Paris jacket to which some degree of benefit may be ascribed in a certain number of cases. These last chapters contain a number of useful suggestions, amongst which is to be noted the emphasis which the author places upon psychical treatment, the employment and effects of massage, gymnastics, electricity and bathing.

The practitioner is generally not familiar with the remedial measures for this condition and can gain a good practical knowledge of them from this work.

On Fractures and Dislocations. By PROF. DR. H. HEFFERICH, of Grieswald. Translated from the third edition by J. HUTCHINSON, JR., M.D., F.R.C.S., Surgeon to the London Hospital. New York: William Wood and Co. 1899.

This volume is one of the series of medical hand-atlases published by William Wood and Co. It varies somewhat in its size, arrangement and illustrations from a former edition published in 1896. The descriptive text, which treats of the subject of fractures in general and specifically, occupies the first one hundred and thirty pages, and is illustrated by one hundred and twenty-six wood cuts of pathological conditions, methods of treatment and apparatus. The remainder of the book is a collection of sixty-eight chromo-lithographic plates, each of which is accompanied, on the page facing it, by a brief anatomical description of the lesion shown. Although there is no preface, or introductory note, it is to be presumed that the plates have the same origin as those of the former edition, which were from original drawings of actual specimens, many of which were especially prepared for the purpose. The remainder were drawn from museum specimens or lesions artificially produced. They represent recent injuries, fractures after union, and in some instances methods of treatment. The present volume is slightly larger than the 1896 edition. It is an attractive book of convenient size and contains much valuable information in a form exceedingly available for rapid reference.

The Mineral Waters of the United States and Their Therapeutic Uses. With an Account of the Various Mineral Spring Localities, Means of Access, etc. By JAMES K. CROOK, A.M., M.D., Adjunct Professor of Clinical Medicine and Physical Diagnosis at the New York Post-Graduate Medical School, etc. Pp. 580. Philadelphia and New York: Lea Brothers & Co. 1899.

This is a useful book, because it fills a gap in our American medical literature, and, again, because by it additional attention will be directed to measures of treatment too little used in the United States, but of undoubted value. The author wins our confidence by the judicial and impartial tone of his writing on a topic which offers so many pitfalls. It is precisely for this reason that we can recommend the volume and give the writer our thanks for a reliable, comprehensive and conscientious work.

The first part is devoted to a discussion of mineral waters and their therapeutic uses. The origin, classifications and constituents of mineral springs are dealt with in the first few chapters, while the remaining chapters take up general conditions relating to the use of hydro- and balneo-therapeutics in special diseases. Each disease is treated cursorily (the scope of the book makes this unnecessary) and little more is said than to call our attention to the many possibilities of water treatments and the various means in which they may be employed.

The second part contains a description of the mineral springs and wells of the United States, with the topographical and climatic features of each State and Territory. This comprises some five hundred pages, or five-sixths of the whole book. As two hundred more mineral spring localities are described in this volume than in any other treatise of this nature, the extent of the author's researches becomes manifest. This completeness makes the book of great value for reference and ensures its purchase by every medical library.

It is unfortunate that the writer fails to use the metric system. The book is, as a whole, so excellent, that in this special regard, too, it should be an example. There are few typographical errors. On page 106 the consumption mortality of California is stated to be "2.39 per 100" when "per 1,000" is undoubtedly meant.

Few books contain less superfluous matter, while at the same time presenting all needful information.

An Experimental Research into Surgical Shock. By GEORGE W. CRILE, A.M., M.D., Ph.D., Professor of Surgery and Applied Anatomy in the Cleveland College of Physicians and Surgeons, etc., Philadelphia: J. B. Lippincott Co. 1899.

This book is the published form of an essay for which the Cartwright Prize for 1897 was awarded. It is a very readable work of one hundred and fifty-five pages, and represents a great deal of thought, literary work and experimentation on the part of the author. It is not common to find accounts of experimental research into surgical shock, and the book is more interesting and valuable on that account. The effect of irritation and injury in producing shock has been recorded from actual laboratory tests made on the various organs and tissues of the body. The detailed account of this laboratory work occupies the greater part of the book. The data thus obtained are classified and summarized. The concluding chapters are devoted to the "prevention" and "treatment" of shock; the author's conclusions; and the "factors producing collapse." The introductory review, entitled An Historical Account as to Theories concerning Shock, is an excellent *résumé* of the literature of shock. The book is one of the most thorough and carefully written essays devoted to this subject, the importance of which is apparent to every one, and especially to the surgeon. It deserves to be carefully studied.

Notes on Surgery of Nurses. By JOSEPH BELL, M.D., F.R.C.S., (Edin.), Consulting Surgeon to the Royal Infirmary, etc. Fifth edition. Pp. 189. Edinburgh: Oliver & Boyd. 1899.

The book contains the chief points of the author's course of lectures which for twelve years he has given the nurses of the Royal Infirmary in Edinburgh. It is intended to aid the nurse to understand and perform intelligently her clinical work in the hospital wards. The book contains many valuable hints to nurses, but is written somewhat in the style of the general lecture to hospital nurses or young ladies' sewing-circles. There are numerous glittering generalities and possibly more detail of pathology than would seem necessary for routine nursing. As one reads the chapters on suppuration, ulceration, gangrene, tumors, etc., the suspicion is aroused that perhaps it would be of more value to the nurse and her patient if she properly knew how to cook his food or prepare his bed than to know that there are six degrees of severity of burns, or that for skin-grafting the skin of young animals, such as kittens, terrier puppies and white rats, often can be used with success. But, as the writer states in his preface, the book is only intended to aid nurses who take an interest in their duties to understand their cases; perhaps for this purpose it will fulfil its mission.

On Varix, its Causes and Treatment, with Especial Reference to Thrombosis. By William H. Bennet, F.R.C.S. (Eng.), Surgeon to St. George's Hospital, etc. Pp. 53. Illustrated. London, New York and Bombay: Longmans, Green & Co. 1898.

Under the above title is published an address which was delivered by the author at the inaugural meeting of the Nottingham Medico-Chirurgical Society in 1898, and which, with the exception of a few slight alterations and the addition of twelve illustrations, appeared in the *Lancet* of October 15, 1898. It is an interesting monograph. The writer has devoted considerable time to this subject, especially the etiology of the affection, and has been impressed with the apparent importance and frequency of thrombosis as an active cause of this lesion. His remarks on the danger of varices when in the thigh attract attention; also the chapter on palliative treatment. The book is a valuable contribution to the literature of the subject and is well worth reading. It will be an aid to the diagnosis of some obscure cases which probably many a surgeon will recall while reading its pages.

Handy Book of Medical Progress. A Lexicon of the Recent Advances in Medical Science. By Charles Warrenne Allen, M.D., Consulting Dermatologist to the Randall's Island Hospitals, etc., and Jacob Sobel, A.B., M.D. Pp. 185. New York: William Wood & Co. 1899.

This small volume, as its name implies, aims to put before the reader in concise form the gist of recent advances in the various branches of medicine. Its limited size naturally does not permit of completeness, but it nevertheless contains much useful and important information. Mention is made, for example, of many of the newer drugs and preparations, with brief descriptions of their composition. A timely paragraph is devoted to liquid air. On the other hand, many matters by no means new find a place, as for example, Little's disease, polyuria, Graefe's sign, Addison's disease. In a somewhat limited way, the book will no doubt be found useful by those who do not have ready access to larger medical dictionaries. The binding and printing are satisfactory. The various subjects mentioned are arranged alphabetically, which precludes the necessity of an index.

A Manual of Diseases of the Nose and Throat. By Cornelius Godfrey Coakley, M.D., Clinic Professor of Laryngology in the University and Bellevue Hospital Medical College, New York, etc. New York and Philadelphia: Lea Brothers & Co. 1899.

This text-book is carefully written: the arrangement and the relative amount of space given to each subject are in most cases good. The anatomy and physiology of the region under consideration are well condensed into a very small space. Many chapters, such as that on methods of examination, vasomotor rhinitis, perforation of the septum, epistaxis, diphtheria, tuberculosis of the larynx, and several others, are clear, concise and well adapted for use in following a didactic or clinical course on the subject, or as a reminder to general practitioners. The diseases of the nose begin with a chapter on nasal obstruction, an attempt to generalize a large amount of the pathology and symptoms to be described later. This would be more likely to confuse than to help the cursory student, for whom the book is especially adapted. The same might be said of classifying purulent and membranous rhinitis as separate diseases rather than as symptoms in their proper places. The space given to some important subjects is not sufficient: in other words, the book is too much condensed. For instance, the subject of diseases of the ethmoid cells is contained in two pages. The author confesses to lack of space for description of operations for redressing deformities of the septum, and describes only that of Asch. To a student it would probably have seemed a better balance to have given more space to this subject, perhaps at the expense of some of the thirty pages on diphtheria, which is commonly classed under general medicine. The description of tonsillotomy does not cover that large class of hypertrophied tonsils which are so adherent that a guillotine can shave off only a small slice.

The illustrations are not satisfactory. Most of them are instruments, and some of these are not the ones which many men would choose. An illustration of a lingual tonsil and one of a peritonsillar abscess ought not to be allowed anywhere. A few from Zuckerkandl are well chosen.

No one could write a short text-book, in which didactic assertions are necessary for clearness and brevity, without laying himself open to criticisms of details from those working in similar ground. The author's choice of methods and instruments, and especially therapeutics, is, of course, not always the same as would be chosen by his colleagues, but in general his teaching may be considered orthodox. As a text-book for a short course on laryngology the book is good, it probably contains enough for a book of reference for a general practitioner who wants help in an occasional case, but for either class it would be better to use a less superficial work.

Claude Bernard. By Michael Foster, M.A., M.D., D.C.L., etc., Secretary of the Royal Society of London; Professor of Physiology in the University of Cambridge. New York: Longmans, Green & Co. 1899.

The appearance of this little book, written by Sir Michael Foster, will be welcomed by all who are interested in experimental medicine. The book gives us a clear account of the scientific work of the great physiologist — one of the pioneers in the enormous field of physiological research — and so furnishes us with a valuable addition to the library of physiological history, besides pointing out the immortal discoveries made by Bernard.

It is to be regretted, perhaps, that the book does not contain more information of Bernard's life apart from his scientific work, but, as Sir Michael says in his preface, the details which can now be gained of Bernard's life are very scanty. So, perforce, we must be satisfied with the meagre details of his ordinary life contained in the volume, and which are, indeed, sad and commonplace enough. We simply read that a great man, one of the keenest observers the world has ever seen, and holding an eminent scientific position, was unfortunate in his domestic happiness. A lack of appreciation of his scientific attainments, and even more, disapproval of his work, by his family, led to a complete estrangement. However, this is redeemed by the fact that he was adored by his pupils, who loved and admired him not only for his quick intellect and broadness of mind, but also for his charming manner and moral worth.

Throughout the book Sir Michael points out the value of Bernard's different experiments and introduces criticisms and opinions of his own on the science of physiology. The value of the book is greatly enhanced by these opinions of Sir Michael — shorn of them the book would deal simply with Bernard's scientific life and would then be merely a simple calendar of scientific discoveries. Attention should be called to the paragraphs on pages 131-134, which beautifully sum up the value of vivisection.

Chapter IX (conclusion) is capital. It discusses experimental investigation, in which Bernard excelled, in a clean-cut, forcible and charming manner; it can be read with profit by any one, old or young, interested in scientific research. The following paragraph (page 230) is an excellent sample of some of the sound philosophy contained in this chapter; many so-called scientists would do well to ponder over it, the longer the better.

"An hypothesis may be good or may be bad, may be fruitful or may be barren. This may, on the one hand, depend on the very nature of the hypothesis, which may, even at the outset, in its very origin, be worthless and wrong. On the other hand, failure or success may depend on the framing of the experiment by which the hypothesis is tested. Here, too, the imagination comes into play. The man who constructs an hypothesis without supplying an adequate programme for its trial by experiment is a burden to science and to the world; and he who puts forward hypotheses which by their very nature cannot be so tried is worse, for he is a purveyor of rubbish."

The book contains an interesting frontispiece — a photogravure of Claude Bernard. The letter-press is clear, the paper and binding satisfactory. The book is full of information regarding the physiologists of Bernard's time; it is good all through and no one reading it will ever regret doing so.

Practical Diagnosis. The Use of Symptoms in the Diagnosis of Disease. By HOBART AMORY HARE, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Fourth edition, enlarged and thoroughly revised. Pp. 623, with 205 engravings and 14 full-page colored plates. Philadelphia and New York: Lea Brothers & Co. 1899.

A fourth edition of a book within three years certainly attests its popularity. Few changes have been made in the text of this edition. Dr. Hare has succeeded in producing an eminently practical treatise, in which are to be found, with small expenditure of time, the essential morbid symptoms as manifested by the various organs of the body. Both the plan and execution of the book are admirable. It is of interest to note how prominent a place the nervous system fills in a consideration of disease from the standpoint of symptoms. The type and illustrations are excellent and reflect much credit on the publishers.

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MEDICAL MEN IN THE ENGLISH AND AMERICAN ARMY.

THERE is a certain interest attaching to the fact that the medical corps of the English army is being exposed to the same sort of criticism that befell our Medical Department during the recent war with Spain. It is claimed that the medical service is undermanned and that the best men seek other fields than the army for the prosecution of their professional work. No doubt both of these facts are true. What suffices for a peace footing is absolutely inadequate for the exigencies of an active campaign, and a certain confusion and inefficiency inevitably results. The reason for this has been clearly and forcibly presented in a recent paper by Colonel Dallas Bache, United States Army, to which we have already in another connection had occasion to refer editorially. Colonel Bache points out the relatively small need of a large force of medical men during peace, and shows how absolutely the situation is changed the moment large camps are formed, with the sanitary problems which such camps entail, not to speak of the treatment of those wounded in action: Apropos of the death on the field of a British medical officer, the *Medical Press* makes the following somewhat feeling comments:

"This sad incident again forcibly recalls the risks run by our non-combatant *confrères* in the discharge of their duties and it emphasizes the little-mindedness of those who make a point of taunting the officers of the Army Medical Corps with the fact that they do not belong to the combatant branch of the service. It was the Duke of Cambridge who described Sir George Robertson, the defender of Chitral, as "a brave civilian." A great deal of notice was taken of this sneer at the time, and it is never likely to be forgotten. Such repeated exhibitions of official bad taste and jealousy are answerable for the medically undermanned condition of the army at the present time. It was pointed out last week that the medical service of the army is in need of nearly 500 officers in order to place it upon a proper footing as to efficiency. If this be the real state of affairs, it is an astounding revelation of what the trifling with the Medical Department by the War Office has led to. There is nothing which can compel young medical men to join the army, and until the War Office make up their minds to treat the Department properly, the army will have to do without medical officers."

We are glad to say that no such extreme state of affairs exists in this country. There has, of late, been much just complaint, it is true, of the lack of authority given medical men and their comparatively subordinate military rank, but, so far as we are aware, there has not been, nor is there likely to be, any sneering at the Medical Department on the part of the military branch of the service. At the same time the fact certainly remains, that medical men in the army are not accorded privileges and respect worthy of their professional attainments, and are regarded rather in the light of outsiders than as an integral and necessary part of the military organization. The inevitable consequence of this has been what we are now seeing, according to the English medical press, in England, and what we have been and are still going through in this country. An insufficient number of men enter the medical service of the army, and those who do enter it are, on the whole, not among the best of the younger men of the profession. It is clear that a medical man who has a proper conception of the dignity of his calling is not willing to belittle his profession and himself by taking an unduly subordinate rank, with small hope of adequate promotion. Out of the whole situation has grown the system of contract surgeons, which, in the opinion of those in a position to judge, is doing much to bring down to a still lower level the position of the Medical Department. That the conditions in the English army are very similar to those in our own is evident from the unprejudiced press comments to which we have already referred. It is clear that the medical problems of the future in connection with armies in camp or action are of a very different sort from those existing twenty-five years ago. We absolutely require men of the highest degree of scientific training; we need sanitarians, bacteriologists and physicians in the broad sense as much or more than surgeons, who have up to this time, and rightly, usurped the entire field.

The conditions have changed, and with these changed conditions, the attitude toward the Medical Department must also change, if the improvements for which we look are to be attained. In this connection we would call the attention of our readers to a letter in our last issue from Dr. Edward L Munson, United States Army, in which, after strongly criticizing the present system of contract surgeons, he concludes as follows:

"The remedy for the above conditions is simple, and is in the power of the medical profession of the country to administer during the next Congressional session. All medical men serving with troops should be commissioned officers having a permanent status and possessing equal prerogatives with officers of other departments. They should be sufficient in numbers to properly cope with any emergency. In the few instances where outside and temporary appointments may be necessary, such action should be taken only after the attainment of the standard required in the regular service and the appointees should be commissioned as officers of volunteers. They should be in a position to demand as rights what too many line officers are prone to regard as concessions. They should all possess the power of command, a power the proper exercise of which has been demonstrated by General Wood and others to depend upon the man rather than upon the calling which he has chosen in life. In conclusion, it behooves the medical profession at large to protect the rights of its representatives in the military service, and that the necessity is actual rather than theoretical is shown by the fact that at the present time there are only 187 regular medical officers and over 400 contract surgeons serving under the colors."

Our technical knowledge is insufficient to give weight to anything we might say about ways and means of instituting reforms, but of one thing we are absolutely sure, and that is, that as members of a learned profession, we should not rest satisfied until a place of complete dignity has been gained for the physician, whether in military or civil life.

◆

THE PUBLIC HEALTH AND COMMERCE: LEGITIMATE AND ILLEGITIMATE QUARANTINE.

The action of the Board of Health of New York in refusing to permit a cargo of coffee to be landed in that city, after it had been treated and certified as safe by the health officer of the port, and this action approved by the head of the Sanitary Bureau of the Federal Government, raises a most serious question with merchants as to what rights and protection they have at the hands of our Government in the pursuit of legitimate commerce.

The spectacle is that of a board of health supposed to be dealing with a purely sanitary subject from a purely scientific standpoint, whose untrained members outnumber, outvote, and effectually discount the experienced and scientific members, whose training and experience have fitted them for the treatment of such questions.

Is it politics between State and city, or the arrogant assertion of superior physical force? Of what further use are professional members on such a board? Of what further use can the Federal Government be in assuming to direct or advise in matters pertaining to the public health in the face of the present action of the New York Board of Health?

The local Board of Health has the authority to prohibit the docking of vessels and the landing of cargoes in the city of New York. The entry of a vessel has been made at the New York Custom House, and neither the Federal officials at New York nor at Washington can permit such vessel or cargo to clear for any other American port. The vessel lies in the harbor at an expense, to owners of the cargo, of $250 per day, and the cargo is refused a landing.

The Boston Board of Health, having control of its port quarantine, has been asked what it could do with such vessels and cargoes as are now denied entrance in New York, and it has replied that it would discharge the cargoes at quarantine, disinfect cargo and vessel there, just as if conscious that either or both were infected, and immediately permit the docking of vessel and landing of cargo.

It strikes us that it is only fair to trust the officers in charge of the New York and Boston quarantines, they having all necessary facilities and experience for such work, as being capable of disinfecting such cargoes for the absolute safety of the public health. If this can be done, and we have no doubt that it can, the business interests of the country would seem to demand that it should be done without unnecessary delay. There are said to be at least ten more cargoes of coffee on the way to New York from Santos.

◆

ANNUAL REPORT OF THE MASSACHUSETTS SCHOOL FOR THE FEEBLE-MINDED.

The forty-second report of this admirable institution shows continued progress in the work to which it is devoted. The average number of inmates during the past year has been 605, with a cost of but $3.22 a week for each individual.

The event of greatest importance to the institution during the year has been the acquisition of a large tract of land, 1,660 acres in all, in Templeton, Mass., for the uses of the school. This has been necessitated in great measure by the constantly increasing demands made upon the school in Waltham, and also by the desire on the part of the superintendent and trustees to provide employment for the able-bodied inmates who have reached adult life, but whose mental state does not permit them to care for themselves. It is, in other words, the colony system applied to this defective class, as has been so successfully done with epileptics. The land selected for the purpose in and near Templeton is of the roughest description, but nevertheless with many natural advantages in the way of woods and hills. It is proposed to transfer the larger boys and adults whose ability fits them for the somewhat rough life, as soon as possible, in order that the reclaiming of the land, and the establishment of a working colony may be as little as possible delayed. It is hoped that the transfer of one hundred able-bodied males may be made in the spring of 1900, and that the work of cultivating the land may forthwith begin. The plan, which appears eminently feasible, is outlined by Dr. Fernald, the superintendent of the institution, as follows:

"The large extent of the estate seems to make it necessary that the first two colonies should be located some distance apart, in order that the boys may live near the barns, fields, pastures and wood-lots where they will be employed. With no elaborate buildings to care for, they can at once begin to produce milk, butter, eggs, potatoes, apples, beans, etc. The parent school at Waltham will provide a market for all the surplus farm products. In the winter they will be kept busy with the care of the stock and the cutting of firewood for cooking and heating purposes. In addition to the farm work, the boys can begin the preparations for the building for the next colony, the site of which would be determined by the location and character of the work to be done by the boys who are to occupy that building. As numbers increase and as other areas of land are cleared and developed, other farm colonies would be organized. In time certain work would be specialized, and a group of boys would live near the central laundry building, where they would be employed; another near the shops for carpenter, blacksmith and other mechanical work; another near the poultry farm, etc. The plan for providing for this class does not contemplate the organization of a conventional institution, but the gradual development of an agricultural and industrial community, our people living in simple, inexpensive dwellings, similar to those in other farming communities. This community will eventually have an amusement hall, a saw mill, a grist mill, a tailor shop, a paint shop, etc., every sort of employment and every sort of recreation, everything, in short, that goes to make up the life in a typical country village. The class of cases now and hereafter to be transferred to Templeton should include only those who have received a thorough course of school training and discipline and manual and industrial training at the school department at Waltham. Untrained and undisciplined, they would not do well under the conditions we expect to establish. Each year a certain number of adults would be promoted from the school department to citizenship in this community."

We shall watch with much interest the development of this plan, which certainly offers at least a partial solution of the difficult question of the disposal of this class of deficient persons, whose lives outside an institution are worthless to themselves and a constant source of anxiety to their friends. If we can make the feeble-minded in a measure self-supporting and proportionately self-respecting members of their own community, we are certainly doing a service of the highest importance, and this service it seems assured Dr. Fernald is about to accomplish.

◆

MEDICAL NOTES.

Small-Pox in Quebec. — A mild type of small-pox is reported to be epidemic in Kamarouska County, Quebec.

Osteopaths and Christian Scientists in West Virginia. — The courts in West Virginia have been appealed to for a decision whether osteopaths and

Christian Scientists are practitioners of medicine and whether, if such, they should not be subject to the State law requiring every practitioner of medicine to take examinations before the State Board.

A Society of Bacteriologists. — It is proposed to organize a society of American bacteriologists to meet during the Christmas holidays, in affiliation with the American Society of Naturalists.

Lepers in Guam. — It has been suggested by Lieutenant-Commander Coltman, United States Navy, that the lepers in the Island of Guam be removed to Molokai, the leper settlement in the Hawaiian group.

The Study of Malaria. — It is announced that an institute for the study of malaria has been established as a department of the St. Petersburg Institute of Experimental Medicine. We sometimes wonder where specialism will end.

An Answer (?).— The *Medical Record* announces the following answer to a medical riddle, with the authority: "Can we diagnosticate obliteration of the receptaculum chyli?" — Andrew H. Smith, M.D., in the *Medical Record.* Why, certainly.— *The Sun.*

A Centenarian. — Caleb Baldwin, of Newark, N. J., whose father was a soldier in the Continental Army during the Revolution, celebrated his hundredth birthday on November 28th, and on this occasion a delegation from the Sons of the American Revolution presented to him a gold badge of the society. During his younger days he served for ten years in the New Jersey Militia, and he was in the parade in Newark that was reviewed by Lafayette in 1824.

Competition for the Senn Medal. — At the meeting of the Surgical Section of the American Medical Association held June 4, 1897, Dr. Nicholas Senn offered to donate annually a gold medal of the value of $100. for the purpose of stimulating surgical research. The offer was accepted. The committee for this year, consisting of Drs. W. L. Rodman, of Philadelphia. A. J. Ochsner, of Chicago, and H. Horace Grant. of Louisville. desire to announce that: A gold medal of suitable design is to be conferred upon the member of the American Medical Association who shall present the best essay upon some surgical subject. The competition for the medal will be closed three months before the next annual meeting of the American Medical Association, and no essays will be received after March 1, 1900. Information may be obtained from and all communications should be addressed to Dr. W. L. Rodman. Chairman, 1626 Spruce Street, Philadelphia.

Organization of Acting Assistant Surgeons, United States Army. At a meeting of active and retired acting assistant surgeons of the United States Army, held in New York, December 5th, for the purpose of formulating a plan to obtain from the Government certain privileges and payments claimed to be due them, a permanent organization was formed under the title of the Association of the Acting Assistant Surgeons of the United States Army in the Spanish War. Dr. Azel Ames, of Massachusetts, was elected president. The relief to be sought at the present session of Congress is to give to each the assimilated rank, pay and emolument of a first lieutenant (staff); full payment for properly granted leaves of absence; commutation of quarters when Government quarters are not found; mileage and travel pay; same rights and eligibility to pensions and to land and other emoluments that attach to assistant surgeons of the United States Army, regular or volunteer; same allowance of extra pay that was given to officers and men of the United States Volunteers in the late war, and preference for appointments over those who have not had previous service in the medical corps of the army and navy, and the Marine-Hospital Corps of the United States. The Treasury officials announced that the salaries of acting assistant surgeons were affected only by the act of Congress that provided for them the amount of $150 per month; that they were not entitled to extra pay provided by Congress for volunteer officers and enlisted men, because they were attached to no regular regiments. It appeared after the war that these officers were neither regulars nor volunteers, and the contracts and subsidiary agreements with the surgeon-general's department were annulled.

Small-Pox in Hull, Eng. — Since the commencement of the outbreak at Kingston-on-Hull on March 2, 1899, there have been admitted into the hospitals 588 persons suffering from small-pox. Until about the middle of October the outbreak had not assumed serious proportions. The greatest number admitted in any one week was for the week ending November 25th, namely, 127; the highest number of admissions in one day being 29, which occurred during the same week. Only very few and exceptional cases have been treated at home, and at present all known cases excepting one are isolated in hospital. The origin of the outbreak was possibly due to imported cases, mild and unrecognized. and latterly the diffusion of the infection has no doubt been due to the old hospital, at which institution. however, patients have now ceased to be admitted. — *Lancet.*

BOSTON.

Acute Infectious Diseases in Boston. — For the week ending at noon, December 13, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 71, scarlatina 31, measles 44, typhoid fever 13.

NEW YORK.

City Wastes Disposal Company. — Capt. F. M. Gibson, U. S. Army, retired, who was deputy superintendent of street cleaning under Col. George E. Waring and retains that position in the present administration, has organized the City Wastes Disposal Company, which offers to put at the service of municipalities many of the plans which were proved by Colonel Waring to be successful in New York. The company will, in cases where it is desired, furnish plans for the disposition of refuse and garbage, build the plants and either train a force of men for their efficient operation or operate them itself under contract. It also offers to organize a street-cleaning force for any municipality and train the men until this department is capable of independent management.

Selling of Cigarettes — The Board of Aldermen has passed an ordinance making it a misdemeanor to sell cigarettes to persons under eighteen years of age.

The Lying-in Hospital. — In the last annual report of the Society of the Lying-in Hospital, the advance sheets of which have just been issued, Controller Coler's recent investigation into the appropriation of municipal funds for private charities is criticised. "There was apparently no investigation by the committee," it says, "as to what destitution and suffering existed in the cities where no appropriations were made to private hospitals or institutions." The recommendation made by the Controller's investigating committee, that the further granting of public funds in the city of New York be discontinued, is condemned, and the report goes on to say: "The Society since 1896 has received from the city to the extent of $12,000 annually, although performing the largest maternity service in this country, and, on account of the aid it has rendered the city in the treatment of more than 2,300 of its destitute poor during the past year in childbirth, has suggested a *pro rata* allowance for cases cared for in its outdoor department. Should nothing be granted, a serious and unfortunate curtailment of the Society's good work must necessarily follow." Besides his original gift of $1,000,000 for the purpose of erecting a new building on the hospital site, at Second Avenue and 17th Street, it is announced that J. Pierpont Morgan has recently contributed an additional sum of $250,000, rendered necessary to carry out the architect's plans, on account of the increased cost of building materials, especially iron and steel. Mr. Morgan has also donated two city lots on 18th Street, adjoining the hospital, which gives an increased area for building purposes of 3,920 square feet and makes available a total space of 21,750 square feet; his gifts to the Society now aggregate in value over $1,350,000. Patients cared for in the old hospital building have numbered, altogether, 1,450, while certificates have been granted to 136 nurses, each of whom received three months' instruction, and 1,323 students have successfully completed the hospital course in obstetrics. During the past year 2,126 patients have been treated in their own homes and 182 (a smaller number than usual, owing to the discontinuance of the ward service in April on account of the demolition of the building), in the hospital. Until the new hospital is completed by January 1, 1901, it is expected the Society's work will be limited to the care of women in their own homes.

Bequests. — By the will of Vice-President Hobart the sum of $5,000 each is left to the Paterson General Hospital, St. Joseph's Hospital of the City of Paterson, and several other local charities. By the will of Patrick Callahan, formerly a New York lawyer, who died recently in Poughkeepsie, $175,000 is left to be divided equally among five charitable and religious institutions, one of them being the New York Foundling Asylum.

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Miscellany.

ANOTHER MEDICAL VICTIM OF PLAGUE.

It is reported that Dr. Camara Pestana has died at Lisbon of plague contracted while studying the disease at Oporto. Dr. Pestana was chief of the Bacteriological Institute at Lisbon, and an enthusiastic investigator in the field of bacteriology. His contributions to scientific subjects are written in Portuguese, and hence are less known than they would be were they in a language generally read. Commenting on his death the *Medical Press* writes:

"He was dissecting the body of a patient who had died from plague, and in order to extract the virus more thoroughly for analysis he put aside his instruments and worked with his fingers. The poison entered his system under the finger nails and he was struck down with the terrible disease which he was investigating. He was at once moved to an isolated ward set apart for plague sufferers, and there he set himself to study his own case and to record for the benefit of humanity his own symptoms and the course of the disease. He refused to see his brother for fear of infection, and in every way, even in making arrangements for his own funeral, he took every precaution to prevent the spread of the plague. His mind and will conquered his bodily sufferings until the very end, and even as he died he was still trying to indicate to those around him the lessons of his own case. He left a letter for the Queen of Portugal begging for her influence in favor of his colleagues at the Lisbon Bacteriological Institute. So died the heroic doctor, who, as our correspondent says, "had toiled for months amid the horrors of the plague hospital and dissecting-room, and at last gave his life a willing sacrifice for the benefit of the whole world."

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LEGISLATION AND THE CONTROL OF VENEREAL DISEASE IN RUSSIA.

In 1897 a Pan-Russian conference upon syphilis and venereal disease was held in St. Petersburg and a brief record of its labors appeared shortly after in the columns of the *Lancet*. A commission has been formed and is now sitting to carry out, as far as may be practicable, the recommendations made by that conference, more particularly as regards preventive legislation. The interval of two years has been taken up by collecting further information from the governors and other local authorities throughout the country as to the advisability and practicability of carrying out the recommendations in question. Circulars were addressed to these authorities and their replies are stated to form a mass of most valuable material relating to the prevalence and prevention of venereal diseases in Russia. The immense majority are agreed that the measures at present in force are entirely inadequate and that there is great need for radical changes in the law and in the powers of local authorities to deal with the evil. The greater number of replies are also in favor of leaving the control of the necessary measures in the hands of the local or municipal authorities, a minority preferring that the central Government should take up the matter and that the cost of measures should be provided out of Government funds. Fresh legislation may be expected in the near future dealing with the whole subject of syphilis and venereal disease in Russia — diseases which, as has more than once been pointed out in these columns, are almost incredibly rife in that country. — *Lancet.*

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INSANITY IN THE JURY-BOX.

The *Philadelphia Medical Journal* calls attention to the following significant case:

"A medico-legal point of great interest and importance has been raised by the alleged insanity of one of the jurymen in the recent Ingham-Newitt trial in this city. The facts, as stated, are that a member of the jury became violently insane eight days after the rendering of the verdict and had to be taken to an asylum. The certificate of one of the asylum physicians says that the man when received was very insane, that he was the subject of delusions and auditory hallucinations, and that during the last ten years he had been admitted to the asylum five or six times with similar attacks, and that his periods of maniacal excitement lasted from three to six months. So far as we know, the case is unique in the annals of medical jurisprudence, and requires for its determination a nice discrimination of all the facts.

"From the purely medical standpoint there can be no doubt about the diagnosis. The patient is evidently the victim of recurring mania; and how such a man could ever have been permitted to sit upon a jury passes ordinary lay comprehension. The vital point in the case hinges upon the probable mental state of such a patient only eight days before the outbreak of his maniacal attack. It is well known to alienists that such an attack is always preceded by a prodromal period during which the symptoms are gradually culminating, and there are few experts, we judge, who would be willing to assert that such a patient with such a history could be in a perfectly normal mental state during this prodromal period. The testimony of non-experts, such as his fellow-jurymen, in favor of his sanity, should be received with great caution, because it is well known that these prodromal changes are often most effectually controlled and concealed by the patient. Certainly in the case of a man who had already passed through six maniacal attacks in ten years, the presumption is strongly in favor of his being already in a morbid mental state only eight days before the pronounced outbreak of his attack. The determination of such a case, it seems to us, calls for the highest exercise of the judicial function, aided by expert testimony, and its decision will be regarded with great interest by all who are concerned with the problems of medical jurisprudence."

Correspondence.

DEATH-RATE OF UNITED STATES TROOPS IN THE PHILIPPINES.

Boston, December 6, 1899.

Mr. Editor: — Could there be a more ridiculous blunder than that which appears in the report of the Secretary of War, to the effect that the United States troops in the Philippines have a lower death-rate than the average of American cities, as shown in the following quotation? "The significance of the annual rate of death from disease in the Philippines (17.20 per 1,000) may better be appreciated by comparison with the rates in some of our well-known American cities."

The annual death rate per 1,000 is: Washington, 20.74; Boston, 20.09; San Francisco, 19.41; New York, 19.28; Baltimore, 19.10; soldiers in the Philippines, 17.20.

Here is an attempt to compare things that are absolutely incomparable, that is, the death-rate of young and vigorous men, at almost the healthiest age of life with the general population of cities embracing people of all ages, from infancy to old age. One might almost as well attempt to compare the death-rate of a university or boys' school with that of a foundling asylum or old ladies' home.

The actual death-rate of young men from twenty to thirty years of age (the average age of soldiers) in America is only seven to seven and one-half per 1,000, or considerably less than half that of the Philippine army.

Medicus.

RECORD OF MORTALITY

For the Week ending Saturday, December 2, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,550,053	1147	370	10.17	21.33	1.17	1.71	4.86
Chicago . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,266,832	—	—	—	—	—	—	—
St. Louis . . .	623,000	—	—	—	—	—	—	—
Boston . . .	539,416	206	59	6.86	24.01	—	1.96	3.92
Baltimore . .	506,389	155	43	9.10	—	.65	.65	5.85
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	305,000	110	31	14 40	16.20	4.50	5 40	.91
Washington .	277,000	102	28	13.86	13 86	.99	.99	8 91
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	66	20	18.12	16.61	7.55	5.04	3.02
Nashville . .	87,754	29	8	6.90	6.90	—	6.90	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	111,732	37	11	8.10	5.40	—	—	5 40
Fall River . .	103,142	20	8	15.00	10.00	10.00	5.00	—
Cambridge . .	92,520	26	7	11.55	7.60	7.60	3.85	—
Lowell . . .	90,114	26	10	7.60	11.55	—	—	3 85
New Bedford .	70,511	21	4	9.52	19.04	—	—	4.76
Lynn	68.218	—	—	—	—	—	—	—
Somerville . .	64,394	20	8	15.00	30.00	—	5.00	—
Lawrence . .	59,072	22	4	16.60	4.15	—	—	8.30
Springfield . .	58,266	15	4	20.00	6.66	—	—	13.33
Holyoke . . .	44,510	11	7	27.27	9.09	18.18	—	—
Brockton . .	38,759	—	—	—	—	—	—	—
Salem	37,723	5	1	—	20.00	—	—	—
Malden . . .	36,421	11	4	—	9.09	—	—	—
Chelsea . . .	34,235	13	3	7.69	—	—	—	7.69
Haverhill . .	32,651	9	2	11.11	33.33	—	—	11.11
Gloucester . .	31,426	6	—	16.66	—	—	—	16.66
Fitchburg . .	30,523	4	2	—	—	—	—	—
Newton . . .	30,461	6	2	16.66	16.66	—	16.66	—
Taunton . . .	28,527	5	1	—	20 00	—	—	—
Everett . . .	28,102	2	1	—	50.00	—	—	—
Quincy . . .	24,578	6	—	—	—	—	—	—
Pittsfield . .	23,421	5	—	—	—	—	—	—
Waltham . .	22,791	5	1	—	20.00	—	—	—
North Adams .	21,583	5	—	—	—	—	—	—
Chicopee . .	18,316	4	2	—	50.00	—	—	—
Medford . . .	17,190	2	2	—	—	—	—	—
Newburyport .	15,036	7	1	—	—	—	—	—
Melrose . . .	14,721	3	—	—	—	—	—	—

Deaths reported 2,123; under five years of age 646; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 216, acute lung diseases 392, consumption 249, diphtheria and croup 104, typhoid fever 41, diarrheal diseases 29, measles 14, cerebro-spinal meningitis 11, scarlet fever 11, whooping-cough 7, erysipelas 6.

From measles New York 11, Boston, Pittsburg and Providence 1 each. From cerebro-spinal meningitis New York 3, Somerville 2, Washington, Worcester, Lowell, Lawrence, Springfield and Holyoke 1 each. From scarlet fever New York 7, Boston and Baltimore 1 each. From whooping-cough New York 4, Pittsburg 2, Baltimore 1. From erysipelas New York 2, Baltimore, Washington, New Bedford and Lawrence 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending November 25th, the death-rate was 19.3. Deaths reported 4,216: acute diseases of the respiratory organs (London) 350, measles 117, diphtheria 97, fever 64, whooping-cough 58, scarlet fever 41, small-pox (Hull) 22.

The death-rates ranged from 12.5 in Huddersfield to 24.6 in Salford: Birmingham 24.0, Bradford 16.3, Cardiff 15.2, Derby 13.2, Liverpool 13.8, London 17.5, Manchester 19.5, Newcastle-on-Tyne 19.2, Nottingham 19.8, Portsmouth 23.5, Sheffield 22.7, Sunderland 18.3, West Ham 16.8.

METEOROLOGICAL RECORD

For the week ending December 2d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S...26	29.95	37	43	31	67	48	58	N.W.	W.	9	6	O.	C.	
M..27	29.91	37	42	32	65	58	62	N.W.	S.	10	5	C.	O.	
T.. 28	29.80	42	46	38	65	69	67	S.W.	S.	7	7	O.	O.	
W..29	29.71	44	53	35	82	65	74	W.	W.	9	8	F.	C.	
T...30	29.82	42	47	37	77	77	77	W.	S.E.	1	3	O.	O.	
F....1	29.82	44	54	35	100	85	92	N.W.	S.E.	2	14	C.	F.	
S....2	29.60	49	56	42	80	54	67	W.	W.	10	5	R.	C.	.01
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* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 9, 1899.

D. Dickinson, medical director, promoted to medical director.

G. E. H. Harmon, medical inspector, promoted to medical inspector.

A. W. Dunbar, passed assistant surgeon, detached from the "Resolute," when placed out of commission, and ordered home and to wait orders.

R. K. McClanahan, assistant surgeon, ordered to the Washington Navy Yard.

W. M. Garton, assistant surgeon, detached from the Washington Navy Yard and ordered to the "New York."

D. N. Carpenter, assistant surgeon, ordered to the Boston Navy Yard.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DECEMBER 7, 1899.

Mead. F. W., surgeon. Granted leave of absence for one day. December 7, 1899.

Magruder, G. M., surgeon. To proceed to New York, N. Y., and report to Surgeon L. L. Williams (Immigration Depot) for special temporary duty. December 2, 1899. To procced to London, Eng., for duty. December 4, 1899.

Perry, T. B., passed assistant surgeon. Relieved from duty at New York, N. Y., and directed to proceed to Baltimore, Md., for duty and assignment to quarters. December 1, 1899.

Wertenbaker, C. P., passed assistant surgeon. To rejoin station at Wilmington, N. C. December 1, 1899.

Smith, A. C., passed assistant surgeon. To proceed to New York, N. Y., and report to Surgeon L. L. Williams (Immigration Depot) for special temporary duty. December 2, 1899. To proceed to Hamburg, Germany, for duty. December 2, 1899.

Blue, Rupert, passed assistant surgeon. To proceed to Genoa, Italy, for duty. December 4, 1899.

Sprague, E. K., passed assistant surgeon. To proceed to Antwerp, Belgium, for duty. December 4, 1899.

Greene, J.B., passed assistant surgeon. Relieved from duty at Boston, Mass., and directed to proceed to New York, N. Y., and report to Surgeon L. L. Williams (Immigration Depot) for special temporary duty. December 4, 1899.

Tabb, S. R., assistant surgeon. To proceed to Savannah Quarantine Station (Georgia) for temporary duty. December 2, 1899.

Grubbs, S. B., assistant surgeon. To proceed to New York, N. Y., and report to Surgeon L. L. Williams (Immigration Depot) for special temporary duty. December 2, 1899. To proceed to Havre, France, for duty. December 5, 1899.

Hobdy, W. C., assistant surgeon. To report at Washington, D. C., for special temporary duty and then to rejoin station at New York, N. Y. December 1, 1899. Relieved from duty at New York, N. Y. (Stapleton), and directed to report to Surgeon L. L. Williams (Immigration Depot) for special temporary duty. December 4, 1899. To proceed to Southampton, Eng., for duty. December 5, 1899.

Corput, G. M., assistant surgeon. Upon being relieved from duty at Baltimore, Md., to report at Washington, D. C., for special temporary duty; then to proceed to New York, N. Y., reporting to Surgeon L. L. Williams (Immigration Depot) for special temporary duty. December 1, 1899.

Thornbury, F. J., assistant surgeon. Relieved from duty at San Francisco, Cal., and directed to proceed to the San Francisco (Cal.) Quarantine Station for duty. December 2, 1899.

Goldsborough, B. W., acting assistant surgeon. Granted leave of absence for two days. December 1, 1899.

CHANGES IN THE STAFF OF THE CARNEY HOSPITAL.

Gynecologist to out-patients: **Dr. C. H. Hare**; assistant in gynecology: **Dr. J. M. Hastings**; ophthalmic surgeon: **Dr. W. J. Daly**; assistant ophthalmic surgeon: **Dr. E. W. Clap.**

James J. Minot, M.D., *Secretary Carney Hospital Staff.*

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, December 18th, at 8 o'clock.

Dr. Wm. A. Morrison, by invitation, will show two "Strong Men"; also a man who by diet and training has reduced his weight from 410 pounds to 200 pounds.

Dr. E. S. Boland will show a case of "Idiopathic Pneumothorax" which was cured by aspiration.

Paper: "Typhoid Spine," by Drs. Chas. F. Withington and Robert W. Lovett.

Arthur K. Stone, M.D., *Secretary*, 657 Boylston Street.

Suffolk District Medical Society. — The Section for Clinical Medicine, Pathology and Hygiene will hold its meeting at 19 Boylston Place, Wednesday, December 20, 1899, at 8 p. m.

At 8 o'clock: Dr. Percy Musgrave will read a paper entitled "Report of Two Cases of Acute Uremia; Venesection; Recovery."

At 8.15 o'clock: Dr. J. J. Putnam, "The Training in Co-ordination of Ataxic Patients by Fränkel's Method, with Demonstrations."

J. Bergen Ogden, M.D., *Secretary*,
Harvard Medical School, Boston.

RECENT DEATHS.

William Pitt Brechin, M.D., M.M.S.S., died in Boston, December 10, 1899, aged forty-eight years.

William A. Lockwood, M.D., of Brooklyn, committed suicide on December 8th. He was a graduate of Bellevue Hospital Medical College and afterwards pursued his medical studies in Paris. Later he settled in Norwalk, Conn., his native place, where he was for many years the leading physician and one of the most prominent medical men in Connecticut.

Edgar Miller, M.D., one of the best known physicians of Suffolk County, N. Y., died recently at his home at Sag Harbor, L. I. He was seventy-five years old and had practised in Sag Harbor and vicinity for over fifty years.

BOOKS AND PAMPHLETS RECEIVED.

Forty-fourth Annual Report of the Trustees of the Northampton Insane Hospital, for the Year ending September 30, 1899.

The Place of the Female Nurse in the Army. By Col. Dallas Bache, Assistant Surgeon-General, U. S. Army. Reprint. 1899.

Some of the Rare Forms of Hernia and Their Radical Treatment. By R. Harvey Reed, M.D. (Univ. Pa.), Rock Springs, Wyo. Reprint. 1899.

Original Articles.

DISINFECTION AND PREVENTION IN THE SICK-ROOM.[1]

BY CHARLES HARRINGTON, M.D., BOSTON.

Upon the discovery that he has to deal with a case of one of the diseases commonly denominated contagious, the physician directs that the patient be isolated, and that so far as is possible all infectious matter be so treated that it is robbed of its power to work injury to others. Whether the results of his foresight will be what they should be or a positive injury is largely dependent upon the care and thoroughness with which the preventive measures are instituted and carried out, for it can hardly be denied that half-way measures or the unintelligent carrying out of proper directions, with the consequent lulling into a sense of safety, may be productive of as much harm as absolute neglect of all precautions other than those dictated to one and another individual by a knowledge of possible personal danger.

The measures recommended for safeguarding the health of others in time of sickness comprise isolation, prevention of dissemination of infectious material, and disinfection, and these, I predict, will be enforced at no distant day by all intelligent communities not alone in the so-called contagious diseases, but in all diseases of a serious nature spread directly or indirectly by any of the excretory products of the body. Out of deference to the controversy over the right of the two words infectious and contagious to have separate and distinct meanings, I will here declare the sense in which I employ them. Infectious diseases include all those which depend upon the presence of micro-organisms in the tissues, while the contagious class of infectious diseases includes those transmissible from man to man by direct contact or close proximity. We do not commonly reckon typhoid fever, for instance, as a contagious disease, but when we read that of 206 cases of that disease investigated by Dr. Herbert Peck,[2] 28, or 13.6 per cent. were traced to direct infection in the sick-room, we must agree with him that the danger is more common than is generally supposed, and that it has not received the attention that it deserves. Lobar pneumonia and pulmonary tuberculosis are also not included in the contagious class, and yet we are not insensible of the fact that house epidemics of the former are not uncommon, and that the latter is largely spread by overcrowding and lack of ventilation.

It is not my intention to enter here upon any discussion of the important question of the advisability of enforcing what may be regarded as unnecessarily harsh measures for the suppression of tuberculosis, nor to touch upon the extension of supervision by public authority of the handling of the sick, but rather to consider the efficiency of preventive measures already practised.

Isolation.—The object of isolation is to remove the patient as completely as possible from all chance of acting as a menace to the health of others, whether dwelling beneath the same roof or not. In the dwellings of the poor it is usually most difficult and frequently impossible to isolate the patient in a proper manner because, primarily, of lack of space; in the homes of the well-to-do and of the rich, where plenty of room is available, it is not uncommonly the case that isolation is a mere farce because of failure on the part of the family to grasp the full importance of thoroughness, in spite of instruction by the attending physician and by the representative of the local authority. In the minds of many, isolation is complete when the patient is in a room by himself, with the door leading therefrom into the hall open or shut according to no particular rule, but according as accident has left it. To such minds the air of a sick-room is a deadly contagion to which the doorway, not the door, opposes itself as a most efficient barrier. We all have met and know the person well who says, "I was very careful not to enter the room, but talked with him from the doorway." Often the door is left open, and its place is taken by a sheet wetted occasionally by some disinfectant solution. To this thin obstacle, with more or less of open space below and at the sides, the morbific agents supposedly in the air are presumed to attach themselves as the natural processes of ventilation set the air in motion from the room outward; or, if not this, the agent with which the sheet has been wetted, perhaps hours ago, is supposed to exert a purifying influence upon every particle of passing air. Under either of these conditions, if infective matters are floating in the air of the sick-room there is no reason why they should not be carried to all parts of the house. Even shutting the door may not accomplish all that is desired in respect of preventing efflux of air from the sick-room to other parts of the house, as can be shown by a most simple experiment. Between the bottom of the door and the threshold there is usually a fair-sized interval through which under the ordinarily existing differences of temperature, and, therefore, of density, a constant stream of air is passing inward or outward. If one holds a lighted match near this space, the flame, if the air is in motion, is inclined one way or the other according as the leakage is away from or toward the room. Sometimes the current is so strong that the match is extinguished. This may seem to be a small matter, or, indeed, insignificant, but under some circumstances it may well be thought worthy of some extra care, in which case sandbags such as are used on window sashes may be found serviceable.

In those cases in which aërial infection is supposed to occur the ideal place for isolating the patient is an upper floor or an L which can be shut off entirely from the rest of the house, and ventilated thoroughly by direct communication with the outer air. Where such an area is not available, the room should be closed as completely as possible, and the immediately adjoining rooms should be kept well aired. In the class of cases in which aërial infection under ordinary careful attention to the excretory products is not to be expected such extensive precautionary measures are not necessary, and here the main points to be considered are the prevention of dissemination of infective material and the best method for the immediate destruction of the morbific agents as they are yielded by the patient.

Prevention of dissemination.—It is quite unnecessary to dwell upon the precautions always observed by careful, experienced practitioners against the carriage of infective material by themselves from the sick-room, but it may not be out of place to mention the carelessness displayed by the thoughtless but enthusiastic beginner whom we all have seen leaning down upon the mattress and bedclothes, supporting himself by his hands, examining whatever attracts his attention, whether it be the body of the patient or the vessels containing the excretory products, and ever and anon stroking with his now possibly infected hands his hair and beard, or rubbing them against his own clothing or that of his neighbor, or hiding them in his pockets. Such carelessness on the part of the nurse in attendance would be contrary to her training, and on the part of the student or young practitioner is equally contrary to the instruction which he is supposed to have received. Absolute care in this particular is imperatively necessary on the part of all who visit or are in attendance in the sick-room.

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[1] Read before the Boston Society for Medical Improvement, October 23, 1899.

[2] British Medical Journal, Sept. 2, 1899.

In preparing the room for the reception of the patient, it should be borne in mind that the less furniture there is present, the less there will be to undergo the process of disinfection on the termination of the sickness. Above all, the carpet should be removed at the very outset, and all upholstered furniture and draperies with it. Ordinary dusting and broom sweeping, which stir up the dust so thoroughly, should be absolutely interdicted, and cleaning and wiping with mops and cloths not wet, but well moistened with a disinfectant, should be substituted.

The used bed linen, the patient's body linen, the napkins, towels and other cloths that may become infected may be put to soak in disinfectants at once and on the spot, or may be placed within cotton bags wet with disinfectant, and conveyed at the proper time to the kettle, into which, without further handling and without opening, the whole is placed and then boiled for an hour.

The uselessness of attempting aërial disinfection in the presence of the patient is not apparently as well recognized as it should be. The placing of small amounts of chloride of lime, carbolic acid, iodine, sulphonaphtol and other disinfectants in saucers and other open dishes, and distributing them about the room has no other effect than the production of odors which may be an annoyance to the patient. If disinfection could be so easily accomplished, the local boards of health would be relieved of much work and very large expense. With the agents at present available for germicidal action, aërial disinfection in the presence of the patient is absolutely impossible, for they must be used in such concentration as to be quite irrespirable. But we must not overlook the disinfectant power of direct sunlight and the beneficial effects of constant dilution of the impurities of the air by proper ventilation. The latter is materially assisted by the maintenance of an open fire when climatic conditions will not permit cross ventilation by means of open windows, and thus practical utility and the conferring of cheerfulness are combined.

The attention on the part of the nurse to hands, hair, clothing, etc., and the frequent necessity of providing separate outfits of eating utensils for the patient, and of destroying all unused portions of his meals, need no more than passing mention.

Disinfection of the excretory products.—The materials which require thorough disinfection include those from the mouth, throat and nose in diphtheria and whooping-cough; from the lungs in influenza, pneumonia and pulmonary tuberculosis; from the skin in the acute exanthemata, especially during desquamation; vomitus in yellow fever and, conditionally, in other diseases; stools in cholera, dysentery, typhoid fever and tubercular conditions of the alimentary canal; and the urine in typhoid fever, and perhaps, also, in some of the exanthemata. These may be destroyed in two ways according to circumstances. Those in not too large bulk and not too fluid, such, for example, as sputum and discharges from the nose, mouth and throat, received on cloths, may be most effectually disposed of by burning, if there is a fire immediately at hand. Bulky matters such as stools, urine and vomitus, and objects actually or possibly infected by them, such as bedclothing, body linen, etc., which must be purified, but not destroyed, must be brought into intimate contact with some disinfectant which fulfils the requirements of a good germicide, namely, that it shall kill all forms of bacteria and spores within reasonable limits of time, shall not be made inert by organic matters with which the bacteria are associated, and shall not subject the attendant to any dangerous consequences. If, in addition, it be cheap, free from disagreeable odor, and incapable of injuring cotton, linen and other textiles either by causing stains or by reducing their strength, so much the better. Where shall we find such an agent? Shall we find it in the shops put up in pints and quarts with attractive labels which reveal or not, according to the maker's fancy, the nature of the active ingredient? No, we are not likely to find it there; at least, that is my experience.

In March last Dr. Richard M. Pearce and myself reported at a meeting of the Boston Society of Medical Sciences the results of our examination of such proprietary disinfectants as we could find in the apothecary shops of Boston, and it may not be out of place to report them again in condensed form at this time, for the brands obtained and examined include several that are held in high esteem by the profession generally. The list included the following: Marsh's Instantaneous Disinfectant, Disinfectine, Ozonos, Bromochloralum, Royal Disinfectant, Excelsior Disinfectant, Phenol Sodique, Hovey's Chloride of Zinc, Platt's Chlorides, Carbolic Purifying Powder, and Solution of Chlorinated Soda. These were tested with anthrax spores, typhoid cultures, typhoid stools, diphtheritic membrane and tuberculous sputum. The mixture of material and disinfectant was intimate, and the length of time of the contact was in each case two hours. So far as demonstrating efficiency is concerned, the results were distinctly disappointing, for but one of this list was successful in more than half of the ten tests to which each was subjected, and this one failed in three. One of them failed eight times, another nine times, and three failed every time. Not one of them was successful in sterilizing the tuberculous sputum. Those which failed in all the tests were Carbolic Purifying Powder, Royal Disinfectant, and Phenol Sodique. Those that failed eight and nine times were, respectively, Hovey's Chloride of Zinc and Bromochloralum.

In justice to the makers of these preparations, it must be said that in no sense can any of these disinfectants be properly classed as a fraud, for chemical analysis shows that they are one and all composed of substances that are generally regarded as disinfectants, and are so recommended in many of our standard works on public health. The substances found include chloride of zinc, chloride and sulphate of aluminum, alum, permanganate of potassium, salts of lead, iron and copper, neutral tar oils, hydrochloric and nitric acids, and others. We must, therefore, believe that they are manufactured and sold in good faith. But even so, we cannot use disinfectants that kill *almost* every time, or that kill only occasionally; they must kill *every* time, and we must, therefore, look elsewhere.

Shall we use corrosive sublimate? Its action on many substances with which it may come in contact, the readiness with which it is thrown out of solution and made inert by matters associated with the bacteria, and its very poisonous character make this agent unreliable for general purposes and undesirable. Shall we use caustic lime? Lime is a good disinfectant but it has its disadvantages. It must be used in the freshly slaked state; it must be applied in very considerable amounts; it must be very intimately mixed with the material to be disinfected, for it is not very capable of self mixing; and after it has performed its office, it must be disposed of in such a way as to cause no trouble. How to do this in a city block may be quite a problem. One's first impulse would suggest throwing it into the water-closet, but such disposal would simply create work for the plumber, for the pipes would soon be occluded. Moreover, lime cannot be used for purifying linen and other textiles. Chlorinated lime is open to all the objections that apply to lime, and the additional one of having a very disagreeable odor. Where, then, shall we turn?

In addition to the agents already mentioned, we tried a five-per-cent. solution of carbolic acid, sulphonapthol, and a somewhat similar substance which I will designate solution B, both in five-per-cent. strength, and a two-and-one-half-per-cent. solution of formalin, one per cent. formaldehyde. Of these the first mentioned has for years been a favorite standby, objectionable to some only on account of its odor, and recommended for general purposes in two-, three- and five-per-cent. strength. It killed the bacilli in the sputum, but was successful only once in five trials with typhoid cultures and stools and diphtheritic membrane. The sulphonapthol solution, which cannot be praised for its odor, was also successful with sputum, and it surpassed the carbolic solution in efficiency by scoring two successes in five other trials. The remaining two preparations were uniformly successful, though it must be said that they were tried only six times each, twice with typhoid cultures, twice with typhoid stools, and once each with sputum and membrane. Our previous investigations with formaldehyde, however, seemed to us to make further tests unnecessary, and as to the solution B, it has a most disagreeable odor and is, moreover, a patented article. I will not mention its true name because I have no doubt as to one use to which this paper would be put, and because I have no desire to have even the appearance of writing "reading notices." I have no hesitation in mentioning formaldehyde, even though an enterprising concern interested in its sale makes it a practice to reprint, without permission, any articles which may serve its purpose. All formaldehyde is good, however, and, so far as I know, that sold by one is no better than that furnished by another.

Formaldehyde possesses all the qualifications of a good disinfectant, as mentioned above. In diluted form it has no unpleasant odor, it causes no injury to fabrics, it makes no stain, it is not as expensive as the cheapest of the proprietary preparations, and, most important, it kills every form of micro-organisms with which it is placed in direct contact.

I do not wish to be understood as asserting that there are no other efficient disinfectants than formaldehyde, but it happens that I cannot speak of them from the standpoint of personal experience. Doubtless there may be others as good, but it would be difficult to conceive a superior. Ten years ago Fränkel demonstrated the superiority of the cresols over carbolic acid, and within the past two years a number of preparations containing them in their various isomeric forms and in various combinations have been placed upon the market. They have been extensively studied, and the original conclusions of Fränkel have been confirmed again and again, but the most favorable reports thus far published present no results which entitle them to admission to the class with formaldehyde. A recent publication by Seybold, who investigated and compared a number of different preparations, shows that not one of them is effective against anthrax spores, which we know are quickly destroyed by formaldehyde. It is but fair to add that solution B, which we found to be so successful with stools, membrane and sputum, contains a considerable percentage of cresols.

Besides the cresols, various other organic substances have been extensively exploited within recent times, but each one seems to fail in some one or more particulars.

Whatever the disinfectant used in the sick-room, its application must be in no niggardly amount, for in practical disinfection extravagance is a greater virtue than too strict economy. The infected objects should be submerged in the solution so that the agent shall come into contact with the entire mass. In the case of stools, urine and vomitus, at least an equal volume of the disinfectant should be added and the whole should be carefully mixed. Although in the case of formaldehyde the destruction of the organisms is accomplished in a much shorter time, it is best to continue the exposure for about two hours, thus erring, if at all, on the side of safety. At the end of two hours, the sterilized excretory matters may be finally disposed of by way of the water-closet, and the bed linen and similar articles sent to the wash-tub. There seems to be no particular and good reason for supplementing complete destruction of pathogenic organisms with any further process of disinfection, but if it suits one's ideas of necessity, the customary prolonged boiling can, at least, do no harm.

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EXPERIMENTS UPON THE DISINFECTION OF ROOMS WITH FORMALDEHYDE GAS IN THE CITY HOSPITAL AT CHARLOTTENBURG, BERLIN.

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(Concluded from No. 24, p. 595.)

THIRD EXPERIMENT.

In the following trial a special effort was made to obtain bacteria of the highest virulence. The anthrax spores were obtained from cultures made from the blood of a mouse that had been infected with bacilli which had immediately previously passed through several mice. The last mouse infected succumbed in twenty hours. The others died in from thirty to twenty-four hours. The culture used was but two days old.

Pyocyaneus. — Culture from the blood of a mouse that had died, twenty-two hours after infection, of pyocyaneus septicemia.

Diphtheria. — Fresh culture from a severe case in the hospital at the time.

Typhoid. — Fresh bouillon culture, vigorous movement.

Staphylococci albi. — Culture from the pus of a septic wound.

Streptococci. — Culture from the pus of a septic wound.

Each of these forms was mixed with sterile water, and the woollen and linen fragments of cloth above described were allowed to soak in these mixtures, and thereafter dried for twenty-four hours.

From these pieces several of every kind were withheld in sterile glasses as control.

(1) The other infected fragments were arranged as follows: (*a*) Several pieces of each sort *openly* exposed to the gas; (*b*) several pieces of each sort *enclosed* between two layers of cloth; (c) several pieces of each sort *enclosed* between two mattresses; (*d*) several pieces of each sort *enclosed* in many folds of linen — eight to twelve.

TABLE II.

Bacteria.	Result of Control Cultures.	Position of the Infected Pieces in the Room.	Result after 25 Hours' Exposure to Formaldehyde.
Anthrax (spores)			
a″	Profuse growth in 24 hours.	Openly exposed.	No growth at the end of 2 weeks.
b″	" "	Between two layers of cloth.	Sparse growth of typical bacilli in 48 hours.
c″	" "	Between two mattresses.	Profuse growth of typical bacilli in 24 hours.
d″	" "	Wrapped in folds of linen.	" " "
e″	" "	Mixed with dust, in a glass.	" " "
Diphtheria			
a″	" "	Openly exposed.	No growth at the end of 2 weeks.
b″	" "	Between two layers of cloth.	Growth of typical bacilli in 48 hours; transferred to Löffler's serum: typical growth.
c″	" "	Between two mattresses.	Growth of typical bacilli in 24 hours; also upon Löffler's serum.
d″	" "	Wrapped in folds of linen.	No growth at the end of 2 weeks, either in bouillon or upon Löffler's serum.
Typhoid			
a″	" "	Openly exposed.	No growth at the end of 2 weeks.
b″	" "	Between two layers of cloth.	Growth of typhoid after 48 hours.
c″	" "	Between two mattresses.	Growth of typhoid after 48 hours.
d″	" "	Wrapped in folds of linen.	No growth at the end of 2 weeks.
Pyocyaneus			
a″	" "	Openly exposed.	" " "
b″	" "	Between two layers of cloth.	" " "
c″	" "	Between two mattresses.	Typical growth in 24 hours.
d″	" "	Wrapped in folds of linen.	Typical growth on agar and in bouillon, with marked fluorescence after 2 days.
e″	" "	Mixed with dust, in a glass.	No growth at the end of 2 weeks.
Staphylococci			
a″	" "	Openly exposed.	" " "
b″	" "	Between two layers of cloth.	" " "
c″	" "	Between two mattresses.	Sparse growth at the end of 4 days.
d″	" "	Wrapped in folds of linen.	Sparse but typical growth after 4 days.
e″	" "	Mixed with dust, in a glass.	No growth at the end of 2 weeks.

Three of the different bacterial forms, that is, anthrax spores, pyocyaneus and staphylococci, were thoroughly mixed with dust and placed in open glasses in the extreme corner of the room, from which the dust was taken out of which the bacillus mentioned in the previous trials was obtained. This was done in order to determine to what degree the dust afforded protection to the organisms against the action of the formaldehyde.

(2) Besides the infected fragments of cloth there were also exposed to the gas: (*a*) Several pieces of diphtheritic membrane from cases in the hospital; (*b*) pus that had proved virulent for a mouse and from which streptococci were obtained; (*c*) anthrax spores on agar (an old tube culture); (*d*) tubercle bacilli on glycerin agar.

(3) The following objects: Variously colored silk patent leather and common leather, soft and hard rubber, gold, steel, brass, nickel and iron, and polished wood.

(4) Several mice and a rabbit. One hundred and ninety tablets were used; approximately two grammes of formaldehyde per cubic metre. Upon opening the room at the end of twenty-five hours the tablets were found completely burned out. The same irritative effect as previously was experienced. The door was, however, immediately closed, the irritation of the gas soon ceased, and it was possible, without disagreeable results of any kind, to remain in the apartment for one hour and a half. Upon the pulse no effect was noticed, beyond perhaps a slight acceleration. The mice and rabbit were first examined and found, as before, unaffected.

It may here be noted that, in my own case, after one and one-half hour's stay in the room not the slightest conjunctivitis was present.

Cultures from the nasal membrane of the rabbit showed a colony of the staphylococcus aureus. Cultures from my own nasal mucous membrane before entering the room showed the presence of staphylococcus albus. Cultures made after the one and one-half hour above mentioned gave, likewise, colonies of the same organism.[5]

Upon the various articles in the room not the slightest deleterious effect could be found. It appears to me of particular interest and importance that the leather appeared in nowise affected. Its pliability was certainly as great as before its exposure to the formaldehyde. The objects were placed upon a chair almost directly over the disinfector. The infected fragments were washed, as before, in a sterile one-per-cent. solution of ammonia, thereafter in sterile water and placed in bouillon. They were kept in the incubator at 37° C.

As the control cultures of streptococci gave no growth, these organisms are not included in the following results. These results represent a daily observation of over two weeks (Table II).

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[5] Note the statement in connection with the suggestions of Trillat and Berlioz. Comptes Rendues, 1893, vol. cxv, page 290.

At the end of two weeks a considerable portion of the bouillon holding the pieces anthrax a'', b'', c'', d'', e'' was in each case injected into mice. The mouse injected with anthrax a'' was living a week later, without having at any time shown signs of infection. The other mice, injected with anthrax b'', c'', d'' and e'', all died within a period varying from twenty-four to sixty hours, and anthrax was demonstrated in the blood by microscopical preparations and by direct culture in each case.

(2) *Diphtheritic membrane.* — The following experiments with diphtheria membrane were made, a portion in this trial, the other portion in a later trial. They are here included together as a matter of convenience. The time of exposure (twenty-four hours) and the strength of formaldehyde, two grammes per cubic metre, were in both cases the same. The membranes were taken from fresh cases with extensive exudation in pharynx and on the palate. Cases were only included in the experiments when the control cultures, *from both the fresh and dried* membrane, were positive. The following procedure was employed:

From each membrane employed, cultures on Löffler's serum were made immediately after being taken from the throat, and showed at the end of twenty hours profuse growth of typical Klebs-Löffler bacilli. Each membrane was now divided into halves; one half was placed in a sterile glass and reserved as a control; the other half was placed in the room and exposed to the formaldehyde for twenty-four hours. At the time of opening the room the control pieces were in each case softened with sterile bouillon,[6] finely divided, and transferred to tubes of Löffler's serum. From each piece two tubes were infected. The room was then opened and the same procedure was employed with the corresponding halves that had lain exposed to the gas. The results are best given in Table III.

TABLE III.

Membrane.	Result of Immediate Control of Culture from Fresh Membrane.	Result of Control Culture from Dried Membrane after 24 Hours.	Result of Membrane exposed 24 Hours to Formaldehyde.
I.	Positive after 20 hours.	Positive after 20 hours.	Typical growth of characteristic bacilli at the end of 24 hours.
II.	“ “	“ “	“ “ “ “
III.	“ “	“ “	“ “ “ “
IV.	“ “	“ “	“ “ “ “
V.	“ “	“ “	“ “ “ “
VI.	“ “	“ “	No growth at the end of 5 days.
VII.	“ “	“ “	No growth at the end of 5 days.

In two of the above cases, namely, IV and V, there appeared in the control cultures from the fresh membranes, with the colonies of the diphtheria, also colonies of the staphylococcus aureus, streptococcus and a large bacillus. In the cultures from the dried control pieces there appeared, in addition to the bacillus of diphtheria, only the staphylococcus and the large bacillus; while in the cultures from the pieces exposed to formaldehyde the bacillus of diptheria alone appeared.

In five of the seven different membranes employed positive growth of typical diphtheria occurred when the pieces after exposure were finely divided and transferred to suitable culture medium. In two of the seven no growth whatever occurred. The control cultures, even in membrane dried for forty-eight hours, were pronounced and characteristic in every case.

(3) *Pus exposed in a sterile glass.* — Control cultures in bouillon showed, before the exposure, typical and long chains of streptococci and isolated cocci. An injection of a portion of this pus in a mouse was followed by death in five days.

Upon opening the room a portion of the pus was found dried, a portion still moist. From the dry no growth could be obtained *in bouillon* after ten days' standing at 37° C. From the moist was obtained profuse growth of the staphylococcus albus after twenty-four hours.

It may here be mentioned that a similar experiment was made with the pus-soaked dressings from a case of empyema, with like result.[7] In this case the streptococci were of unusual virulence, as evidenced by animal infection.

(4) *Anthrax spores.* — This was an old laboratory culture on Löffler's serum and was placed in the room, with the cotton wad removed, during the exposure. Cultures from this tube after twenty-four hours' contact with the gas gave positive growth of anthrax.

(5) *Tubercle culture on glycerin agar.* — Also exposed with wad removed from the tube. Cultures made from the tube after opening the room, showed at the end of two weeks very slight increase in size of the colonies.

In comparing briefly the results of the preceding experiments, we note in particular the following points:

(1) That in every case where the formaldehyde was allowed free access to the infected fragments of cloth, a sterilization of the respective fragments occurred. Not only could no growth be obtained, for instance, from the pieces previously infected with anthrax, although these pieces remained in bouillon under conditions and temperature in the highest degree favorable to the growth of this bacillus, but the injection of this bouillon into mice proved also absolutely negative in results, notwithstanding the extraordinary sensitiveness of mice to this organism. In this respect all of the experiments agree.

(2) That in the second order of arrangement of the infected pieces — where they were placed between two layers of cloth; where the gas had not free access — a difference in the results appears, a difference

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[6] The pieces were found dried and shrivelled at the end of twenty-four hours in the case of the control halves as well as the halves exposed.

[7] Too much weight should not, however, be attached to this result, as no *control* cultures were made from *dried* pus that *had not* been exposed to formaldehyde. The control cultures were made from fresh moist pus. I may say, however, that I have in other cases not connected with these experiments with formaldehyde frequently obtained profuse growth from pus after it had dried. In this indirect way, therefore, I have no reason to think that the result would have been otherwise here had it been proven.

only to be explained by a variance in virulence of the bacteria.

In the first and second trial, for example, no growth in the case of any of the organisms with which these pieces were infected occurred, even when, as in the second trial, anthrax spores were used.

In the third trial, on the other hand, a negative result with these pieces was only obtained in the case of pyocyaneus and staphylococcus. Anthrax, diphtheria and typhoid showed positive growth, and the injection into a mouse of a portion of the bouillon containing the anthrax piece was followed by death in ten hours. The anthrax spores of this third trial were obtained from a culture made two days previously from the blood of a mouse that had died in twenty hours.

The bacilli from which these spores were formed had passed for several generations through mice. They were therefore undoubtedly of a high degree of virulence. The same may be said of the diphtheria and typhoid bacilli used in this experiment.

(3) That in the third arrangement, between mattresses, and in the fourth, wrapped many times in linen, there occurred in all the trials positive growth of anthrax, without exception. By the other pathogenic bacteria there occurred in the first two trials in some cases growth, in others not. In the third trial there ensued growth from all pieces that were previously placed between mattresses, without exception of any of the various classes of bacteria, but of the pieces wrapped in linen in this experiment only the anthrax and staphylococci showed growth.

TABLE IV.

Bacteria.	Result of Control.	Position of Piece.	Result of Culture after Exposure.
Diphtheria.	Positive in 24 hours.	Openly exposed on a table.	No growth at the end of 3 weeks.
Pneumonia.	" "	" " "	" " "
Streptococcus.	" "	" " "	" " "
Staphylococcus aureus.	" "	" " "	" " "
Pyocyaneus.	" "	" " "	" " "

Interesting appears to me the result with diphtheria in this experiment: The infected fragments taken from between layers of woollen cloth or from between mattresses gave profuse and positive growth, while those wrapped in linen remained sterile.

(4) Of the greatest interest appear to me the results with diphtheritic membrane. That the drying of such a membrane encloses the bacilli in an encasement of albuminous material — penetrable perhaps only by steam — is easily understood.

(5) The fact that in every trial there was obtained from the dust in a corner of the room, after exposure to formaldehyde, a profuse growth of a spore-forming bacillus would seem to indicate that the spores of this bacillus possess great resistance. The fact, however, that profuse growth was obtained from the anthrax spores, after having been mixed with dust and exposed to the formaldehyde, would seem to indicate that the dust itself affords the spores of both organisms no inconsiderable protection. Nevertheless the fact that from the dust of an ordinary room, usually so diverse in its bacterial life, but one form was obtained indicates that for the majority of dust or air bacteria (non-spore forming?) this protection does not occur.

It must be noted that the conditions under which these laboratory experiments were conducted were much more severe than any likely to occur in practice; that much more was required of the power of formaldehyde as a disinfectant than would be demanded in the disinfection of a common room. The presence of anthrax spores in the dust of such a room would never occur in practice, and that we would ever have to do with anthrax bacilli in the disinfection of rooms is extremely unlikely.

The conditions for the further growth of any of the bacteria that might survive the exposure to the gas were in the highest degree favorable to these organisms, and afford a severe test of the power of the disinfectant. From the results of the preceding experiments, therefore, I think we may assume that the power of formaldehyde, as a disinfectant — at least in the strengh of two grammes per cubic metre air space — is, upon all objects to which the gas has free, unobstructed access, positive, and absolutely reliable; and this in the case, also, of organisms of a virulence and tenacity of life of exceptional degree.

The harmlessness of the gas itself to higher forms of life, in such concentration as would ordinarily be employed and for a moderate length of time, is of interest, although practically of little importance, since no higher forms of animal life would be exposed to its fumes. The failure of any deleterious effect upon the various inanimate objects exposed to its fumes is of great practical importance,[8] and especially so in the case of leather. For the disinfection of shoes this substance appears to me as particularly to be recommended. We have had hitherto no adequate means of disinfection for leather, especially in the form most requiring disinfection.

REMARKS BY PROFESSOR GRAWITZ.

The preceding experiments show in most satisfactory manner the efficiency of this form of formaldehyde and the reliability of the apparatus employed for all ordinary purposes of room disinfection.

The bactericidal power of formaldehyde gas, by the use of 1.5 to two grammes (1.5 to two tablets) per cubic metre air space, is proven to be fully efficient against the ordinary infectious germs, such as typhoid, diphtheria, pyocyaneus and the pyococci and even anthrax, wherever the gas was allowed free access to the organisms. Even through moderately thick covering, most of the bacteria were killed, anthrax excepted.

That large pieces of tissue, such as diphtheritic membrane, masses of purulent material, etc., were not rendered sterile by the gas is of as little account for all ordinary purposes of room disinfection as is the fact of the resistance of the anthrax spores when not freely exposed, inasmuch as in the usual practice of disinfection we should have to do only in the rarest of cases with the latter organisms, and in the former case all particles of membrane, etc., of any considerable size may be easily removed by means of a damp cloth. It is of much greater practical importance that the dust that has become infected and has fallen to the floor of the sick-room be thoroughly disinfected. That this is done, wherever the ordinary infectious germs are concerned, the above experiments have shown.

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[8] It is possible that in the case of some of the aniline colors a change might be produced by the formaldehyde. None such was, however, observed in the colors exposed — ordinary blue, red, brown, black silk.

In accordance with these investigations I have already caused a number of rooms of this hospital, infected by diphtheria, scarlet fever, measles and typhoid patients, to be disinfected by means of formaldehyde gas, and for this purpose the following rules have been formulated:

(1) All bed linen, body linen, coverlets, etc., are, as hitherto, to be disinfected by steam; likewise mattresses that during the course of the disease have become contaminated, as in the case of children and typhoid cases so often occurs.

(2) If around the bed particles of pus, sputum or the like are found, they are to be removed with cloths, dampened with sublimate solution, and burned.

(3) All objects in the room are to be moved from the wall, pillows, cushions, etc., laid over the backs of chairs or otherwise so placed that the gas has access to all sides; portières and side curtains are to be spread so that the entire surface hangs free.

(4) The windows are to be tightly closed, and the lamp made ready in accordance with the directions.

(5) At the end of twenty-four hours[9] doors and windows are to be opened, dust collected and burned, room aired and again made ready for use.

The advantages which this method has over the hitherto most inconvenient and very laborious procedures, such as rubbing of the walls with bread, washing utensils, furniture and floor with carbolic solution, sterilizing every possible article with steam, etc., are the following:

(1) A much higher guarantee of the surety of superficial disinfection than is obtained by rubbing the walls with moist bread, especially by the washing of the upholstery of furniture with carbolic solutions, since in this case one is entirely dependent upon the reliability of the workmen.

(2) The most disagreeable feature of previous methods, the injury to the wall paper, paint, hangings, etc., and the complete overturning of the contents of the room, is hereby entirely avoided. In our investigations objects of the most varied kinds, such as polished metal, iron, gold, brass, nickel, variously colored silk, fine cloth, leather and patent leather, soft and hard rubber, polished woods, paper, oil-cloths, linen, and mattress coverings, etc., remained absolutely unaffected by exposure to the gas.

(3) The cost of formaldehyde disinfection should be considerably less expensive than previous procedures, since by the formaldehyde method much less time is required by the workman.

(4) The fumes of formaldehyde are non-poisonous for human beings, when in moderate concentration, so that their penetration through cracks and crevices into neighboring rooms offers no danger to the inhabitants.

In contrast to the long-lasting odor of carbolic acid after disinfection with the same, the odor of formaldehyde disappears in a short time and acts in a high degree as a deodorizer.

For practical purposes it will now be necessary to determine the minimum time to which one may reduce the working of the gas without impairing the surety of the disinfection, inasmuch as it is very difficult often, among the poorer families, to withhold a room from common use for twenty-four hours. We have already begun experiments having this end in view.[10]

After the above experiments were completed it became more and more apparent to me that a shortening of the time of exposure was most desirable and indeed in many cases[11] absolutely imperative. It was necessary to prove, therefore, whether an exposure for a period materially less than twenty-four hours would furnish equally good results. With this end in view the succeeding experiments were instituted:

In accordance with the rule of the intensity of action of almost[12] all known disinfectants — that the degree of germicidal power is in direct ratio to the degree of temperature under which a disinfectant acts — it seemed to me probable that a raising of the temperature of the room to be disinfected might fully compensate for the diminished duration of the exposure. Accordingly a room heated by steam was employed. The method of procedure was the same as that of the experiments above given. Cotton and woollen pieces were infected and after exposure placed separately in tubes of bouillon. In the case of each bacterial form, therefore, the test was in reality repeated. The pieces were also, as before, washed in ammonia solution and then in sterile water before being transferred to the bouillon.

The following bacteria were employed: diphtheria, pneumonia, streptococci, staphylococcus aureus, pyocyaneus. The time of exposure was twelve hours. Two grammes formaldehyde per cubic metre. The temperature of the room upon closure was 21° C.; upon opening 23° C. — an average of 22° C. It may be assumed that the maximum did not exceed this point, as the regulation by steam was constant (Table IV).

TABLE V.

Bacteria.	Result of Control Cultures.	Position of Piece.	Result of Culture in Bouillon, after Exposure.
Anthrax (spores).	Positive profuse growth; 24 hours.	On a table.	Bouillon (both cotton and woollen pieces). Sterile after 2 weeks.
Diphtheria.	" " "	"	" " " "
Pneumonia.	" " "	"	" " " "
Streptococci.	" " "	"	" " " "
Staphylococcus aureus.	" " "	"	" " " "
Pyocyaneus.	" " "	"	" " " "

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[9] Written before the second series of experiments, now twelve hours.

[10] Since the above was written we have conducted experiments and published results in which we succeeded in reducing the time to twelve and even eight hours with successful result. — A. W. F.

[11] It was found, for instance, in Charlottenburg that, among the poorer classes, it was often impossible to close a room for twenty-four hours unless other quarters were provided for the family during this period.

[12] Jolles has proven that soap solutions are exceptions to this rule. Zeitschrift für Hygiene, Bd. xix, S. 126 u. 138.

Of these tubes two, containing cotton pieces previously infected with diphtheria and staphylococci respectively, were contaminated by "Gelbgrüne Sarcine."[18] Transferred to other culture medium it showed typical growth, no trace of diphtheria or staphylococci, nor did the corresponding tubes containing the woollen pieces show any growth of these forms. They were sterile at the end of two weeks. As seen by the table, all of the other tubes remained sterile.

At the end of three weeks a large portion of the bouillon from the pneumonia and from the pyocyaneus tubes, although showing no growth, was injected into the abdominal cavity of white mice, which are, for these two organisms, sensitive in an extraordinary degree. These mice are alive at the present time, three weeks later, and have at no period shown signs of infection, notwithstanding the fact that the bacteria with which the respective pieces contained in the tubes mentioned were previously infected were obtained from the blood of white mice that had died in a few hours of septicemia caused by these two organisms.

The second experiment was conducted in a similar manner. Time of exposure, eight hours; temperature of room, 20° C. (Table V).

At the end of two weeks a large portion of the anthrax of the pyocyaneus and of the pneumonia bouillon was, as before, injected into white mice, with a like negative result. These mice are at the present time living, and have given no evidence of infection.

These results appear to me to be, from a practical standpoint, exceedingly interesting and satisfactory.

Although the temperature of the room was materially higher during these exposures than the temperature in earlier trials, yet it is possible that equally good results might be obtained in a room without heat (15° C.) even by a short exposure. In winter, however, it would seem advisable, where possible, to warm the room.

I wish to express to Professor Grawitz my appreciation of the kindness with which he has assisted me in the conduct of these experiments and for the constant use of his laboratories and the clinical material of his wards. Thanks are also due Dr. Krekels for continual courtesies and aid during the work.

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THE THYROID GLAND AND THE MENOPAUSE.

BY CHAUNCY R. BURR, M.D. (HARV.), PH.B. (YALE),
Assistant Surgeon, United States Navy, Puget Sound Naval Station.

THE following case recently came under the writer's observation. A lady, fifty-six years of age, was said to have had an apoplectic stroke in London, in December, 1898. The catamenia ceased in August, 1897, since which date and up to the advent of the apoplexy various nervous symptoms had been complained of. There were flushings, neuralgias, hysterical attacks, an anesthetic area in the left ulnar nerve — more pronounced at some times than others — a red face, a full and strained look about the eyes. The pulse during this time was always quick, sometimes rapid. The body weight just before the menopause was 185 pounds; a few weeks before the apoplectic stroke it was 177 pounds; nine months after it was 146 pounds. There were also digestive disturbances, constipation, anorexia and "bilious attacks." The heart, lungs, kidneys and uterus were normal.

The apoplexy occurred of an evening. The patient was sitting quietly in her apartment in a London hotel, at peace with herself and the world, when of a sudden she found herself unable to speak. Her lips moved but no articulate speech followed. There was no headache and no mental confusion, and no loss of power save in the muscles of speech. She was got to bed and a physician called. In the morning there was a hemiplegia of the right side. The restoration of function was comparatively rapid and progressive. She first regained control of her right leg, then the right arm, and lastly her powers of speech.

Nine months after this attack, namely, in September, 1899, she again came under my care. What struck me particularly in her appearance was the flushed face, injected eye and general tremulousness. The speech was thick and she was obliged to speak slowly in order to enunciate distinctly. There was a twitching about the right corner of the mouth. The tongue was protruded slightly to the right and the labionasal fold on that side was partially obliterated. She perspired readily, had flushings as of old, and, I was told, had cataracts developing in both eyes. The pulse was full and bounding, though no fever was present, and averaged from 100 to 120 beats per minute. She was markedly emotional and wept frequently during the interview. I observed that she seemed intolerant of any pressure about the neck and frequently attempted to loosen her collar. The grip of the right hand seemed very nearly equal to that of the left and the limp in her gait was almost imperceptible. There was still an anesthetic area over the distribution of the left ulnar nerve, but the sensation in the left hand she declared to be different from that in the right. The latter was numb, but the former felt as if the skin had been soaked in ammonia water.

Physical examination revealed but little. The heart, lungs and kidneys were still negative. Both eyes were somewhat prominent and the lower lids sacculated. There was an abnormal fulness over both lobes of the thyroid gland, and an abnormal tenderness over the external occipital protuberance and the spinous process of the seventh cervical vertebra.

Her principal complaint was of headache, chiefly occipital, and her difficulty in enunciation; also of a rigidity in the posterior muscles of the neck. The headache was worst in the early morning, namely, at about five o'clock, and prevented her from sleeping, though she could not say with certainty that it was the headache which awoke her at that hour. There were also a few minor ills, such as pruritus about the external orifices of the ears and nose, an excess of mucus in the throat, pains in the right shoulder and beneath the right shoulder-blade, and, finally, constipation.

The fulness of the thyroid gland, the prominent eyes, the flushed face and rapid pulse, as well as the progressive loss of flesh, led me to believe that I had a case of exophthalmic goitre to deal with. Moreover, I knew she was also hysterical, and, as such, hyperesthetic to the action of drugs. I prescribed, therefore, two minims of the tincture of belladonna, morning, noon and night.

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[18] Gunther, 1895, S. 432.

I did not see her for a week, but when I did was astonished at her condition. The face-flush had gone; the eyes were no longer prominent; the tremor and twitching about the mouth had disappeared; the speech was slow, but not as thick as before; the tongue was protruded nearly in the median line; the pulse was normal. She still complained of occipital headache, and winced when the spinous process of the seventh cervical vertebra was touched. The belladonna was continued for another week, when she assured me the sense of oppression about the neck had disappeared, and also the pruritus about the nasal and aural orifices. This pruritus was a subjective symptom, as examination of the ears and nose showed nothing to account for it. The thyroid gland could scarcely be palpated. She was rational and composed, and had had no return of her hysterical attacks since the date of the first examination.

The association of an ulnar anesthesia on the left side, with an area of sensitiveness over the seventh cervical vertebra pointed to a lesion at this latter point, either in the bone itself, the cervical portion of the spinal cord, or its meninges. Moreover, this anesthesia antedated the apoplexy by two years. It appeared for the first time soon after the menopause. It was constant and not progressive. There was no redness or heat in the neighborhood of the cervical vertebræ. A bone lesion seemed inadmissible, and the possibility of a cordal or meningeal inflammation at this point was entertained.

To the writer the case was very instructive, and opened up the question whether an over-active thyroid is not in many cases responsible for the nervous phenomena of the climacteric.

That there is some connection between the thyroid gland and the generative organs of both sexes is well known. Thus the thyroid is congested or hyperemic during menstruation, coition, pregnancy, accouchement. Whether this hyperemia results in an increased production of the thyroidal secretion does not appear to have been definitely determined. It does exist in the pathological congestion of the gland observed in infectious diseases, according to Roger and Garnier,[1] and also in exophthalmic goitre, according to Murray.[2] There seems no good reason, therefore, to deny an increase in physiological congestions as well.

The thyroidal congestion of menstruation is relieved upon the appearance of the uterine flow. Young women often complain at such times of a feeling of oppression about the neck, which leads them to seek relief in a tight neck band. Where no flow appears, as at the menopause, this congestion may readily take on a pathological condition owing to long continuance. In such a case, as in exophthalmic goitre, auto-intoxication may be expected. It is scarcely necessary to observe that there are various degrees of auto-intoxication, just as there are various degrees of exophthalmic goitre; but whether in the first degree or in the third degree, there is a marked similarity between the secondary symptoms of thyroidal intoxication and those of the menopause. Thus headaches, neuralgias, paresthesias, flushings, tremors and hysteria are common to both states.

In the case reported the exophthalmic goitre was, in the writer's opinion, the direct result of the long-continued congestion of the thyroid consequent upon the menopause. How far the paresthesia in the distribution of the left ulnar nerve, the hysteria, cataracts and cerebral hemorrhage were due to the exophthalmic goitre now remains to be considered.

Herter mentions[3] a very rare form of pachymeningitis localized in the cervical region, to wit, hypertrophic cervical pachymeningitis. It occurs in late middle life. The earliest symptoms of the disease are due to the irritation of the nerve roots, pains between the shoulders, in the back of the neck and head, slight rigidity of the muscles of the back of the neck, tenderness of the cervical vertebræ to percussion, slight disturbances of sensibility, paresthesias, and more or less symmetrical neuralgic pains, especially in the distribution of the ulnar and median nerves. This definition is sufficiently accurate to fit the case under discussion.

As to the pathology, it appears probable that the disease begins in the pia arachnoid of the cervical region as a small round-cell infiltration associated with arteritis, and arteritis of the spinal cord is thought to be due to the action of irritants in the blood, and particularly to toxins. Why this particular section of the cord should be affected is not clear, but of the clinical fact that toxins in general irritate specifically the spinal cord and the medulla oblongata in particular and, if intense enough in their action, give rise to a condition of hemoglobinemia, there can be no manner of doubt. The symptomatology common to all infectious diseases proves this. Abbott says:[4] There is as yet (1899) little agreement of opinion as to the chemical nature of toxins; but it is probable that the group comprises different bodies of the nature of globulins, nucleo-albumins, peptones, albumoses, and enzymes, or ferments. Ostwald has recently announced[5] that the iodine proteid of the thyroid gland belongs to the class of globulins; that it contains from 1.5 to 1.75 per cent. of iodine and about two per cent. of sulphur, but no phosphorus. Durdufi has isolated from the normal thyroid a substance analogous to cocaine, that is, an alkaloid, so that the toxicity of the thyroid juice seems to be well vouched for. An excess of thyreoglobulin in the circulation is supposed by many to be the exciting cause of exophthalmic goitre, and if globulins are toxic it may well be that the thyreoglobulin was in this case the specific cause of the cervical pachymeningitis and hence of the paresthesia in the distribution of the left ulnar nerve, particularly as the symptom appeared for the first time and soon after the menopause.

As to the dependence of some cases of hysteria on thyreoglobulin poisoning, I can only suggest that such dependence is extremely probable. In the case reported no hysterical symptoms persisted after the subsidence of the thyroidal swelling.

The eyes were examined by a well-known San Francisco oculist, who pronounced the dimness of vision due to double cataracts, still in their incipiency. This dimness of vision was also a post-climacteric symptom, and was doubtless due to the exophthalmos. The intra-ocular pressure was increased, just as in glaucoma, and the lymph circulation of the lens interfered with. It is customary to refer conjunctivitis, conical opacities and the like, which may occur in the course of exophthalmic goitre, to imperfect closure of the lids and to the consequent irritation of substances introduced from without. While not belittling this source of irritation, I would also suggest that intra-ocular pressure has often quite as much to do with the production of such lesions as the actual introduction of irritants. Gerrish[6] has well said, "that anything which arrests the current dams back the lymph upon the region which the vessel normally drains, unless the fluid can escape by some side channel, and this interference results usually in one or both of two principal changes. The first of these is dilatation of the vessels from the increased pressure of lymph within, and the other is saturation of the tissues on the distal side of the obstruction with lymph, and their consequent hyperplasia from over-nutrition." The deposition of lymph between the lamellæ of the cornea is a prerequisite for the production of an opacity in this structure, and it may well be that the same thing holds for an opacity in the lens.

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[1] La Presse Méd., April 19, 1899.

[2] Medical News, April 15, 1899.

[3] American System of Practical Medicine, vol. iv, p. 111.

[4] Principles of Bacteriology, p. 494.

[5] Zeitschrift für physiologische Chemie, vol. xxvii, 1899.

Whether a cerebral hemorrhage really occurred in this case is not for me to say. The symptoms of a cerebral hemorrhage — at least some of them — were undoubtedly present. In both hysteria and exophthalmic goitre, however, the same symptoms may also occur. In the paralyses of exophthalmic goitre, Joffroy places in the order of frequency, ophthalmoplegia first, then paralysis of the facial muscles, the jaw, tongue and velum palati. In hysterical hemiplegia, according to Sinkler,[7] the face is never paralyzed. The patellar reflex, which is commonly diminished or absent in exophthalmic goitre, was increased in this case, and if anything, more so on the left than on the right side.

In hysteria the patellar reflex is increased in a large proportion of cases. Although hysteria and hemiplegia were both present in this case, the existence of the facial paralysis and that of the tongue and velum palati (for to nothing else can I attribute the peculiar thickness of speech), would seem to argue against the hysteria as the cause of the hemiplegia. The choice lies between a hemiplegia of exophthalmic goitre origin and a cerebral hemorrhage. The suspicious improvement in the movements of the facial muscles, tongue and speech after a two weeks' course of belladonna inclines the writer to the opinion that the cerebral hemorrhage, if it ever existed, must have been extremely small in amount. A series of fly blisters on the nape of the neck greatly relieved the symptoms of irritation at this point.

Clinical Department.

TWO EMERGENCY CASES AT THE MASSACHUSETTS GENERAL HOSPITAL.

BY CHARLES L. SCUDDER, M.D., BOSTON,

Surgeon to Out-patients at the Massachusetts General Hospital; Assistant in Clinical and Operative Surgery, Harvard Medical School.

CASE I. INJURY TO HIP AND ABDOMEN; SUBSEQUENT ACUTE STAPHYLOCOCCUS INFECTION; OSTEOMYELITIS OF ILEUM; OPERATION; DEATH; AUTOPSY.

M. S., five and one-half years old, had had no illness previous to a fall from a fence on a Thursday. The fall was not regarded at the time as serious. An abrasion of the abdomen on the left side and a contusion of the left hip were the only evidences of injury. On Friday he seemed rather indisposed. On Saturday morning he was examined by Dr. Warren Gay, who found the left thigh flexed and the abdomen slightly distended. Tenderness and pain were present in the left groin just above Poupart's ligament. The bowels had moved naturally. There was no tenderness over either kidney. He had vomited once. The temperature was 99.5°; the pulse was 90. He could extend the leg without pain. Examination of the boy Saturday evening found less distention of the abdomen and greater resistance to extension of the thigh. Muscular spasm was very evident about the hip-joint. There was no muscular spasm Saturday morning. Monday morning the abdomen was distended. He was listless; he had vomited once. The leg was extended. The temperature was 100°; the pulse 120. The urine was high in color. He was sent to the hospital.

Monday evening the boy was seen at the hospital. He was found to be delirious at times. He answered questions fairly intelligently. He was restless. The urine was high in color, acid, 1.016. There was a slight trace of albumin. Sugar was absent. A few hyaline and fine granular casts and an occasional blood and renal cell were seen in the sediment — evidently a urine of renal irritation. The leucocytosis was 17,600.

Evidently the boy was suffering from an acute septic infection. The only localizing symptom was the abdominal pain and tenderness in the left side and the persistent flexion of the left thigh and leg, associated with muscular spasm of the left hip muscles.

A median abdominal incision revealed a swelling of the iliacus muscle at its origin from the inner surface of the ilium. This swelling fluctuated distinctly. The abdomen was too much distended and this swelling was too deep to have been detected without operation.

In order to avoid infecting the peritoneum, an extraperitoneal incision, as if for tying the iliac vessels, was made, and the fluctuating swelling was opened and its contents evacuated extraperitoneally. The inner surface of the ilium for a considerable extent was found bare of periosteum. About six ounces of a thick grumous pus was evacuated. The cavity of the abscess was thoroughly cleansed and drained, through the extraperitoneal opening, by gauze wicks.

Two days later the boy died. From the time of the operation till he died there was no material change in his condition. High temperature, delirium and failing pulse were the physical signs. The infection was intense. Six days from the injury the boy was dead.

Abstract from the autopsy records of the Pathological Laboratory of the Massachusetts General Hospital; autopsy by Dr. J. H. Wright, six hours post mortem:

Anatomical diagnosis. — Purulent infiltration and abscess formation in the tissues adjoining the left iliac bone; acute osteomyelitis of the left iliac bone, purulent arthritis of the left hip; incipient acute general peritonitis; hemorrhagic infarction and acute fibrinous pleurisy of the left lung.

Dissection of the parts adjacent to the wound in the left side of the trunk shows the following conditions: The cavity of the wound and abscess extends downward between the anterior surface of the iliac bone and the muscles in the fossa of the bone. Here the periosteum is separated and the periosteum is denuded, but is not necrotic. In their place there is an accumulation of thick, dirty yellow pus. There is some purulent infiltration of the tissues near the bone, just below the line of the pelvis. The gluteal and other muscles just posterior and external to the iliac bone are infiltrated with thick, dirty yellow pus, which exudes from the cut surfaces in abundance. The iliac bone on being broken open shows in places yellow pus in the interior of its spongy bone. The left hip-joint on being opened exudes a considerable quantity of thick, dirty, grayish-yellow purulent fluid. No definite lesion of the cartilages was made out. No disease of the spinal column was found. No disease was found in the portion of the sacrum adjacent to the left ilium.

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[6] Treatise on Surgery, Park, vol. i, p. 520.

[7] System of Practical Medicine, Loomis, vol. iv, p. 699.

Bacteriological examination. — Cover-glass examination of the pus of the left hip-joint shows pus and cocci. The pus cells are generally necrotic; cocci are numerous; cultures in blood serum, right lung, confluent growth of small colonies of a yellow color; staphylococcus pyogenes aureus. The exudate from the peritoneal cavity, liver, spleen, and the pus from the region of the left iliac bone, all show numerous colonies of staphylococcus pyogenes aureus.

REMARKS.

The sequence of a comparatively slight trauma and an acute infective process is extremely interesting. It was impossible to determine the exact origin of the primary infection. The osteomyelitis appeared to be secondary to the process elsewhere present — to have extended from other parts. Until the involvement of the hip-joint and the associated muscular spasm, it was impossible to locate accurately the lesions. The inclination to lie with the left thigh flexed was suggestive of a left-sided lesion seated within the psoas or iliacus muscle or within the hip-joint. In the absence of early muscular spasm, primary disease of the hip-joint could be ruled out, and some obscure lesion near the left psoas or left iliacus muscles was thought to exist. The muscular spasm which appeared later suggested that any difficulty in the hip was secondary. The autopsy demonstrated this to be true.

CASE II. EXTRA-UTERINE PREGNANCY; RUPTURE OF SAC; OPERATION; RECOVERY.

J. O., thirty-five years old, married ten months. Last catamenial period was eight weeks ago, lasting three days. Ordinarily catamenial period lasts four or five days; ten napkins a day. Some nausea and loss of appetite seven weeks ago. To-day when patient was first seen she told the following story: At eight o'clock this morning she was seized with sudden agonizing pain in the median line of the abdomen, above the pubes. She was working about the house at the time, but on reaching a sofa she fainted. On recovery from the initial faint the pain had become general in the abdomen and she was unable to sit up. The pain persisted in the abdomen, but extended upward away from its first seat to the epigastrium, the right shoulder and the right side of the chest. She had through the day a few fainting spells.

Upon entrance to the hospital her temperature was 99.8° F.; pulse 100 and of fair strength; respiration 42; leucocytosis 28,000. She presented an anxious expression of countenance, with pallor of lips and rapid respiration. The abdomen was slightly distended uniformly. A mass was felt in the hypogastric region which was firm and slightly sensitive. The bladder was empty. In either groin there was tenderness to deep pressure. Dulness existed in each flank and suprapubically. Vaginal examination discovered the uterus pushed forward and crowded downward. The os was patent and slightly soft. In the left cul-de-sac was a fulness which was tender to the palpating finger. The history of a sudden onset of pain during pregnancy, associated with repeated fainting attacks, the pallor, the rapid respiration, the dulness in the flanks, suggested an extra-uterine pregnancy which had ruptured, partially filling the abdominal cavity with free blood.

Operation found a ruptured tubal pregnancy on the left side. The quantity of blood present in the abdomen was not measured. The tube was tied off, the abdomen sponged out with dry gauze sponges, and the abdominal wound closed with sutures of silkworm-gut.

During convalescence the temperature rose once to 100.5° and then slowly came to normal.

In the after care of this case no nourishment was given for twenty-four hours. During these first twenty-four hours sips of hot water were given to relieve thirst. There was a little abdominal distention during the first few days, which was relieved by the use of enemata of suds placed with the aid of a rubber catheter high in the colon. Broths were allowed on the second day; broth and milk on the third day; liquids and soft solids by the end of the week; house diet after the first week. The bowels were moved by enemata every other day. The patient left the hospital after seven weeks, wearing a snugly-fitting abdominal swathe. She will wear this swathe for about two months.

THE CLINICAL MANIFESTATION OF A PHYSIOLOGICAL FACT.[1]

BY WILLIAM H. ROBEY, JR., M.D., BOSTON.

This brief paper is presented because the physiological fact mentioned does not seem to be generally appreciated, no clinician whom I have questioned being able to tell whether the sign was pathological or not. The matter came to my notice in the following manner: A man brought his four-year-old child to the out-patient clinic for examination. He said that the child was sitting on the kitchen table about seven o'clock the previous evening when he suddenly fell, having apparently lost his balance, struck his head on the floor and became unconscious; he vomited at the time and had been dull and stupid ever since. The father held in his arms a pale, limp, unconscious child. The history, as given by the parent, suggested some cerebral condition, and with that in mind we first examined the eyes, and found that the pupils were contracted to pinhole size, equal, and unaffected by light. Then the patellar reflexes were tried and proved to be normal, but in tapping the knee the child regained consciousness, sat up and looked around; the pupils instantly dilated to their normal size and we found, to our surprise, that a healthy, sleeping child had merely been wakened. The man had not made it clear to us that the child had eaten his breakfast and that he had brought him to the hospital because he feared some possible obscure injury as the result of the blow.

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[1] Read before the Clinical Club, November 17, 1899.

Only a few days ago I saw another child, whose parents gave almost the same history of a fall. He was apparently asleep at the time of the examination and the pupils were contracted to pinhole size. In this case the reflexes were tried and the child was completely examined without waking him. When he was wakened the pupils instantly dilated.

Since the first experience I have examined 22 normal sleeping children: in all the pupils have been pinhole and have dilated instantly on waking. In several instances the children were examined and handled exactly as if they had been awake without arousing them. For obvious reasons the eyes of children have been examined. In children who have been pinched and stirred up without regaining consciousness the pupils have partially dilated under the sensory stimulation.

In the 1878 edition of his "Physiology" Foster says: "The pupil is contracted when we accommodate for near objects, when the retina is stimulated, as when light falls on the retina, the brighter the light the greater the contraction. The pupil is also contracted when the eyeball is turned inwards, when the aqueous humor is deficient, in the early stages of poisoning by chloroform, alcohol, etc., and in nearly all stages of poisoning by morphia, calabar bean and some other drugs." In the 1880 edition he mentions all of these causes and adds, "in deep slumber."

The twelfth edition of Kirke's "Hand-Book of Physiology" (1888) mentions all of the above causes save deep slumber. The "American Text-Book of Physiology" says: "In sleep, though the eyes are protected from light, the pupils are strongly contracted, but dilate on stimulation of the sensory nerves, even though the stimulation be insufficient to rouse the sleeper."

The drugs which cause contraction of the pupils are physostigmine, nicotine and pilocarpine, by action locally or through the circulation; cocaine locally causes transient contraction, which is followed by wide dilatation; conine applied locally contracts through conjunctival irritation, but the drug has gone out of use. The most important drugs which cause contraction of the pupil are opium and alcohol, the latter less marked than the former.

The cerebral diseases with uniformly contracted pupils are few and the contraction is not a constant symptom. Myosis occurs in syncope. In the unconscious state caused by a blow, with symptoms of shock producing a condition sometimes spoken of as "concussion," the pupils usually react to light.

When an adult is handled incident to examination, if he is merely sleeping the manipulation will waken him, but fatigued children sleep soundly and are sometimes aroused only after considerable effort, but, once awake, they generally remain so, differing from the drowsy child whose pupils are contracted by some drug. It seems to me to be of some importance to remember the fact that the pupils are strongly contracted during sleep and that they are instantly dilate on regaining consciousness from healthy slumber.

Another Plague Victim. — It is reported that Dr. Vital Brazil, a bacteriologist of S. Paulo, has contracted plague while attending patients in the hospital at Santos.

Medical Progress.

REPORT ON DISEASES IN CHILDREN.

BY T. M. ROTCH, M.D., AND A. H. WENTWORTH, M.D., BOSTON.

AFFECTIONS OF THE CENTRAL NERVOUS SYSTEM IN ACUTE INFECTIOUS DISEASES.

E. Fränkel[1] reports four cases, three of which were infants.

The first case was that of a male infant of ten months, who was brought to the hospital with influenza and bronchitis. Eight days later he developed a fetid diarrhea, and died two weeks later without any other noticeable symptoms. The temperature during the first eight days was somewhat elevated, and varied from 38.5° to 40° C. With the onset of the diarrhea the temperature fell and remained below normal for several days preceding his death.

At the autopsy the chief lesion consisted of a purulent meningitis which involved the anterior portion of both hemispheres. The exudaton infiltrated the piarachnoid and caused some flattening of the convolutions beneath. A similar purulent exudation was found at the base of the brain on the frontal lobes. The ventricles were somewhat distended with fluid and contained flakes of pus and fibrin. The ears were normal. Bacteriological examination showed the presence of the influenza bacillus in pure culture in the exudation. Cultures were made in agar mixed with blood.

The striking feature of the case, clinically, was that the meningitis was absolutely latent, so that no suspicions were entertained of a cerebral complication during life. The localization in the frontal lobes led the writer to believe that the infection took place from the nasal cavity through the lymphatics.

The second case was that of an infant of nine months, who entered the hospital with symptoms of bronchitis and enteritis, and who died fifteen days later with symptoms of tubercular meningitis.

At the autopsy a purulent meningitis was found covering the convexities, and also, to some extent, the base of the brain. The ventricles were distended with cloudy fluid. In this case the pneumococcus was found in the exudation. There was a double otitis media, but no connection could be found between it and the meningeal exudation.

The third case was that of a child of two years, who succumbed to an operation for empyema following pneumonia.

At the autopsy, in addition to the pulmonary lesions, there was a hemorrhage over the second right frontal lobe, which penetrated into the medullary substance of the brain. A similar hemorrhage was found in the region of the gyrus paracentralis. The meninges over the cerebellum contained a small quantity of purulent exudation, in which was found the diplococcus lanceolatus. In this case there were no clinical symptoms of the cerebral complication.

ARSENIC IN THE TREATMENT OF CHRONIC ECZEMA IN INFANCY AND CHILDHOOD.

J. Neuberger[2] has obtained excellent results in the treatment of rebellious cases of eczema by giving arsenic internally. (This treatment has also been employed systematically by Anderson and Lewis). Neuberger's cases ranged from four months to five years of age. There were 30 such cases in all, and the ordinary methods of treatment had proved useless. In some cases the lesions were confined to the cheeks, forehead, ears and scalp. In others the eruption was general. In many cases the affected portions were covered with thick crusts; the skin was edematous in places, and pressure on the crusts caused pus to exude. The neighboring lymph nodes were enlarged and in some cases suppurating. There were a number of cases of so-called "scrofulous" type of eczema with lesions about the nose and lips, and associated with lesions of the middle ear, nose and eyes.

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[1] Zeitschr. f. Hyg. u. Infectionskrankh., Bd. xxvii, p. 315, 1898; Rev. Mens. des Maladies de l'Enfance, April, 1899, p. 187.

[2] Arch. f. Derm. u. Syph., Bd. xlvii, S. 195; Rev. Mens. des Maladies de l'Enfance, Tome lxvii, 1899, p. 381.

The treatment consisted solely in the administration of Fowler's solution. For children over two years of age, Neuberger employed equal parts of Fowler's solution and distilled water, and began with one drop once a day, at noon, and increased the quantity by one drop each week until six or seven drops were given. The treatment was discontinued gradually as soon as recovery occurred. For infants, 1.5 grammes of Fowler's solution was mixed with 3.5 grammes of distilled water and given in the same way up to five drops.

Only one case showed any ill effects from the treatment. This was an infant, one year old, with a particularly obstinate form of eczema, who showed symptoms of gastro-enteric disturbance after a long period of treatment.

The duration of the treatment was relatively long. During the first two weeks no improvement was noticed. It was only after three or even five weeks that a noticeable diminution of the itching occurred. Soon after this the improvement in the skin was evident. By the sixth or eighth week the improvement was rapid in most cases. Recurrence of the eczema took place at times and necessitated a repetition of the treatment.

OBSERVATIONS ON GASTRIC DIGESTION IN INFANCY.

Investigations of the motor and secretory functions of the stomach in infants have been so contradictory that Wolf and Friedjung[3] were led to control the previous observations by further investigation. The experiments were made upon 97 infants from ten days to twenty-one months old. They were chiefly cases of gastro-enteric disturbance; only a few were normal so far as their digestions were concerned. The gastric contents were examined by all the modern methods. The results were as follows: The quantity of the gastric ferments secreted by infants is subject to much greater variation than in older children. In some cases the complete absence at times may be regarded as physiological. This explains the variable results obtained by different observers.

This variability in the quantity of the gastric ferments leads Wolf and Friedjung to conclude that the ferments are by no means so important factors in the assimilation of the food as has been hitherto believed. Accurate conclusions as to the activity of the gastric digestion cannot be made by merely estimating the presence or absence of the so-called "normal" secretions in the stomachs of infants. This explains why observers have failed to find characteristic changes in the gastric secretions in cases of digestive disturbance in infants.

Evidence of diminished motility and the persistence of lactic-acid fermentation and perhaps transient fat acids in the stomach for some time after normal digestion should have been completed are the only certain evidences of a pathological condition. Indications for the appropriate treatment of digestive disturbances cannot be obtained from the mere examination of the contents of the stomach.

PROTECTIVE SUBSTANCES IN THE BLOOD OF NEW-BORN INFANTS.

Rudolf Fisch[4] studied the action of the blood serum of new-born infants upon certain infectious agents, to determine whether the blood serum possessed any power to modify the predisposition of infants to certain infectious diseases. The results of his studies on the action of blood serum upon infections and intoxications produced by the diphtheria bacillus are as follows:

(1) The blood serum of the new-born has no appreciable bactericidal action on the diphtheria bacillus. Cultures of the bacillus in this serum showed no loss of virulence.

(2) A protective influence of the blood serum was observed in most cases when corresponding quantities of serum and virulent *cultures* of the diphtheria bacillus were injected into guinea-pigs.

(3) The protective power of the serum was rarely sufficient to prevent the death of the animal when quantitatively similar amounts of *toxin* and serum were injected into different parts of the animal.

(4) It was usually possible by injecting sufficiently large quantities of serum, to protect guinea-pigs from diphtheria intoxication.

The protective substance in the blood of the new-born exerts an antitoxic action on the diphtheria toxin.

BACTERIOLOGICAL EXAMINATION OF THE BLOOD AND URINE IN CERTAIN INFECTIOUS DISEASES OF CHILDHOOD.

Most of the work of Carlo Giarré and Carlo Comba[5] was done in cases of diphtheria, measles and scarlet fever. The blood was obtained during life from the veins on the backs of the hands. In 59 cases in which the blood was obtained in the above manner, and from which 150 cultures were made, the typhoid bacillus was found once. The other cultures remained sterile. The bacteriological examination of the blood obtained post mortem differed considerably from that obtained during life. The authors ascribe these differences to post-mortem causes. The blood was obtained as soon as possible after death, by aspiration from the unopened heart. In 57 cases Fränkel's diplococcus was found six times; the streptococcus pyogenes 11 times, and the staphylococcus aureus twice. Neither the colon bacillus nor other pathogenic organisms were found. A striking result was the frequency with which the streptococcus pyogenes was found in the blood of children who had died of scarlet fever. Not less striking was the fact that in 20 fatal cases of diphtheria the diphtheria bacillus was not found in the blood post mortem. The urine was obtained by catheterization in 29 cases. No pathogenic organisms were found in any of these cases. In nine of the cases the cultures remained sterile, and in 20 cases a variety of non-pathogenic organisms was found.

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[3] Arch. f. Kinderheilk., Bd. xxv, S. 161; Centralbl. für die med. Wissenschaften, No. 36, S. 622, 1899.

[4] Jahrbuch f. Kinderheilk., Bd. xli; Archiv f. Kinderheilk., Bd. xxvi, S. 431, 1899.

[5] Arch. Ital. di clinical. med., xxxvi: Arch. f. Kinderheilk., Bd. xxvi, S. 450, 1899.

The examination of the blood and urine obtained during life and of the blood obtained after death in 20 cases of diphtheria failed to show the diphtheria bacillus in a single case. The authors therefore agree with Roux and Yersin in concluding that diphtheria is a local infection and that the later symptoms are due to intoxication.

The examination of the blood and urine from cases of measles gave negative results. The writers failed to find in any stage of the disease the bacillus described by Canon and Pielicke.

The blood examinations made during life in cases of scarlet fever were negative. The streptococcus pyogenes was found frequently in the blood of these cases immediately after death, whereas in death from other diseases this was not the case. It would seem from this that the streptococcus may be of importance in scarlet fever in connection with complications.

EXPERIMENTAL STUDIES ON THE ACTION OF ANTIPYRIN AND LACTOPHENIN ON CHILDREN.

Pasquale Fazio [6] reaches the following conclusions:

(1) Both antipyrin and lactophenin cause a reduction of temperature in children who have a normal temperature. The degree of reduction may amount to 2.2° C. from the use of antipyrin and 1.9° C. from lactophenin.

(2) Moderate doses of lactophenin will produce a rapid and sure reduction of temperature in these cases. Larger doses of antipyrin are required for this result and the effect is not so certain. At times it causes a rise in temperature in these cases.

(3) The action of both drugs lasts about six hours, when the doses are repeated; the temperature then rises again without any evidences of subjective symptoms.

(4) A corresponding influence was exerted upon the pulse and respiration.

(5) Symptoms of collapse are produced when antipyrin is given in sufficient quantities to produce a marked fall in temperature. A similar result occurs after the administration of lactophenin, but only when more of the drug is given than is required to reduce the temperature.

(6) The clinical phenomena of intolerance to antipyrin and lactophenin are, general depression, weakness, small and frequent pulse, diminished intensity of the heart sounds, especially of the first sound over the mitral area, increased frequency of respiration, pallor, sweating, drowsiness, apathy, mydriasis, loss of appetite. Nausea and vomiting did not occur. In several cases transitory albuminuria and hemoglobinuria occurred after giving lactophenin.

(7) The maximum dose for lactophenin is 0.1 to 0.4 gramme in the first months of life, and at the most 0.8 gramme at the end of the first year. Somewhat larger doses of antipyrin are permissible.

(8) In general antipyrin is the better analgesic and anesthetic, and lactophenin is the better antipyretic.

(9) In certain cases of bronchial catarrh associated with cough the cough appeared to be somewhat relieved by both drugs.

It is evident from the foregoing that both of these drugs have dangerous properties when used as antipyretics and that they must be administered with caution if at all. Antipyrin exerts its toxic action more on the nervous system and the heart, and lactophenin on the blood. [It is uncertain from the abstract whether the maximum quantity alluded to refers to a single dose or to the twenty-four-hour amount. If the former, it appears to us to be much too large a quantity to give to an infant at one time. — Rep.]

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

A. K. STONE, M.D., SECRETARY.

Regular meeting Monday, October 23, 1899, Dr. R. H. Fitz in the chair.

ANATOMICAL SPECIMENS.

Dr. Beach: I have here a specimen from the tumor of a testicle removed this morning. It has been simply divided. The patient was fifty-two years old, the growth appearing three or four years ago with little pain. It presents the gross appearances of sarcoma or carcinoma of the testicle. A section has been removed for microscopic examination, but no return has been made as yet. There are no cysts and no cartilaginous masses, such as are sometimes seen in sarcomatous growths. After the section had been made below the external ring and the ligature applied, I opened the inguinal canal by dividing the external oblique muscle up to the internal ring, dissected the spermatic cord from the canal to the internal ring, where it was divided. On examination of the cord after it was removed, a small gland of the size of a filbert was found in its substance. The tumor developed without much pain, the man being able to attend to his work throughout the time. It weighed 1,220 grammes and measured 18 x 12 centimetres.

Dr. Charles Harrington read a paper on

DISINFECTION AND PREVENTION IN THE SICK-ROOM.[1]

Dr. Durgin: I have not many remarks to make. I am very glad to hear the paper. It touches on many points of interest to the profession and to the public. First, in regard to isolation. The reader has not depicted too much the difficulties in securing the isolation of these patients. In most instances it is utterly impossible to keep the patient in such segregation as is necessary. It is impossible to keep the family out of the room or prevent such commingling with the family, and even with parties out of the family, as would be necessary to secure proper isolation. In many instances there is very little care bestowed by the family until driven to do so. It is difficult for the attending physician, difficult for the nurse, and it is difficult for the health officer to secure this isolation. It is true, as has been said by the reader, that the ordinary measures proposed and instituted for closing off the sick-room amount to little or nothing. And I think too much upon this point cannot be said in societies like this; it cannot be too much talked over by physicians. Practically, we find it necessary to take more than 50 per cent. of these patients away to the hospital, many of them by force, in order to secure isolation. I believe that no one has the right to so use his own as to injure his neighbor. I believe that wherever a child or person is sick in a tenement or house, and is not so isolated that all the other children may go to school without risk, then that patient should go to the hospital and the home be cleaned up. We are pursuing the subject upon that line, and wherever our agents report to us that a child is not satisfactorily isolated we give an order for the removal of that patient to the hospital.

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[6] La Pediatria, May, 1898; Arch. f. Kinderheilk., Bd. xxvii, S. 145, 1899.

[1] See page 617 of the Journal.

As to the disinfection, I think that the writer has given a good illustration of the fallacies which are encountered in the sick-room. Very many people, I should say the majority of families, believe in these worthless patent disinfectants. You find them everywhere, and, in most instances, great confidence is placed in them. A slight odor of carbolic acid gives most people a sense of security, and we have no disinfectant, in my knowledge, where deception is so easily practised as with carbolic acid, because of the fact that a small particle of it gives the odor which lulls the people into a sense of security. There are very few disinfectants which we should regard as trustworthy and which can be used freely, as they must be, without very great cost. First, I should say that steam stands perhaps at the head of our efficient disinfecting agents. It has the power to kill quickly and to penetrate. The formaldehyde gas is a remarkably quick and efficient disinfectant, but it has not the penetrating power that steam has. In a one-per-cent. solution it is capable of doing very excellent and rapid work. The chloride of lime in solutions furnishes one of our cheapest and most efficient known disinfectants; it is rapid and sure in its effect. I think, with the typhoid stools and many other infected materials, it is one of the most convenient and useful disinfectants. It is common to order or advise a jug of this solution, half a pound to the gallon of water, well corked to save the chlorine until it is brought into use. I should say that chloride of lime is comparatively worthless unless it is kept in a dry and fresh state, containing something like 30 per cent. to 33 per cent. of chlorine. I scarcely think we need fear its use on the plumbing materials in the dilute form recommended.

The bichloride of mercury should not be forgotten for general use. Of course it is a poison which should be handled with care. A drachm to the gallon, giving about 1-to-1,000 strength, with an equal part of common salt or a trifle of hydrochloric acid, gives an acid solution which will not lock up the bacilli in albumin. One to 1,000 makes a good disinfectant on all hard surfaces, and it is well to use this upon furniture, carpets, etc., wherever a damp cloth can be used without injury.

Dr. McCollom: I have very little to add. I was very much interested in what Dr. Harrington said about formalin. About the time Dr. Harrington was making his experiments, I made quite a number with the same agent. I think that it makes comparatively little difference how the formalin gas is generated, whether you use pastilles prepared by Schering or evaporate the solution. At the outset I took cultures from cases of diphtheria, diphtheritic membrane, also pure cultures of the typhoid-fever bacillus, and quite a number of cultures of the various cocci, and exposed them to the fumes of formalin for eighteen hours or over night. I found in every case in my first series of experiments that the organisms were killed, that in the diphtheritic membrane the organisms were entirely destroyed; and let me remark in passing that before I commenced, before these articles were exposed to the fumes of formalin, cultures were taken from every one of them, and the organisms were found in each of the individual cultures. The cultures were on pieces of cloth; tongue depressors were used for the diphtheritic membrane; everything was exposed. Then I thought I would see if formalin had any penetrating power; therefore I took discharges of nasal diphtheria, spread cultures of diphtheria bacilli on pieces of cloth, put them in the pockets of a coat and rolled the coat up, not tightly, exposed it to the fumes of formalin, and whereas before the cultures had been entirely killed, in the second instance, where the cultures were in the pockets of the coat, the formalin had no action at all, showing conclusively that for a surface disinfectant formalin is a very good agent, but where you wish any penetrating power it is absolutely worthless; therefore you have to resort to steam where penetrating power is desired. I am rather amazed at the statement made in some of the pamphlets written on formalin that it was not injurious to animal life. In my series of experiments, in the first instance, a rabbit was killed in an hour; in the second, in thirty minutes. In the second instance perhaps there was a little more formalin in the room than in the first.

In regard to corrosive sublimate, I use that a great deal in the isolating-rooms. It is our practice, if a patient comes with a doubtful diagnosis or without any diagnosis, for instance, if the patient has been exposed to scarlet fever, one member of a family having been admitted with scarlet fever and another complaining of the initial symptoms, the second patient is placed in isolation, and when a positive diagnosis is made, transferred to the ward. The walls, ceiling and floor of the isolating-room are washed with corrosive sublimate, 1 to 500; after that they receive another washing with clear water, and are aired very thoroughly for from twenty-four to forty-eight hours. In no single instance — and yesterday the ten thousandth patient was admitted to the hospital — have we had anything contracted from the isolating-rooms.

Dr. Harrington alludes to the effect of sunlight as a disinfectant. There is no question that sunlight is one of the most efficient disinfectants. The experiments of quite a number of German observers show conclusively that the various organisms are destroyed by exposure to sunlight, and in a few instances I have experimented on that line myself, and I find that if you expose a test-tube, having previously inoculated it to the sunlight for two consecutive days, no organisms will grow.

When a patient is discharged, the bedding is placed in the formalin room over night and then thoroughly aired. All the patient's clothing is disinfected by formalin and since we have been disinfected by this agent, we have not heard of a single instance where there was any proof that the patient carried anything in his clothing; at all events, we have had a good deal less fault-finding than when we disinfected the clothing with steam.

Dr. Harrington does not lay quite stress enough upon the disinfecting properties of boiling water. I think in every case the clothing from a person ill with an infectious disease should be boiled at least an hour, and when I say boiled an hour, I mean not simply put into hot water and the water allowed to come to the boiling point, but absolutely boiled that time. The Empire Laundry Company have a very ingenious and satisfactory washing-machine which is really a steam sterilizer on a small scale. You cannot sterilize by steam before washing the clothes, for if you do you get indelible stains. If you wash your clothing first and then turn on superheated steam, as can be done by this machine, you can disinfect and disinfect absolutely. As a matter of fact, we boil our clothes at the hospital about an hour, and I know of no instance where there has been any cross infection since the hospital has been opened. I exclude cases where patients come in with diphtheria and in four or five days break out with an eruption of scarlet fever contracted outside the hospital. There has been no instance of cross infection from the clothing and I attribute it to the fact that I insist on the clothing being boiled an hour. Dr. Russell, of Glasgow, adopts that method, and in an article he wrote some time ago, he speaks of the good effect of boiling as a matter of disinfection. In addition, I wish Dr. Harrington had laid a little more stress upon fresh air. Fresh air and sunlight are nature's best disinfectants. I think in the country a good deal can be accomplished by impressing upon the minds of the people the importance of the effect of sunlight and fresh air as a disinfectant.

Dr. Shea: I am sorry Dr. Harrington looks so discouragingly on the difficulty of isolation as practised the present day. As a health officer, and dealing especially with scarlet fever and diphtheria every day in the week, I find that great improvement has taken place in the last four years and especially since the opening of the South Department. Up to that time the Health Department of Boston was handicapped. We could not isolate the children. When you have two cases of diphtheria or three cases of scarlet fever in a tenement of three rooms, and no place to send them, isolation is impossible, but with the opening of the South Department and the facilities furnished there, naturally the Health Department started in a new groove, and I think probably it might interest the gentlemen of this Society if I should tell them briefly the workings of the Health Department of our own city. As to the question of isolation, you are aware that the Health Department of any city is obliged under the law to maintain a supervision over any patient afflicted with a contagious disease, and after the death or recovery of the patient to see that there is proper disinfection. When a case is reported, notice is immediately sent to one of our agents; the city is divided into fifty districts, and this agent is a medical man representing the Board of Health in that particular locality. He makes a visit to the patient and generally in conference with the attending physician; if the patient can be properly isolated he is allowed to stay at home.

Now what do we as health officials consider proper isolation? As interpreted by the Health Department and what they always insist upon, isolation means the complete separation of the patient from the immediate family, a particular room for the patient. It also means that no one is allowed in that room with the exception of the nurse, not necessarily a trained nurse, and the attending physician. We have rules and regulations to cover this particular isolation. The legal method of performing this is to placard the door leading to the apartment with a card, red for scarlet fever, white for diphtheria, stating that the room is quarantined by the Health Department of the city of Boston. I find that these agents co-operate with the physicians in charge of the case and the patient is isolated. The agent maintains the supervision over this case, and when the patient is ready for discharge after diphtheria two successive negative cultures must be obtained, the last one by the agent, and in case of scarlet fever when the physician certifies that the patient has recovered, this agent must again make a visit to examine the case and certify that the patient is free from infection. That is the way we are handling these cases at the present day. I think that the members of the profession, especially the younger members that deal with these cases of infection, like scarlet fever and diphtheria, can see themselves the great improvement that has taken place in Boston. I myself can testify to that fact. Heretofore it was not an uncommon occurrence to find children on the street suffering with scarlet fever desquamating, and also with diphtheria. That to-day is a rare occurrence.

As regards the practical workings of disinfection. We have a corps of men trained for that duty. On receipt of notice that the apartment used by the patient is ready for disinfection, they proceed as soon as possible to the house and prepare that room for disinfection. As the reader and Dr. McCollom have said, the formalin is merely a surface disinfectant, and that is one of the objects of preparing the room, all bedclothing, sheets, pillow-cases, in fact everything that can be brought to the surface, the object being to allow the gas to play on the surface, the room, the windows, doors, flues, ventilators, everything being sealed up. The object is to make it air-tight as possible and to prevent any leakage of gas. We use at the present time about 20 ounces to every 1,000 cubic feet. The gas is allowed to remain about six hours and after that the apartment is opened and ventilated. We are very liberal in disinfecting. If there is any question of infection of the other rooms before the patient has been placed in quarantine, we cheerfully perform disinfection for the whole. That is in brief what the Health Department is doing in Boston to-day. What we have accomplished I suppose results must show for themselves.

Dr. Hill: In common with every one else here, I am sorry to know of Dr. Harrington's illness. I regret his absence to-night also, because I should like to ask him a few questions relating to this paper. One statement in particular that rather puzzles me is that of the precipitation of albumin by bichloride of mercury. This point, overlooked entirely in the early stages after bichloride first came in and while it was looked upon as a quite marvelous disinfectant, was brought to light, I think, first by Klein, and this reputation has stuck to bichloride of mercury ever since, although numbers of authorities have pointed out repeatedly that various salts and acids added to the solution will prevent that precipitation of albumin which is the chief fault of the bichloride. I was a little surprised to hear that point come up again at this late day without any mention of the action of salts or acids, and should have liked to ask Dr. Harrington if the action of acids and salts in preventing precipitation of albumin has been exploded, especially as I am myself rather a bacteriologist than a chemist.

With regard to bichloride as compared with formalin, and chloride of lime as compared with formalin, the great point to remember, I think, about all disinfectants is that there are a large number of them that will work excellently well, and the particular disinfectant chosen does not make so much difference, so far as sanitary matters go, as the thorough, exhaustive, intelligent application of whatever disinfectant is selected. Of course there are a great many points about different disinfectants that have been carefully worked out. It is too large a subject for this discussion to go into the applicability and scope of each particular one, but so far as the poisonous effect of bichloride is an objection to it, it must be remembered that that applies particularly to bichloride in the form of powder and not so much in 1-to-1,000 solution, although I admit that this is poisonous, but the great danger comes in the concentrated form and the same danger applies to formalin. You would as little think of placing in the hands of an ignorant person formalin in full strength as of putting in his hands the bichloride in powder form. When both are diluted in the ordinary proportions, there is little to choose from the standpoint of safety.

With regard to chloride of lime, I think perhaps some of the objections which chloride of lime has are overruled by turning rather to the analagous disinfectant, chlorinated soda, which does not precipitate albumins as chloride of lime does, and does not precipitate fats or soaps and, in that way, form more or less curdy masses on the interior of vessels in which it is placed with the material to be disinfected. Chlorinated soda, however, has some objections. It is a little more expensive than chloride of lime — and expense is a very great factor indeed in dealing with disinfection among the poorer classes, where it is usually most needed — and also it is not as stable: at the same time, the instability of both solutions I think has been somewhat exaggerated. In experiments I have conducted I have found unstoppered solutions of one per cent. of chloride of lime maintained their strength, or practically so, for two weeks; the loss was very small. The odor of chloride of lime has been brought up as an objection, and there, again, I think that, as compared with formalin, you must distinguish between the concentrated forms of both, which are certainly disagreeable, and the diluted forms of both, which are equally innocuous. Of course, a one-per-cent. solution of chloride of lime has a slightly disagreeable odor, preferable, however, to the ordinary smells of a tenement, certainly to those of a tenement sick-room.

With regard to the paper as a whole, I can only express my deep feeling of pleasure at hearing it and finding so many of the points admirably brought out.

Dr. C. F. Folsom: I think the rules which have been laid down can be pretty well applied to private houses and, so far as I know, they are so applied and, I think, applied pretty efficiently. Among the tenement-house quarter of the city I think, probably, the details of disinfection are carried out in this city more thoroughly than in any other place in this country, and perhaps better in many respects than anywhere else. There are measures which I have seen elsewhere that, it has seemed to me, might be applied with very great benefit here, and that is the disposal of the family. If you go into the tenement-house district and find a single case of diphtheria, or possibly two cases in a family, the chances are that by the the time they are seen every room occupied by the family has been infected and every member of the family exposed to the contagion and a great many articles in various rooms exposed. That certainly would apply to a very large proportion of the cases. There has been for twenty years in Glasgow a practice to meet that condition with exceedingly satisfactory results, and they think they have demonstrated that scarlet fever and diphtheria, particularly, have been very much diminished since they have gone into effect. I suppose it would be fair to say, however, that they take a much more liberal view of infectious diseases than we do, both in private families and tenement-house districts. They think that a great number of cases of typhoid fever, for instance, are conveyed by personal contact, articles of food being infected from the fingers, the fingers being infected and articles of food, cups, mugs, etc.; and typhoid fever is subjected to the same isolation by being sent to the isolating hospitals that scarlet fever and diphtheria are. They have a number of houses which are isolated and which are furnished and ready for occupation at any time, and when a child, or perhaps two children, are sent to the hospital with an infectious disease the whole family is bundled out of the tenement and put into one of these houses and kept there for a week or two for observation, and until the tenement which they occupy can be completely cleansed and all the articles of clothing completely disinfected. After that is done — I think the period is usually two weeks — the family is allowed to go back, and the tenement which they have been occupying temporarily is disinfected and ready for another family to come in.

In regard to the particular point of the application of these rules to private houses, I really do not see anything that is to be added by way of discussion to what has been said, because, it seems to me, the general principles which have been so admirably laid down can be made to apply pretty well to private houses, as well as they can to hospitals. Possibly there is some other gentleman who can give us further information on this point.

Dr. Beach: I should like to ask if they have given up the use of sulphur as a disinfectant at the South Department.

Dr. McCollom: We never have used sulphur there.

Dr. Beach: The Health Department have. May I ask Dr. Durgin for his views upon sulphur as a disinfectant?

Dr. Durgin: We discontinued the use of sulphur when we adopted the use of formalin.

Dr. Fitz: Has Dr. McCollom made any experiments with reference to determining the condition of the isolating rooms which he has disinfected, for instance, with regard to the destruction of diphtheria bacilli in them, and also as to the disinfection of bedding? As I understand, the bedding is simply exposed to the formalin and, it seems to me, the formalin not having penetrating power, the interior of the mattress might be in an unwholesome condition although the exterior had been disinfected sufficiently.

Dr. McCollom: Some little time ago I did make a series of experiments, which are briefly as follows: After the disinfection of the room I took a flask holding about a litre of bouillon and had the air pumped through the flask about two hours and put the flask in an incubator, and the next morning, although there was quite a good growth, I was unable to find a growth of diphtheria bacilli.

Regarding the second point I did not make myself clear. In the ordinary case of diphtheria in the wards the mattresses are put in formalin, but if a patient is admitted with diphtheria and shortly afterwards develops scarlet fever the mattress is disinfected by steam and thoroughly aired.

Dr. Fitz: I wish to ask Dr. Shea what his rule is in cases of scarlet fever with reference to considering the patient as no longer able to transmit the disease.

Dr. Shea: Our department has no time limit. When the attending physician certifies that the person is free from infection (that means after desquamation has ceased) our agent examines the patient and if he certifies that the patient is free, the disinfection takes place and releases the patient from quarantine.

Dr. Bolles: I should like to ask if some of these gentlemen will tell me what is a suitable form of apparatus to get for formalin disinfection for private use, something between the $25 or $50 lamp and the 75-cent lamp.

Dr. McCollom: I think for a moderate-priced apparatus, Schering's lamp, where you use pastilles, is as good an apparatus as you can have. I have had as good results with that as with a $50 or $100 instrument. It is quite simple and the pastilles are not very expensive if you do not have to buy them in too large quantities. In private practice I should certainly use the formalin pastilles.

Dr. Bolles: How many pastilles would it take for a room 14 x 14 — two or three dozen?

Dr. McCollom: Yes.

Dr. Folsom: Is that as efficient as formalin gas?

Dr. McCollom: In my experiments I have had just as satisfactory results. In one instance I know the amount of gas generated was very great. A rabbit was killed in about three-quarters of an hour and various organisms used for testing were destroyed.

Dr. Durgin: It must be remembered in the use of formalin, as with all other gases, that the amount to be used depends altogether upon the tightness of the room. Most directions given with regard to the use of formalin tell you that six or eight ounces of this commercial 40-per-cent. solution to the thousand cubic feet are sufficient to kill the bacilli. This may be true in the laboratory, but the moment you go beyond the laboratory into the dwellings where we have to do the practical work, you find it necessary to disengage the gas very rapidly in large amounts, at least two or three times the amount which you are advised to use by the makers of the disinfecting machines, to do efficient work.

Dr. Fitz: Will Dr. McCollom say something more about the machine of the Empire Laundry Company?

Dr. McCollom: The Empire washing and disinfecting machine is made of iron and capable of standing a pressure of thirty pounds to the square inch. After the washing has been done and the water allowed to run out, you close the stop-cock and open the steam-valve, which causes the temperature in the interior of the cylinder to rise to 250°, if there is a pressure of fifteen pounds to the square inch. This machine is only adapted for hospital purposes. It has a diameter of three to four feet and has to be run by machinery.

Dr. Fitz: Perhaps Dr. Durgin will state whether the city runs a plant for the purpose of sterilizing goods on a large scale.

Dr. Durgin: We have two plants, one for the city and one in quarantine for that purpose. We are not using them very actively. Whenever a mattress is found badly soiled, it is ordered to be burned. Articles which are found to be badly soiled and can be boiled without injury are so treated. The mattress and pillow-covers, as a rule, need the most attention. I do not mean by this to disparage the general use of the steam-plants by any means. There are a great many articles which should be and are disinfected by steam, and cannot well be disinfected by any other agent.

Dr. Fitz: I had particularly in mind whether Dr. Durgin was receiving such articles as draperies and carpets, which, coming from the sick-room in case of scarlet fever and diphtheria, it might be desirable should undergo some means of disinfection without destruction.

Dr. Durgin: Yes, sir.

Dr. Bolles: I would like to have Dr. Durgin tell us what the general directions given to the agents for disinfection of the houses after diphtheria or scarlet fever are, as to the extent with which it is to be carried out. I mean this: When a case of scarlet fever or diphtheria occurs in a house, what are the directions to an agent as to what and how many rooms shall be disinfected, and what rule has he to go by when he reaches the house, whether it is any more than it seems to be sometimes in cases I know, where a man comes in and inquires, "What room do you want disinfected?" and does it and goes off.

Dr. Durgin: We are dependent largely in those instances upon the statement of the attending physician, the local agent and the family. The habit is to try and find out how many rooms have been used by the little offender. We find it out by the best means that we can get at. As I stated in my first remarks, we try to have the child kept in one room in good isolation, and if we find at any time during the progress of the case that it is not kept in isolation, we send for Dr. McCollom's ambulance, arm our officers with an order to take the child to the hospital, and then clean up the house.

Dr. Bolles: I had this experience, which was a very surprising one to me. Some years ago I was called to a case of diphtheria. It was not my case. I think I was called in regard to the question of tracheotomy, and did it. It was in the times when physicians made a distinction between diphtheria and croup. Two little children were sitting together; one was wheezed up with "croup" and the other little child was staying by, and they were having a stick of candy together, the croupous child sucking it a moment and passing it to the well one, so on, back and forth. I remonstrated with the mother and said, "Don't let this thing go on," and she said the doctor said it was not diphtheria; it was croup and was not contagious. The well child was sent out. The other child went through the ordinary course of diphtheria with tracheotomy and got well. The bacilli were present. The house was disinfected at the usual time and two weeks later the other child came back and promptly had diphtheria. After going through the experience of living with that other child a day or two, sucking candy from its mouth without infection, it came back four or five weeks later and promptly had diphtheria.

Dr. Fitz: The present method of disinfection would hardly admit of that occurring now.

Dr. Folsom: Unless the Board of Health has the co-operation of the medical profession, it can do very little. I had always supposed it was the duty of the physician, after there had been a case of infectious disease in a family, to notify the Board of Health if it wanted the disinfection done under their direction, in case he did not wish to do it himself. In case he wanted it done by the Board of Health, I always supposed it was the duty of the physician — I certainly have always done so — to give explicit information as to the extent of infection in the house and the amount of disinfection necessary. If the agent goes to the house and asks somebody else or has to chase around for the attending physician, he would not have much time to attend to his duties. It occurred to me that the Board of Health might do valuable work by sending circulars to the physicians in the community and tell them their duty in the case, and what the duty of the Board of Health is, and in a general way what is to be done with the mattresses and carpets, etc., but unless the physician does something the Board of Health cannot do everything.

Dr. Bolles: I do not know how far disinfection should go, and I have been anxious to know whether there was any approach to a scientific basis in regard to it. I have now a case of diphtheria in a comfortable family in a house of a dozen or fourteen rooms, and the story is this: A nurse girl came into the family two weeks ago and had sore throat. Another child in the family had sore throat and got over it without me. I was sent for for the boy in the family who had been sick about twenty-four to thirty-six hours and had the throat of diphtheria. The night before he slept in the bed with his mother and the little girl. That day he played around in the sitting-room, and of course was down in the dining-room for his meals and he also played in the attic. The next night he slept in the nursery. The little girl was sent upstairs. Now, what rooms shall I ask to have disinfected?

Dr. Durgin: If, in your judgment, this child while having diphtheria could have with his finger or otherwise infected any material in a dozen rooms, say so to us and the dozen rooms will be disinfected.

Dr. Bolles: I understand; but what rooms would you, after this story, advise to have disinfected? He had probably touched three-fourths of the things in the house.

Dr. Durgin: He may have infected every surface on which he has put his fingers. I think that those articles which he has handled should be rubbed over with a solution of bichloride of mercury or formalin. You may carry away all of the danger with a wet rag instead of filling large spaces with formalin gas. If he has remained sick for a long time in the room, he most likely has infected that room badly, but if he has played about occasionally in any room, convalescent, I would not regard that room as one calling for a general gaseous disinfection, as I would a room in which he was sick. If you believe that child has been all about the house in a way to infect those rooms, I think you should say so, and I think they should be disinfected. If the child has infected several other rooms in the house and is finally isolated in one room, the other rooms should be attended to at once. We sometimes disinfect a part of a house while the patient is in another part. I believe if one part of a house has been infected and the child is gotten into another part, the part infected should be attended to at once and the remaining part attended to as soon as the child is well. The child should be kept in one room strictly until it is well, or else go to the hospital.

Dr. Bolles: I mentioned this as an instance of what probably occurs in nearly every case of diphtheria or scarlet fever, that there is a period of twenty-four to forty-eight hours before the physician sees it that it is about the house with the other children in a state capable of conveying infection.

Dr. Durgin: I wish every physician would report at once all conditions requiring our attention in these cases, and the Board of Health will do what is necessary. I wish also that every physician here who has or can use a telephone would not fail to use it in reporting these cases, to secure the proper isolation earlier at home or in the hospital. We wish to cut every corner that is possible to cut in the treatment of these cases, in getting them to the hospital, and in the isolation if they are to remain at home. We have in our bacteriological laboratory cut corners, so that we answer you when you want a diagnosis made in about one-fourth part of the time we did a few years ago, and we wish to do the same in isolation, and we ask you to help us.

Dr. Folsom: If the Board of Health undertakes to disinfect every room in Boston in which there has been a case of diphtheria or scarlet fever, they will have to increase enormously their force, and three-fourths of them can be done under the eye of the visiting physician, and more promptly. It strikes me that it would be a good plan for the Board of Health to send a circular to every physician in the city with a few general directions how to meet these cases. In cases where the Board of Health has been kind enough to disinfect rooms that I have known about the work has been done very efficiently indeed. At the same time most of the work can be done by the visiting physician by a few simple directions, and certainly the Board of Health cannot undertake to go into every case that occurs in Boston in detail.

Dr. Durgin: We are sending circulars to every family where there is a case. They are not extended, and yet they cover the question of infection and isolation. In regard to disinfection by others, the statute law requires that this disinfection shall be done by the householder to the satisfaction of the Board of Health. Practically this cannot be done, and the Board does all of the disinfecting after the removal or recovery of the case. I appreciate the remarks of Dr. Folsom. I think in a great many instances the physician may direct and secure a great deal of this work by the family, and in doing so is teaching the family what to do in the next case and in the absence of the physician. If it should be necessary I would extend the circulars to any degree that will convey the necessary information. I am pleased with this discussion. This is what we ought to have frequently. The room ought to be full. Everybody in the profession ought to be exercised on this question. The Board of Health is making a strong fight against infectious diseases, and doing it as reasonably as they can. You cannot have perfection. You will find cases occurring after all has been done, and you will find them after every process of disinfection known to the world.

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Recent Literature.

Hand-Book of Obstetric Nursing for Nurses, Students and Mothers. Comprising the Course of Instruction in Obstetric Nursing given to the Pupils of the Training School for Nurses Connected with the Woman's Hospital of Philadelphia. By Anna M. Fullerton, M.D. Fifth edition. Pp. 262. Illustrated. Philadelphia: P. Blakiston, Son & Co. 1899.

The four previous editions of this book evince its popularity. The definitions and descriptions in the book are as a rule good and concise, while the essential points are amply described for a book of this nature. The chapter on the Use of Antiseptics in Confinement Nursing is unusually complete and practical and should be read by every nurse doing confinement work.

With respect to the treatment advised, strong exception should be taken to some of the directions of the author; as in hemorrhage from threatened miscarriage or placenta previa hot douching at 115° F. in case of much of a flow is recommended, a course which might hasten rather than lessen the impending dangers.

Any use of lysol in connection with catheters might be a source of trouble in the hands of an inexperienced person, as lysol in the bladder is likely to give rise to an obstinate and painful cystitis. In the directions for the resuscitation of the asphyxiated infant five different methods are described at considerable length, many of which have become practically obsolete. It would seem to be better in a book of this character to give one or two good and direct methods of resuscitation which the author herself had tried and found of the greatest value.

A Text-Book of Obstetrics. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. With 653 Illustrations. Pp. 846. Philadelphia: W. B. Saunders. 1898.

The professional standing and experience of the well-known author of this new text-book on obstetrics have amply fitted him for the work of preparing a book of this character. While the number of good text-books on obstetrics is considerable, yet a new book on this subject is always read with interest, particularly so if the work is that of a prominent writer. The book itself is an attractive one of ample size and contains a large number of illustrations, the majority of which are new and well chosen and many are of permanent value.

A change from the usual method of dividing a book into chapters is here observed, there being seven parts: Part I, Pregnancy; II, The Physiology and Management of Labor and the Puerperium; III, The Mechanism of Labor; IV, The Pathology of Labor; V, Pathology of the Puerperium; VI, Obstetric Operations; VII, The New-Born Infant; with, as a rule, only one or two chapters in a part.

With a fairly good index and the prominent subdivisions, the method has seemingly worked well in this author's hands, although for rapid and hurried reference the book is not of as much value as many others.

The text as a whole is well written and not as a rule too extended for students' use. As would be expected from the writer's extensive operative experience, the chapters on obstetric operations are fully up to date and worthy of careful reading, while, on the other hand, many of the details of obstetric practice which are of vastly more importance to the student and the average practitioner are treated too briefly, and are often difficult to find.

It is rather surprising to see that a five-per-cent carbolized vaseline is still advocated for use on the fingers in making vaginal examinations and that a handkerchief soaked in vinegar and inserted into the uterus is recommended to control post-partum hemorrhage, both practices which we believed had largely become obsolete.

In the teachings of the book as a whole, however, there are comparatively few points which can be seriously criticised. The foot notes are worthy of commendation, for, unlike many, the author has not filled the text with illustrative cases and comments, but where such have been made use of at all they have been inserted in fine print at the bottom of the page.

The Dispensatory of the United States of America. By Geo. B. Wood, M.D., and Franklin Bache, M.D. Eighteenth edition, thoroughly revised and largely rewritten, with illustrations, by A. C. Wood, M.D., LL.D., Joseph P. Remington, Ph.M., F.C.S., and Samuel P. Sadtler, Ph.D., F.C.S. Philadelphia: J. B. Lippincott Co. 1899.

The United States Dispensatory has been so long a recognized factor in our medical life that there is small necessity for a review of a new edition. It is a pleasure, however, to note that the same conscientiousness has characterized its editors as in years gone by and that they have furnished us with a work suited to modern requirements.

The eighteenth edition of the Dispensatory contains 1,999 pages, or about 70 more than did the seventeenth. It differs from that chiefly in the construction of Section II, Part II, which is devoted to drugs and medicines not officinal. Sixty pages have been added to this part of the volume and nearly 200 articles written. This by no means signifies all that is new, as a comparison with the earlier text shows thorough revision. Practically all the newer remedies have been included and, as a rule, those omitted have been of comparatively little significance.

The eighteenth edition more than maintains the standard of its predecessors; in its present form it furnishes the profession with the best United States Dispensatory which has ever been written.

Defective Eyesight and the Principles of its Relief by Glasses. By D. B. St. John Roosa, M.D., LL.D. With 36 illustrations and one set of test-types. Pp. 193. New York: The Macmillan Company. 1899.

Dr. Roosa states in his preface that for various reasons he decided to rewrite his book bearing the title "The Determination of the Necessity for wearing Glasses," which was published in 1888. In his more recent volume, which is the result of this revision, the subject matter is divided into seven chapters having for successive titles: Measurement of the Visual Power; Presbyopia; Myopia; Hypermetropia; Corneal Astigmatism; Asthenopia, and General Remarks as to Lenses.

The desire that this manual may be found a reliable guide to both the student and the ophthalmologist and likewise of interest to the educated layman and the general practitioner is, of course, worthy of commendation, but the question naturally arises whether the attempt to provide such a one as shall satisfy these varying conditions is good judgment. An elaborate treatise on refraction cannot be expected to enjoy wide popularity among general practitioners, or the average layman, while a discourse on the subject, somewhat popularized, scarcely appeals to the earnest student or the practical ophthalmologist. Although the author may be pardoned for shortcomings in matters of taste and judgment, the obtrusion of personal beliefs so at variance with the well-accepted doctrines of today as, for example, overconfidence in the ophthalmometer; scepticism as well as contradictions as to the value of cycloplegics in refraction; disbelief in the existence of muscular asthenopia; entire omission of the subject of sciascopy; and advocacy of the obsolete "Franklin" *n*" glass to the exclusion of the more modern and convenient device, is to be deprecated. The high professional standing of the author lends to this book a certain value not borne out by a careful examination of its contents.

A Contribution to the Surgery of Fractures and Dislocations of the Upper Extremity. By J. E. Platt, M.S. (Lond.), F.R.C.S., Honorary Surgeon to the Hulme Dispensatory, etc. Pp. 228. Illustrated by 23 drawings and skiagrams. London: H. K. Lewis. 1899.

The work is largely a reprint of a series of papers published by the writer in the *Medical Chronicle* during the latter part of 1898 and the early part of 1899. The data for the work were collected at the Manchester Royal Infirmary during a period of fifteen months. Especial attention was paid to recording the nature of the injury, its causes, the bony displacement, the methods of treatment. The first seven chapters, or Part I, are devoted to the consideration of Fractures; Part II, the remainder of the book, to Dislocations. Each bone of the upper extremity is considered separately. The clinical data are compiled, classified and tabulated in various ways. Treatment is then described and the results obtained are stated. Finally, complications and sequelæ are enumerated, and each chapter concludes with the bibliography of the subject. The illustrations are interesting, especially the skiagrams. The book is attractive and is well written. It is fully indexed. It represents a great deal of work, both clinical and literary, on the part of the writer. It is a thorough review of the subject, except, perhaps, in some minute details.

A Manual of Physiology, with Practical Exercises. By G. N. Stewart, M.A., D.Sc., M.D., (Edin.), D.P.H., (Camb.), Professor of Physiology in the Western Reserve University, Cleveland, etc. Third edition. Philadelphia: W. B. Saunders.

At the present day it appears to be the duty of all teachers of physiology to write a book on physiology. Some neglect this duty, but their neglect is amply compensated for by the kindness of various other scientific people (astronomers and geologists excepted) who write one for them.

Here we have a book, however, written by a well-known teacher of physiology, and as such it is a relief, but as a text-book it is hardly a necessity — surely we have enough already, but still they come! Dr. Stewart "does not aspire to the dubious distinction of originality" but he has written a good book, thoroughly up to date in all respects, and written in an interesting manner, the comparative work scattered throughout the text being one of the most interesting features. In some parts of the book, as when discussing unsettled questions, there may be perhaps a little too much discussion and not enough stress laid upon the solid or fundamental facts to make the book valuable reading for a beginner in the sciences, who may be discouraged and disappointed when reading of the chaotic state in which some of our principal physiological problems exist. The chapters on the Circulation and Nervous System are excellent. The practical exercises contained in the volume are of the ordinary and necessary kind requisite for a sound knowledge of physiology, the description of their technique being clear and concise.

The letter-press is excellent, the binding medium, and as for the illustrations — the great number of which have caused an enormous waste of printer's ink, horrible things, white lines on black grounds! — the less said the better. A few are good; the others are fearful creations.

A Manual of Organic Materia Medica and Pharmacognosy. By Lucius E. Sayre, B.S., Ph.M., Dean of the School of Pharmacy; Professor of Materia Medica and Pharmacy in the University of Kansas. Second edition, revised, with Histology and Microtecnique, by William C. Stevens, Professor of Botany in the University of Kansas. With 374 illustrations. Philadelphia: P. Blakiston, Son & Co. 1899.

A work of 700 pages containing, in addition to materia medica, chapters on Pharmacognosy, Insects Injurious to Drugs and Elements of Plant Histology and Microtrechnique. The introduction of these special chapters, particularly those which include vegetable histology, is of real value to students of pharmacy and others to whom a working knowledge of materia medica is necessary. The illustrations both of the plants and sections of the same are numerous and excellent. The paragraphs on Therapeutics, although necessarily limited in a work of this character, show a considerable degree of improvement over those in other similar works. The synthetic drugs are omitted entirely, only organized drugs with their preparations and constituents being considered. It is to be regretted that a few serious errors should be found. The statement on page 20 that acids when much diluted "are administered for the purpose of checking hyperacidity of the stomach by stimulating the production of the alkaline pancreatic juice and checking the acid gastric juice" is so evidently incorrect that no one could be misled. The drugs (page 24) stated to act as hepatic stimulants and hepatic depressants are certainly, in the light of recent research, all open to question, and certain of them have been proven to be entirely without the action credited. Toxicodendric acid, so called, prepared by the method given, is not toxic, being only acetic acid, and the true active principle of poison ivy, toxicodendrol, is not mentioned.

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REPORT OF THE MARINE-HOSPITAL SERVICE.

OWING to the war with Spain and the consequent acquisition of new territory, the past year has been the most active in the one hundred and one years of the existence of the Service. During the fiscal year 1899, 55,489 patients have been treated, of whom 12,610 were cared for in hospitals. A step in progress has been the transference of an abandoned military reservation in New Mexico to the uses of a hospital for the treatment of tuberculosis, and patients are now being sent. As the report states, this measure will not only be of benefit to the patients treated in this favorable climate, but will relieve the marine hospitals of these contagious cases, and will be of material aid to the great movement now being urged throughout this and other countries in suppressing this communicable disease. This wise action on the part of the Marine-Hospital Service is only another indication that the value of hospitals for this class of disease is being universally recognized. We are particularly glad to see that the Government is willing to stand behind such a movement, which certainly bids fair, in the near future, to put a new face on the problems to the individual and community, associated with this most widespread and fatal disease.

Laboratory investigations have been prosecuted with vigor during the year, particularly in relation to certain infectious diseases, and the possibility of their prevention or cure through the use of serums. The work in typhoid and yellow fever is still in progress. In connection with the always difficult matter of quarantine, which we have recently had occasion to discuss in these columns, it is of interest to note that the Service now owns and operates thirteen completely equipped quarantine stations. The report expresses the hope that finally, as has recently been done in the case of Savannah, all local quarantines may come under the exclusive jurisdiction of the National Government. Such action might, no doubt, conduce to greater uniformity of service and lead finally to a system as free from abuses as the nature of the matter permits.

With regard to the suppression of small-pox the position is taken that the methods of overcoming the disease in communities are so plain, and the protection of individuals so evidently the duty of the communities themselves, that the Marine-Hospital Service does not assume any financial obligations connected therewith. The Bureau has, however, issued a large number of a précis upon the methods of diagnosing and suppressing this disease, which have proved of great value to local authorities. Expert officers have been detailed in several of the States, at the request of the governors or health authorities thereof, and a general vaccination of crews of vessels on the Great Lakes, the rivers, and Atlantic and Gulf coasts has been conducted by the officers of the Marine-Hospital Service during the past winter to assist in the movement to suppress the disease. Measures have likewise been taken to put in effect the act passed by the last Congress authorizing a commission of medical officers to determine the number of cases of leprosy now in the United States. The general agreement that has finally been reached that the bacillus icteroides, discovered by Sanarelli, is the specific cause of yellow fever has led to the hope that a protective and curative serum may be found. Pending this outcome, however, the surgeon-general urges that other means be not neglected and that particular attention be given to proper sanitation. It is known, says the report before us, that there are many seaports of this hemisphere where yellow fever is endemic because of bad sanitary conditions, readily removable by proper sanitary engineering. An inquiry is now being conducted concerning the ports of the Western Hemisphere where yellow fever constantly prevails, with a view of definitely determining the reason therefor, and proving, if possible, that it is due to want of proper drainage, sewerage, and cleanliness of the harbor. The report suggests that in the interests of commerce, as well as of life and health, the time may come when an international agreement may be effected between the republics of this hemisphere by which the unsanitary conditions which perpetuate this western pest in certain ports will be considered a just cause of complaint by the other republics, and such quarantine or other restrictions imposed by mutual agreement upon the government possessing the offending port as will cause it to adopt the necessary measures for the removal of the evil. The surgeon-general points out that action of this character would be far-reaching in its effects upon the welfare and commercial prosperity of all.

With the various and trying responsibilities coming to us with our new possessions not the least is the problem connected with the diseases which go with the acquisition of territory in tropical countries. The short experience we have already had, however, and the success which has attended our efforts, notably in Cuba, does not permit us to doubt that the difficulties will be fairly met, with the final result that these formerly dreaded disorders will take their place among the preventable diseases. Nothing should so excite our enthusiasm, and raise our respect for the profession to which we belong, as this whole matter of preventive medicine. In it, no doubt, lies the greatest field of future work, and one to which the best energies of the best men will be devoted. The Marine-Hospital Service is clearly recognizing its possibilities and is accomplishing results of growing significance.

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SOME RESULTS OF ENTHUSIASM.

As a rule, if the proper enthusiasm be brought to bear, we attain our ends. A case in point, to which we wish briefly to refer, is the enthusiasm for pathological research which has of late grown up in this community.

Not many years ago, and certainly quite within the memory of the younger generation, an autopsy was a not too frequent luxury of the aspiring medical student. It was generally supposed that any sufficient experience in this most important branch of medical training must be gained somehow outside the regular medical course. It is true that at our larger hospitals post-mortem examinations were the exception rather than the rule, a fact due rather to lack of enthusiasm, as the event has shown, than to a deeply rooted prejudice on the part of friends and relatives. At any rate, a change came, and without any great upheaval it may be said that autopsies are now rather the rule than the exception.

This has come about largely through the active interest in the matter taken by the younger men, notably the house officers of the various institutions, stimulated by their elders. Prejudice has been found far less impregnable than supposed, and reasonable representations have usually met with as reasonable a response. At one period the number of autopsies done at the Massachusetts General Hospital was far above 75 per cent of all patients dying in the institution, due to the strenuous efforts of its house officers.

When the Long Island institution started on its career as a hospital, it was urged that in that class of almshouse patients autopsies would be particularly difficult to obtain, owing to the active prejudices existing among the poorer classes of the community. The event has shown such a foreboding to be entirely unfounded. Between 50 and 60 post-mortem examinations have been made within a year, to the very decided benefit of medical teaching.

It must not, however, for a moment be supposed that this result has been obtained without effort. As an example of the enthusiasm which makes such results possible, we would mention the fact that very recently the assistant pathologist of the hospital, with several assistants, rowed to Long Island in the evening in an open boat, for the purpose of performing an autopsy, reaching Boston again at four o'clock in the morning. This requires devotion to one's work of a high order, but with such sustained enthusiasm there cannot be the slightest doubt that this least esthetic and most important side of medicine will quickly gain such a place that wise legislation, looking to the recognition of the right to perform autopsies in all cases, will, in time, be forthcoming.

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MEDICAL NOTES.

Professor Birch-Hirschfeld. — The death of Professor Birch-Hirschfeld is announced. He has for many years held the position of professor of pathological anatomy at the University of Leipsic.

New Disease from Manila — An unofficial report comes from Manila that a disease, beginning with dysentery and going on to a condition of more or less paralysis of the extremities, is prevalent among officers and men of the army. The description suggests neuritis.

Arrival of English Surgeons in Africa. — Sir William McCormac and Mr. Frederick Treves have reached South Africa, and are now with Sir Redvers Buller's army, where it is supposed their services will be most needed. Sir William was present with the troops at the action of the Tugela River, and Lieutenant Roberts, who was mortally wounded in that action, had the benefit of his great skill and experience.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, December 20, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 71, scarlatina 44, measles 45, typhoid fever 5, small-pox 3.

Small-Pox in East Boston, Mass. — Two cases of small-pox have developed within a few days in East Boston, one of which is said to be of a severe type. One of the cases it seems possible to trace to Chelsea, where the patient had been several days before. Both patients have been removed from their homes to the hospital.

Improved Conditions in Brookline, Mass. — It is reported by the Board of Health of Brookline that the conditions in that town have greatly improved during the last month. No new cases of diphtheria have appeared during December.

Yale Medical Alumni Association Lecture. — This annual lecture was delivered at New Haven December 13th last, on "Some Paths of Tuberculous Infection," by W. P. Northrup, M.D., professor of pediatrics in the University and Bellevue Hospital Medical College of New York. President Hadley was present and introduced the speaker. After the lecture there was a reception at the house of Dr. Leonard Bacon.

Shower-Baths for Public Schools. — The Hartford, Conn., Board of Health, it is said, has decided to put shower-baths in the public schools, as a protection against disease. The plan is that children who have been quarantined and barred from school because of disease existing in the buildings in which they live, will upon their return be required to bathe and have their wearing apparel thoroughly fumigated. Cleanliness is, undoubtedly, desirable, but how far a shower-bath, without other accessories, is likely to prevent disease remains to be seen. More definite results might be attained if the children could be fumigated as well as their clothes.

The New Haven County Public Health Association. — We learn from the *Monthly Bulletin* of the Connecticut State Board of Health that it announces the recent organization of the above Association. At the meeting called for this object every town in the county was represented. A constitution and by-laws had been carefully prepared, which were unanimously adopted. The Association makes eligible for membership all persons in the county who are officially engaged in public health work. This organization marks a long and strong step in progress. It is probably the beginning of a series of similar associations in each county, and perhaps a final combination of the whole in a general State society.

NEW YORK.

Electrocution Condemned. — At the last meeting of the Society of Medical Jurisprudence, which, as the President stated on this occasion, was instrumental in securing the introduction of electrocution in the State of New York, Roger M. Sherman Esq., read a paper on "The Law and Science of Capital Punishment by Electricity," in which he objected strenuously to the method on the ground of its causing unnecessary suffering to the subject. His contention was that this suffering was due to the surface condition of moisture commonly met with in those about to be executed, and in the course of his remarks he said: "The moistened sponge to facilitate the current comes in contact with a moistened skin. Is there any reason to suppose that the general law which, especially in the case of electricity, seeks the path of least resistance will not convert the surface of the victim into a voltaic arc? Will the electric force rather penetrate through that non-conductor, the bony parts of the skull? The voltaic arc, which generates heat used for fusing the most refractory substances, is hardly the condition to create upon the surface of the human body as a mode of inflicting instantaneous and painless death, and in the name of humanity."

Annual Report of Board of Managers of Craig Colony. — The annual report of the Board of Managers of the Craig Colony for Epileptics, of which Dr. Frederick Peterson, of New York City, is the President, has been submitted to the State Board of Charities. Since its opening, in the early part of 1896, 504 epileptics have been received, of whom 378 remain. When the new buildings now in course of construction are completed, the capacity of the colony will be increased to a total of 720 beds. During the past year 95 new cases were admitted, 40 males and 55 females, and 35 were discharged. The death-rate for the year has been less than two per cent., and is the lowest in the history of the institution.

An Important Legal Decision. — The Court of Appeals has recently reversed an order of the Fourth Appellate Division of the Supreme Court, which sustained the plaintiff's exceptions to the direction of a verdict for the defendant, and which granted a new trial, in a suit which Margaret Hughes, as administratrix, brought against the city of Auburn for damages for the death of her daughter. Mrs. Hughes claimed that the latter's illness and death resulted from disease caused by a defective and insufficient sewer, which in times of heavy rain overflowed into the cellar of the house where she resided. The opinion of the Court, as given by Judge O'Brien, but which was dissented from by two of the judges, was that the statute which permits actions for damages by reason of death caused by the wrongful act, neglect, or default of another has no application in such a case, and that no action against a municipality can be maintained by an individual for damages from sickness caused by the neglect of public officers to observe sanitary laws.

Decision in Regard to Vessels from Santos. — The Board of Health has at last announced its decision in regard to vessels and their cargoes from Santos. It has ordered that the coffee from the *J. B. Taylor*, which sailed for Queenstown on December 12th, without being allowed to land, shall be roasted at a point designated by the department's officials, after which, the bagging having been burned, it shall be permitted to be landed in the city. The other three vessels which have been in quarantine, but on which no cases of plague occurred, are permitted to dock and to land their coffee, and in the future all vessels arriving from infected ports are to be allowed to dock after having been subjected to the precautionary measures prescribed by the health officer of the port and the Federal authorities. In cases, however, in which there has been infection on board, the cargo must be treated in the same manner as that of the *Taylor*.

Miscellany.

A RARE BOOK ON SURGERY.

Among the treasures of the Congressional Library is a volume on surgery by Ambroise Paré, with the date 1649. In the preface stands the following, possibly somewhat exaggerated, statement of his attainments, which, in view of his distinguished service to humanity, may very well be excused: "For God is my witness, and all good men know that I have labored fifty years with all care and pain, in the illustration and amplification of chirurgery; and that I have so certainly touched the work whereat I aimed that antiquity may seem to have nothing wherein it may exceed us, besides the glory of invention; nor posterity anything left but a certain small hope to add some things." He further suggests the following rules, which possibly have some bearing even in our own day: "You shall comfort the patient with hope of recovery even when there is danger of death. Grief is good for none but such as are very fat."

AN INQUIRY AS TO THE INCREASE AND INFECTIOUSNESS OF CANCER.

The Massachusetts State Board of Health is instituting an inquiry as to the increase and infectiousness of cancer. The Board has issued a circular which states that:

"Every year there is an increase in the reports to the State of the number of deaths from cancer, even when allowance is made for age and greater population. By some it is alleged that this is due to an increase of the disease itself; by others, that better diagnosis and more careful registration will account for it. Furthermore, the infectious nature of this disease, caused by a possible parasite, and its contagiousness have been strongly urged. It is with a view of helping to procure more accurate information upon these points that this inquiry is undertaken, and coöperation is asked to that end."

The following questions have suggested themselves as bearing on the subject, and possibly others will suggest themselves to recipients of the circular. Answers on any points will be gladly received:

(1) Looking back over your practice, do you find more cases of cancer in proportion to the total number of all cases coming under your observation, within the last few years, than you did in former years?

(2) If so, can you express it in percentage, comparing two periods as follows: Three or five years, 18 — to 18 —, per cent. of cancer cases to total cases; five years, 18 — to 18 —, per cent. of cancer cases to total cases?

(3) Do you think this can be accounted for by the fact that now more of your patients are elderly people than formerly?

(4) Do you now see more cases of internal cancer in proportion to the total number of cancer cases than formerly?

(5) If so, can you state it, as before, in percentage?

(6) Have you ever seen a number of cases originating about the same time, that would warrant you in speaking of an epidemic of the disease?

(7) Have you noticed cases of cancer in parts of the body that might come in contact, as in married people, that would suggest a communication of the disease from one to the other in that way?

(8) Have you noticed any case where several members of the same family living together have been affected?

(9) Do you know of any cases that would point to an hereditary transmission in the family?

(10) Have you noticed any cases in different families that have occupied the same house at different times ("cancer houses," so-called)?

(11) Is there any location where you have noticed cancer to be especially prevalent?

(12) If so, what is the nature of its soil, or physical or geological formation?

Replies may be addressed to Dr. Wm. F. Whitney, Harvard Medical School, Boston, Mass., who has charge of the inquiry.

FREE MEDICAL AID TO SOLDIERS' FAMILIES.

The suggestion that physicians should give practical aid to the families of soldiers rendered destitute by the death or injury of the chief wage-earner calls out the following comments from the *Medical Press*: "The proposal that medical men should give practical help to the movement for relieving the wives and families of soldiers engaged in the South African War is founded on a knowledge of the humane generosity that we are glad to believe animates the medical profession. The gratuitous service already accorded to the community from that quarter is well-nigh incalculable, indeed, if we may believe complaints that have flooded medical journalism for the past half century or more, the habit has led to a crop of sorry abuses. From that point of view it may be well to utter a word of caution as to the manner in which this latest military relief scheme is carried out. The organizers, so we are told by a London morning paper, have been bombarded with offers of free attendance from leading practitioners of the West End. Surely, as regards the honorary surgeons and physicians of hospitals, dispensaries and other medical charities, attendance at their institutions would already provide the aid that is asked for. In every district there are scores of general practitioners who would be willing to extend their list of gratuitous patients so as to include the families of soldiers at the war. The published method of the Soldiers' and Sailors' Families Association is to look up the wives of all the soldiers at the front. Should they discover a case needing medical help they communicate at once with one of the free doctors, who attends the patient and sends on the prescription to the free chemist. Without careful precautions this plan opens the door to undesirable competition and jealousy, although at the same time it is impossible to withhold a cordial approval of the general tenor of the scheme."

SOME HIDING PLACES FOR THE TUBERCLE BACILLUS.

We now know pretty well how to fight the tubercle bacillus in the open, but we are only gradually learning the infinite variety of ambush in which it may lie in wait for us. For instance, although the cigarette has an indifferent reputation among sanitarians, the cigar has hitherto been looked upon rather as a safeguard than a source of infection. There appears, however, to be some reason to suspect that this good character is undeserved. The United States Sanitary Commissioner at Constantinople, in a recent report to Surgeon-General Wyman, of the United States Marine-Hospital Service, says that the sanitary officer at Cavalla has been much impressed by the spread of tuberculosis among the workmen in the tobacco factories there. In order that the special qualities for which it is so highly prized may not be lost, Turkish tobacco should be exposed to the air as little as possible; consequently, in the course of its manufacture into cigars, no circulation of air is allowed in the workrooms. These rooms, besides being ill ventilated, are damp; the workmen are crowded in them and inhale all the dust caused by the manipulation of the herb. They sleep in the rooms, and are poorly clad and insufficiently fed. Bronchitis is universal, tuberculosis very common among them, and they spit all about the rooms. The bacillus may also lurk among the leaves of books. The New York State Board of Health recently received a communication from the Board of Health of Michigan stating that twenty clerks in that State, who were working over several volumes of records, were taken ill with consumption and died. The books were examined by a bacteriologist, who found them full of tubercle bacilli. It is thought that they became infected from a clerk who had consumption, and who had the habit of moistening his thumb with saliva when he turned a page. A similar occurrence originating in a like cause has lately been reported as taking place in a German labor bureau. Here, too, investigation proved that the books had probably been infected by a consumptive clerk who had the habit of moistening his finger in his mouth whenever he turned the pages of a book. These facts have a moral for all of us in these days of free libraries. Another possible source of infection to which attention has recently been called is what is called in America the "Chautauqua salute," which appears to consist in the waving of handkerchiefs by way of greeting or applause. It was estimated that in a crowd of 20,000 persons who welcomed President McKinley in this fashion lately there were 4,000 suffering from pulmonary tuberculosis. How many myriads of bacilli were shaken out of their handkerchiefs is past all computation. Even the British cheer will, it is to be feared, come under the ban of the National Association for the Prevention of Consumption, for Flügge has lately shown that in ordinary speech a considerable number of micro-organisms are discharged from the mouth. A much larger number must be expelled in cheering. It would be an interesting problem to calculate the number of tubercle bacilli that came from the throats of Her Majesty's lieges during the Diamond Jubilee procession. — *British Medical Journal.*

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RESEARCH *VERSUS* THE PRACTITIONER.

The *Lancet* in the course of a recent editorial makes the following reasonable remarks concerning the relation of the theoretic to the practical side of medical education:

"It is impossible to study dissertations or discussions upon medical education without seeing that the speakers are generally divided into two groups, one of which believes in research and the other in resource. Each group, of course, is right, as each would be wrong if it affected to despise the other or to believe that the best medical man, the man that is most helpful to the sick in his generation, could be turned out upon its own recipe regardless of the opposite school of thought. But the work of pure research should for obvious reasons be dissociated from institutions like hospitals and carried on in some neutral place distinct from hospital premises. The hospital should be regarded by medical men, as it is by the public, as much as possible as a place for the cure of patients by recognized and established methods. Secondly, the research element in education must not be allowed to interfere with its more practical elements and the teaching of the readiest ways of relieving human suffering. The clinical method for some time, if not always, must prevail in medical education. Readiness and resource are indispensable in an efficient practitioner, whether he has to relieve a colic or remove an adherent placenta, and higher research work for the present must occupy a distinct department of medicine. It is probable that we shall have a long time to wait before we can reach such knowledge of physiology and pathology as to perfect our insight into disease, and in the meantime the problems of medical practice and the calls for relief of the suffering press. Readiness and resource are inestimable qualities in the practitioner, and that is the best medical school in which the student is taught the most indispensable and generally available modes of treatment for the cases which will come before him in actual practice. There need be no rivalry between research and resource, but there is much need for mutual respect between their typical representatives, and the best medical practitioner will be he who so appreciates them both as to learn lessons that will apply to the actual treatment of disease."

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THE STRAWBERRY IN THERAPEUTICS.

Apropos of the recent recommendation of the use of the strawberry as a special dietetic treatment of the innumerable ills of gout, Dr. John Knott, writing in the *Medical Press*, suggests that it may be interesting to detail the therapeutic history of this very palatable fruit. He has accordingly culled the most important evidence on the subject from the pages of the prominent herbal authorities of the past centuries. The quaint and always entertaining John Gerard gives his readers the following information on the subject of the therapeutics of the strawberry, which we quote in part:

"THE VIRTUES.

"*The Liquid Juice.* — Taken to the quantity of three or four spoonfuls or more, either mixed with the Syrup of the ripe Berries, or with a little Mutton Broth, Morning and Night, it cools the Blood and Liver, allays Inflamations of the Reins and Bladder, provokes Urine, takes away the heat, sharpness and scalding thereof; stops Women's Courses and the Bloody Flux, and decreases the Tumour or Swelling of the Spleen. Applyed to the Gums it fastens loose Teeth, stops Catarrhs, or Defluxions of Rheum to the Mouth, Throat, Teeth, and other Parts, and is singular good for hot, red, and inflamed Eyes, being dropt into them: As also to repel hot, red, and sharp Tumors or Eruptions in the Skin, whether Face, Hands, or other parts; and to take away redness of the Face, Spots or other Deformities of the Skin.

"*The Decoction of Roots, Leaves or Unripe Fruit in Water and Wine.* — It has all the former Virtues, being used in the same manner, and may be taken to half a Pint at a time Morning and Night.

"*The Lotion or Gargarism.* — Take of the Liquid Juice or Decoction a Pint, Honey three or four Ounces, Spirit of Wine two Ounces, mix and dissolve. It cleanses and heals foul Ulcers in the Mouth, Throat, Privities, or other parts, heals Ulcerated and Spungy Gums, and fastens loose Teeth.

"*The Distilled Water of the same Roots, Leaves and Berries.* — It is good for hot and inflamed Eyes, redness of the Face and Skin, and other Deformities of the same; hot Eruptions of the Same, Anthonies Fire, &c.

"*The Ophthalmick.* — Take of the former Distilled Water a Pint, Honey three Ounces, Spirit of Wine two Ounces, mix and dissolve. Dropt into the Eyes 3 or 4 times a day it is good against an Ophthalmy, redness, inflamation, and hot Rheums in the Eyes.

" *The Ripe Berries* — They cool a hot and cholerick Stomach; as also the Blood, Liver, and Spleen; quench Thirst, and refresh weak and fainting Spirits.

" *The Syrup of the same Berries.* — It has all the same Virtues, and may be given two or three Ounces at a time upon Occasion.

" *The Distilled Water of the Ripe Berries.* — It is a Cosmetick for the Skin, good against Fever, and Inflamations of the Eyes; Anthonies Fire, and other like hot Eruptions; Melancholy, Faintings and Passions of the Heart.

" All readers of the above record must admit that the *latest* of the '*new*' remedies for gout has in former ages occupied a rather prominent position in the therapeutic armamentarium. And that the judicious internal administration of strawberries — with or without cream or other correspondingly pleasant adjuvant — will always prove 'comfortive and cordial' as well as 'arthritick,' to the gouty as well as to those not so afflicted, the present compiler, for one, entertains no doubt whatever." We occasionally feel that the vaunting of new remedies in our own day bears a certain resemblance to this optimistic view of the strawberry's virtues.

Correspondence.

SWEDISH BOOKS ON MASSAGE.

BOSTON, December 15, 1899.

MR. EDITOR: — Dr. A. H. Lindström's reply (JOURNAL, December 7th) to my letter on "Reviewers of Books on Massage," in place of invalidating what I said, really helps to confirm it, as your readers may possibly see for themselves, if they are sufficiently interested to read the following.

The late Baron Nils Posse was one of the ablest exponents of Swedish movements and massage in this country, and Dr. A. H. Lindström was at one time his pupil and assistant, and none the worse for that. In 1887 I wrote to Baron Posse and asked him for a list of books on massage in the Swedish language. He replied that there were no books specially devoted to massage in Swedish, and that though the Swedes had published short articles on massage in journals, yet for books they relied on other languages. Then I advised Baron Posse either to write a book on massage himself, of which he was quite capable, or else translate what he thought would be most appropriate. He chose my encyclopedic article in Wood's "Reference Hand-book." This is an article of twenty-six pages of fourteen hundred words to a page, treating briefly of massage in nearly all of its ramifications. It made a handy little book of one hundred and twenty pages. Information drawn from Scandinavian sources was freely used in it, and also in articles published by me in the "New York Medical Record," in 1877 and 1879, and in my "Treatise on Massage" in 1884 and 1890. So that Dr. Lindström's inference that I want to make people believe that I introduced massage into Sweden is gratuitous and absurd.

As for the titles of those Swedish communications that Dr. Lindström mentioned as antedating the translation of my encyclopedic article into book form, the first only is a book on "Gymnastics for the Sick," the third edition of which, translated into French, lies before me now with not a word about massage in it; the others are articles in journals on special subjects and not books at all, and with the results of most of these articles I have already familiarized your readers. Major Thure Brandt's article was probably a long one and has since been published as a separate monograph. All of this goes to confirm what I said, that the translation of my article in Wood's "Reference Hand book," was *probably* the first thing in the shape of a book in the Swedish language. Dr. Gustaf Norstrom's learned and excellent book on massage is published in French and not Swedish, which would seem to indicate that the work of Swedes in this line is more appreciated abroad than at home.

Very truly yours,
DOUGLAS GRAHAM, M.D.

FURTHER PREVENTION OF CRUELTY TO ANIMALS IN THE DISTRICT OF COLUMBIA: SENATE BILL NO. 34.

PHILADELPHIA, December 16, 1899.

TO THE MEMBERS OF THE MEDICAL PROFESSION IN THE UNITED STATES: — The cause of humanity and of scientific progress is seriously menaced. Senator Gallinger has again introduced into Congress the bill for the "Further Prevention of Cruelty to Animals in the District of Columbia," which he so strenuously and misguidedly advocated in the last two Congresses. Its present number is "Senate Bill No. 34." Twice the Committee on the District of Columbia has also unfortunately and misguidedly reported the Bill with a favorable consideration. The Bill is speciously drawn to seem as if it were intended only in the interest of prevention of cruelty to animals. The real object of the Bill is two-fold: First, to prohibit vivisection, and, secondly, to aid the passage of similar bills in all the State Legislatures.

I need hardly point out to you that this would seriously interfere with or even absolutely stop the experimental work of the Bureau of Animal Industry and the three medical departments of the Government, the Army, the Navy, and the Marine-Hospital Service. The animals themselves might well cry out to be saved from their friends. No more humane work can be done than to discover the means of the prevention of diseases which have ravaged our flocks and herds. All those who raise or own animals, such as horses, cattle, sheep, pigs, chickens, etc., are vitally interested in the preservation of their health and the prevention of disease.

The inestimable value of these scientific researches as to the prevention and cure of diseases among the human beings it is superfluous for me to point out. Modern surgery and the antitoxin treatment of diphtheria alone would justify all the vivisection ever done.

As my attention has been called officially to the introduction of the Bill, I take the opportunity of appealing to the entire profession of the country to exert themselves to the utmost to defeat this most cruel and inhumane effort to promote human and animal misery and death and to restrict scientific research. It is of the utmost importance that *every physician* who shall read this appeal shall *immediately* communicate especially with the senators from his State, shall also invoke the aid of the representatives from his or other districts in his State and by vigorous personal efforts shall aid in defeating the Bill.

It is especially requested also that all of the national State and county societies at their next meeting take action looking toward the same end. If regular meetings are not soon to be held, special meetings should be called. Correspondence is invited from all those who can give any aid.

The Committee on the District of Columbia consists of Senator James McMillan, Chairman, Michigan, and Senators J. H. Gallinger, New Hampshire; H. C. Hansborough, No. Dakota; Redfield Proctor, Vermont; J. C. Pritchard, No. Carolina; Lucien Baker, Kansas; C. P. Wetmore, Rhode Island; C. J. Faulkner, West Virginia; Thomas S. Martin, Virginia; Wm. M. Stewart, Nevada, and Richard Kenney, Delaware. Personal letters may be addressed to them or to other senators. Petitions should be addressed to the Senate of the United States.

W. W. KEEN, M. D.,
President of the American Medical Association.

METEOROLOGICAL RECORD

For the week ending December 9th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....3	29.72	46	51	38	63	65	64	W.	S.	8	4	C.	F.	
M...4	29.52	42	54	31	89	57	73	S.	W.	4	22	C.	C.	
T....5	29.95	32	36	29	62	42	52	W.	S.W.	12	8	C.	C.	
W...6	30.09	33	37	29	80	54	67	S.	N.W.	8	9	F.	C.	
T....7	30.43	30	38	22	74	64	69	N.W.	S.	8	6	C.	C.	
F....8	30.02	38	44	31	76	50	63	S.W.	N.W.	14	11	C.	F.	
S....9	30.35	28	33	23	62	50	56	N.W.	N.	18	10	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 9, 1899.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,550,053	1093	385	9.71	25.11	1.35	1.80	4.50
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,266,832	412	105	10.50	16.00	.40	3.20	7.00
St. Louis . . .	623,000	—	—	—	—	—	—	—
Boston . . .	539,416	207	64	5.28	22.08	—	1.44	1.44
Baltimore . .	506,389	159	41	8.19	16.48	1.89	.63	1.89
Cincinnati . .	405,000	102	—	4.95	9.90	1.98	—	1.98
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	305,000	100	26	16.00	14.00	2.00	12.00	2.00
Washington .	277,000	114	33	10.35	11.04	.69	4.14	3.45
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	56	12	10.56	21.12	1.76	1.76	1.76
Nashville . .	87,754	27	8	7.40	22.20	7.40	—	—
Charleston . .	65,165	37	6	8.10	8.10	5.40	2.70	—
Worcester . .	111,732	36	15	16.66	15.08	—	2.77	15.08
Fall River . .	103,142	—	—	—	—	—	—	—
Cambridge . .	92,520	23	10	8.90	17.80	—	—	8.90
Lowell . . .	90,114	31	11	9.69	19.38	—	6.46	3.23
New Bedford .	70,511	25	10	12.00	20.00	4.00	—	4.00
Lynn	68,218	12	2	—	16.66	—	—	—
Somerville . .	64,394	12	3	16.66	16.66	8.33	8.33	—
Lawrence . .	59,072	16	11	6.25	—	—	—	6.25
Springfield . .	58,266	22	—	12.45	20.75	—	4.15	8.30
Holyoke . . .	44,510	13	7	6.79	—	—	—	6.79
Brockton . .	38,759	8	5	—	—	—	—	—
Salem	37,723	6	2	—	—	—	—	—
Malden . . .	36,421	11	3	18.18	—	—	—	—
Chelsea . . .	34,235	15	5	46.62	—	—	6.66	26.66
Haverhill . .	32,651	5	3	—	20.00	—	—	—
Gloucester . .	31,426	5	2	—	—	—	—	—
Fitchburg . .	30,523	11	—	9.09	—	—	—	—
Newton . . .	30,461	7	1	—	28.56	—	—	—
Taunton . . .	28,527	10	2	—	10.00	—	—	—
Everett . . .	28,102	5	2	—	60.00	—	—	—
Quincy . . .	24,578	4	—	25.00	25.00	—	—	25.00
Pittsfield . .	23,421	5	3	40.00	—	40.00	—	--
Waltham . .	22,791	8	1	—	—	—	—	--
North Adams .	21,583	2	—	—	—	—	—	—
Chicopee . .	18,316	5	2	—	—	—	—	--
Medford . . .	17,190	3	2	—	33.33	—	—	—
Newburyport .	15,036	4	—	—	25.00	—	—	—
Melrose . . .	14,721	5	1	40.00	20.00	—	40.00	—

Deaths reported 2,632; under five years of age 520; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 273, acute lung diseases 520, consumption 320, diphtheria and croup 118, typhoid fever 61, diarrheal diseases 32, scarlet fever 18, measles 14, whooping-cough 15, erysipelas 7.

From scarlet fever New York 6, Boston 4, Philadelphia 3, Washington, Worcester, New Bedford and Fitchburg 1 each. From measles New York 11, Chelsea 2, New Bedford 1. From whooping-cough New York 9, Philadelphia 2, Boston, Washington, Providence and Charleston 1 each. From erysipelas New York 4, Cincinnati, Washington and Providence 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,404,408, for the week ending December 2d, the death-rate was 18.9. Deaths reported 4,135: acute diseases of the respiratory organs (London) 430, diphtheria 121, measles 110, fever 79, whooping-cough 60, scarlet fever 34, diarrhea 32, small-pox (Hull) 14.

The death-rates ranged from 11.4 in Croydon to 25.2 in Hull: Birmingham 19.1, Bradford 16.8, Cardiff 16.3, Gateshead 15.2, Huddersfield 13.6, Liverpool 23.8, London 19.4, Manchester 18.5, Newcastle-on-Tyne 19.6, Nottingham 16.1, Portsmouth 16.9, Sheffield 21.8, Swansea 15.1, West Ham 16.7.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 16, 1899.

W. L. BELL, assistant surgeon, detached from the "Philadelphia" and ordered to the "Independence."

W. M. GARTON, assistant surgeon, orders of December 6th modified; detached from the Washington Navy Yard and ordered to the "New York" immediately.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DECEMBER 14, 1899.

OAKLEY, J. H., passed assistant surgeon. To proceed to New York, N. Y., and report to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. December 13, 1899. To proceed to Queenstown, Ire., for duty. December 13, 1899.

WICKES, H. W., passed assistant surgeon. To proceed to New York, N. Y., and report to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. December 8, 1899. To proceed to Glasgow, Scotland, for duty. December 8, 1899.

GREENE, J. B., passed assistant surgeon. To proceed to Bremen, Germany, for duty. December 8, 1899.

MATHEWSON, H. S., assistant surgeon. To proceed to New York, N. Y., and report to Surgeon L. L. WILLIAMS (Immigration Depot) for special temporary duty. December 13, 1899. To proceed to Liverpool, Eng., for duty. December 13, 1899.

CORPUT, G. M., assistant surgeon. To proceed to Marseilles, France, for duty. December 8, 1899.

KING, W. W., assistant surgeon. Detailed as inspector of unserviceable property at New Orleans, La. December 8, 1899.

MCISAACS, FRED, acting assistant surgeon. Granted leave of absence for two weeks from December 21st. December 9, 1899.

APPOINTMENT.

AGNES C. VIETOR, M.D., has been appointed assistant surgeon on the staff of the New England Hospital for Women and Children.

SOCIETY NOTICE.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, December 27, 1899, at 8 P. M.

Dr. Frederick W. Johnson will report a "Case of Extra-uterine Pregnancy, with Operation."

Discussion on the "Conservative Operative Treatment of Uterine Fibroids." Opening papers by Drs. Washburn, Burrage and Kingman.

R. A. KINGMAN, M.D., *Chairman.*
C. H. HARE, M.D., *Secretary,*
285 Marlborough Street.

RECENT DEATHS.

SAMUEL KETCH, M.D., orthopedic surgeon, who was formerly president of the American Orthopedic Association, died suddenly at his home in New York on December 14th, of cardiac disease. He was born in New York City and was forty-four years of age. He completed his academic education at the College of the City of New York and was graduated from Bellevue Hospital Medical College. At the time of his death he was attending surgeon to the New York Orthopedic Dispensary and Hospital and to the Montefiore Home for Chronic Invalids.

DR. FREDERICK L. JOHNSON, M.D., of Maspeth, Borough of Queens, New York City, died on December 10th. He was born in 1869 and was a graduate of the Medical Department of the University of Pennsylvania.

Original Articles.

CONTRIBUTIONS TO THE SURGERY OF THE BILE PASSAGES, ESPECIALLY OF THE COMMON BILE-DUCT.[1]

BY W. S. HALSTED, M.D., BALTIMORE, MD.,
Surgeon-in-Chief to the Johns Hopkins Hospital; Professor of Surgery in the Johns Hopkins University.

Just now I am very much impressed with the splendid results of operations for gall-stones in the common duct, for we have had of late a series of cases very desperately ill, and so transformed by their emaciation and discoloration, and so feeble in body and mind, that I could hardly picture to myself the various stages of the metamorphosis toward convalescence. Every one has seen a patient whose life has been despaired of convalesce from acute disease; they watched his rapid decline and expected an almost equally rapid recovery; but when the decline has covered a period of five or ten or perhaps twenty years, the changes wrought are so great and apparently of such permanent character that the complete restoration to health is the more astonishing. The large cirrhotic liver, the dry slate-yellow skin, the enfeebled intellect, the body emaciated to the last degree, seem at times almost to preclude all hopes of recovery to the practitioner who has not witnessed the changes so quickly brought about by nature as soon as the mechanical obstacles to recovery have been removed by the surgeon. What nature accomplishes without the surgeon's aid in her attempts to rid herself of the obstruction in the gall-passages and to repair self-inflicted damage is marvellous; but her methods are very crude and attended with much suffering and great danger, immediate and remote. I have, however, in mind at this moment two particularly creditable examples of nature's surgery.

In the first one the gall-passages were shortened to just the length of the two large stones, which completely filled them. One occupied the gall-bladder, the other the pancreatic portion of the common duct; the duodenum was not only adherent to the gall-bladder, but served in place of its anterior wall, which had been destroyed; the stone in the gall-bladder, therefore, rested on the wall of the duodenum, which was pasted, so to speak, over the great hole in the front wall of the bladder. There was nothing that could be called cystic duct; the choleductus was almost completely covered by the duodenum; the hepatic duct was much distended, admitting easily one finger. All signs of inflammation, except its results, had disappeared. The simplest conditions had been produced, and those most favorable to the expulsion of the stones in some subsequent attack; gall-bladder and common duct were reduced to a short, wide, nearly straight tube, which bore a striking resemblance to an atheromatous aorta. The stone in the common duct was behind the duodenum and buried in its wall.

The second patient had his first colic twenty-one years before admission to the hospital. He was never jaundiced. In the third attack, which began one month prior to operation, his temperature reached 106°. A physician aspirated pus from the distended gall-bladder about twenty-four days after the onset of the third attack, or three or four days before we operated. The gall-bladder was opened in two acts. The fluid in the gall-bladder was almost clear and not bile-stained. Diagnosis: Stone in the cystic duct. Cover-slips showed few bacilli. Cultures yielded bacillus coli communis, pure. Patient applied for readmission in eighteen months because he had noticed a hard body just beneath the skin in the mouth of the sinus. By simply dilating the sinus I removed four large, very dark green, almost perfectly cylindrical stones, which were piled up upon each other in this sinus, forming a column 10 centimetres high. Nature would herself have extruded these stones which she had brought to the surface without causing the patient any discomfort.

Equally marvellous are the processes by which nature destroys all traces of her surgical handiwork. I have operated upon two cases in which perforation of the gall-passages and intestinal walls, and the expulsion of the stone, had undoubtedly occurred, but was unable in one of them to find any evidence of the perforation other than a few light and easily separable adhesions. Again, in a case of appendicitis, followed by gangrene of the greater part of the cecum and a wide preternatural anus, there were, within a year, only a few very light adhesions about a pinhole opening in the colon to tell the story. These facts are enough to make the ordinary operations for fixation of the spleen, liver, uterus, etc., seem ridiculous. Adhesions about an artficial opening fortunately never disappear. If innocent fistulæ could be established, with the organs to be suspended or fixed, the problem might in a way be solved.

I wish to ask your attention to-night to a few of the unusual facts observed by us in our operations upon the bile passages, particularly the common bile-duct. Almost every one of our common duct cases has presented us with a new fact or two which can hardly fail to interest the general practitioner, as well as those who concern themselves with the surgery of the bile passages. To be as brief as possible, for the time is short, I will summarize at the outset some of the more noteworthy incidents observed by us in this department of surgery.

I. Dilatation of the first part of the duodenum caused by constricting adhesions; as the result, perhaps, of the dilatation, an ulcer ("distention ulcer" — Kocher) on the confines of the pylorus; the ulcer gave rise to a dissecting submucous abscess (chronic), rich in organisms because not reached by the most painstaking sterilization of the stomach. This abscess was punctured during the operation and a fatal peritonitis resulted (terminal infection), although, literally, only a drop or two escaped, and these were carefully wiped away.

II. Primary carcinoma of the duodenal papilla and diverticulum Vateri.

First operation. — Excision of portions of the duodenum (nearly its entire circumference), pancreas, common bile duct and pancreatic duct in order to give the little growth, no larger than a pea, a wide berth; circular suture of the duodenum and transplantation of the stumps of the common duct and the pancreatic duct (Wirsung's) into the line of this suture.

Second operation. — Cholecyst-cystico-enterostomy by the writer's method[2] for intestinal lateral anastomosis.

III. Dynamic dilatation of the first portion of the duodenum and of the pyloric portion of the stomach, corresponding accurately to the limits of a sharply-circumscribed peritonitis; gall-stones in the gall-bladder; hydrops vesicæ. Case full of interest for diagnostician. Beautiful instance of circumscribed dynamic dilatation caused by local inflammation; no adhesions.

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[1] Read at a meeting of the Surgical Section of the Suffolk District Medical Society, May 3, 1899.

[2] Bulletin of the Johns Hopkins Hospital, No. 10. 1891.

IV. Conditions suggesting hepaticocholecystostenterostomy (hepaticocholecystostcholecystenterostomy) as a possible operation; common and cystic ducts reduced to fibrous cords; dilated hepatic duct and gall-bladder. Remarkable toxic (?) renal colic resembling closely intestinal colic, associated with anuria; colic and anuria entirely relieved by salt infusion.

V. Choledochotomy performed twice. The gall-bladder, which was shrivelled at the first operation when two stones were probably in the common duct, was large and distended at the second operation when only one stone occupied the common duct (the ampulla). Hematemesis after the second operation.

VI. The densest adhesions that I have ever encountered in these operations, and probably the most difficult of my operations upon the bile passages. A small abscess in the midst of the adhesions; muscular coat of the duodenum converted into fibrous tissue; the exposed submucosa resembled gall-bladder so closely that the duodenum was aspirated and opened.

VII. Case illustrating the rapidity with which adhesions after perforation and extrusion of stone can be absorbed. Renal pains resembling intestinal colic (third observation of the kind within eighteen months). Tachycardia, believed to be due to toxemia of some kind (possibly benign embolism), suddenly disappeared during counting of pulse and while preparations were being made for subcutaneous infusion.

VIII. Discharge of pus and blood by mouth and rectum during severe gall-stone attack. Two years later, adhesions so extensive and so dense that the common duct was reached by a retroperitoneal route, over the right kidney. A stone in the ampulla had just ulcerated through the wall of the common duct and through its duodenal coverings.

CASE I. *Duodenal stenosis from gall-stones; dilatation of the stomach and of the pyloric end of the duodenum; duodenal ulcer giving rise to a dissecting abscess.* — J. S. age thirty-six, admitted February 5, 1899. Never had typhoid fever. Had malarial fever ten years ago with shaking chills. Never suffered from stomach trouble until present illness. Ever since he was eight years old has had sick headaches, lasting three to four hours, once a month; these would be relieved by emptying his stomach. Has never been jaundiced nor had clay-colored stools. Present illness began very gradually. Three years ago he noticed that his stomach would swell after eating and hardly regain its normal size before the next meal. Had more or less pain in the epigastrium, which was most marked about one hour after eating. No nausea or vomiting at first; bowels regular. About the first of last October the pain became worse, and his sick headaches were more numerous and more severe. His vomiting now began. The vomiting was accompanied by colic, so severe as to double him up. Patient was obliged to stop work for two weeks. He then resumed work until Christmas, since which time he has been unable to work. Patient now vomits much more frequently. The vomiting is preceded by heartburn for about three hours and much pain in the epigastrium. Patient feels greatly relieved after the vomiting. For two weeks after Christmas he had eructations of gas; none since then. Bowels usually constipated; sometimes did not move for three weeks. He still suffers much from headache. His appetite is good, but he is afraid to eat. In October, 1898, patient weighed one hundred and forty-five pounds; he now weighs one hundred and twenty-three pounds, and is very weak. Neither stools nor vomitus have ever been blood stained. Urine normal. Stools clay-colored. Patient not jaundiced.

On palpation of the abdomen no distinct tumor can be felt, but one detects an increased resistance just to the right of the umbilicus. The stomach's longest diameter is 31 cm.; its shortest diameter, 21 cm. The lowest limit of the stomach (tympanitic) is 3½ cm. below the umbilicus. Spleen not palpable. Heart and lungs normal. Glands nowhere enlarged. Pulse slow, feeble, 60 beats to the minute.

January 24th. Test breakfast (Ewald). Two hundred and sixty c. c. removed one hour later; green color; acid. Total acidity, 5.9 c. c.; 0.1 normal NaOH. Free hydrochloric acid; no lactic acid. No sarcinæ nor Opper-Boas bacilli.

February 4th. Test breakfast. Sixty c. c. removed. Total acidity, 20. No hydrochloric acid; no lactic acid. A few Opper-Boas bacilli (?).

February 5th. Stomach tympanitic. Clapatage readily obtained. Stomach peristalsis quite marked at times. Gurgling felt over small intestines. Stomach washing with sterile salt solution, as preparation for operation, begun. Stomach holds about two litres. Cover-slip preparations show streptococci and staphylococci and numerous bacilli.

February 7th. Stomach washing continued. Cultures taken from the residual material. Cover-slips show only a few streptococci in short chains; number much decreased since February 5th.

February 8th. Only a trace of free hydrochloric acid; no lactic acid. Total acidity, 6.2 c. c., 0.1 NaOH solution. Stomach peristalsis readily seen at times. Patient has been kept on sterile diet ever since his transfer to the surgical side. Has carbolic-acid gargle three times daily. Teeth cleansed three times daily with listerine and brush. Ingesta are boiled water, boiled milk, soft-boiled eggs, albumin. Micro-organisms seem to have entirely disappeared from the stomach, for the Petri plates are now sterile. Patient has shown great irregularity in amount of hydrochloric acid — at one time five per cent., at another zero.

February 9th. *Operation.* — Vertical incision through left rectus. This incision was made with the expectation of a possible gastro-enterostomy. Stomach much dilated. In the region of the gall-bladder is a mass of tissue tangled by dense adhesions. In this mass are gall-bladder and pylorus. The mass feels not unlike a new growth. Search for metastases negative, but a small, hard, dark tumor, the size of a pea, is discovered in the right lobe of the liver, near its edge, evidently an angiosarcoma. Pylorus separated from gall-bladder with the greatest difficulty. The separation had to be effected with the knife. It was impossible at first to determine accurately the relations of gall-bladder, pylorus and duodenum to each other. In the course of the dissection a pinhole opening was made in what proved to be the duodenum. The surrounding parts had been well protected against such an accident. A drop of fluid escaped, and from these cultures were taken. The little hole was immediately sutured. The gall-bladder was next opened, and not until then could it be determined positively that the pinhole opening was not in the gall-bladder, the contents of duodenum and gall-bladder so closely resembled each other; it was a thick, ropy, mucoid, colorless material. The gall-bladder was finally completely isolated. It was small and misshapen and contained two or three hard mulberry-like gall-stones. The cystic duct contained no stones and seemed to be very short and very fine. It was surrounded by numerous small vessels, two of which were tied. There was no bile in the freely-opened gall-bladder, which was drained in the usual way with a rubber tube, a catgut purse-string suture sealing the bladder hermetically about the tube. Bismuth gauze was packed about the outside of the gall-bladder. The peritoneum was closed with silk; the muscles, fascia and skin with silver. Patient bore the operation very well. At 6 P. M., temperature 101°; respirations quiet and regular; some distention of upper abdomen.

February 10th. Patient has been vomiting. Complains of pains in stomach and tightness across abdomen. Pulse 108 and feeble; respirations 24; temperature 101°. Leucocytes at 12.30 P. M., 26,800; at 1.30 P. M., 34,000; 5.30 P. M., 36,000; 7 P. M., 37,800. At 6 P. M., patient drowsy, quiet; respirations 34; hands cold; pulse barely perceptible. Cover slips show no micro-organisms in the blood. Five hundred c. c. salt solution infused under each breast. At 10 P. M., 1,000 c. c. salt solution infused under breasts. Pulse improved, 140 to minute; low tension but regular rhythm. Respirations 36; expirations accompanied by short groans. Occasional hiccough; no vomiting; no nausea; no pain.

February 11th, 2.15 A. M. Patient died quietly.

Autopsy. — General peritonitis. Organisms, streptococcus pure. In the walls of the first portion of the duodenum, very near the pylorus, was an accumulation of thin muco-purulent fluid. This fluid was held in bounds by a soft wall of granulations; it was evidently an old abscess between mucosa and submucosa, which communicated with the lumen of the duodenum by a fine opening. A minute ulcer had perhaps been the starting point.

The first portion of the duodenum was distended, and the stomach was dilated; the distention was due to the constriction produced by the adhesions for which the gall-stones were responsible: as a consequence, perhaps, of the distention and the resulting venous stasis, a minute duodenal ulcer; and from the ulcer, the abscess, which was probably responsible for the fatal streptococcus peritonitis.

Of special interest in this case is, (1) the fact that carcinoma had been suspected. The duodenal stenosis, the dilatation of the stomach, the presence of Opper-Boas bacilli (?) justified the suspicion; (2) the success which attended Dr. Cushing's efforts to sterilize the stomach; the micro-organisms had apparently entirely disappeared from the stomach on the day preceding the operation, for the Petri plates, which from day to day showed fewer colonies, for that day were sterile; (3) the dissecting intermural abscess, starting probably from an ulcer which may have been due to thrombosis of a small artery, or to distention of the first part of the duodenum, or to vascular disturbances of some kind, infectious or mechanical. Although thrombosis of a small intestinal artery does not lead to infarction it may cause hemorrhages into the lumen of the intestine and slight intramural extravasations.[3]

Kocher[4] has demonstrated that in consequence of distention of the gut by retention of its contents and the resulting venous stasis very considerable changes take place in the wall of the intestine. He writes as follows: "Arnd has proved that in strangulated hernias when the circulation is greatly interfered with micro-organisms make their way into the mucous membrane and can pass through the intestinal wall (diapadesis of the micro-organisms). On the other hand, Cassin[5] and Charrin[6] have shown how very important the normal epithelium of the intestine is as a protection to the intestinal wall against micro-organisms as well as ferments. The absence of this protection against ferments and bacteria leads to intoxication and infection. Finally, Reichel[7] has demonstrated that the considerable accumulation of fluid above the site of the obstruction is due in part to a hypersecretion of the mucous glands. Under the influence of the intestinal contents which, increased in amount and stagnating, are the more rapidly decomposing (the ofttimes considerable phenoluria and indicanuria is proof of the increased decomposition), the epithelium in the first place becomes destroyed because its nutrition is interfered with under the influence of the venous stasis. There result circumscribed necroses and hence ulcerations of mucous membrane, particularly in places where the venous stasis led to ecchymosis, and, finally, perforation of the serosa and peritonitis may occur. For the origin of these ulcers which, many times observed, have not been properly estimated in their relations to ileus, various explanations have been given. The most substantial explanation is the one which attributes them to the pressure of hard scybala, and it is not to be doubted that hardened fecal matter, just as foreign bodies, gall-stones, for example, can have pressure ulcers as a consequence. But the ulcers which we have pictured are certainly not dependent upon hard intestinal contents and the decubitus which they may mechanically bring about. They occur in jejunum and ileum as well as in colon by the filling up of these intestines with fluid or gas. The only factor which constantly accompanies these ulcers is over-distention of the intestine. Inasmuch as one can experimentally bring about a significant impairment of the circulation of the intestinal wall and its consequences by over-stretching of the gut, we hold to the proposition that the ulcers are best called distention ulcers (*Dehnungsgeschwüre*). Long ago I called attention to the fact that ulcers of just this kind could also in cases of strangulated hernia lead to a fatal peritonitis after constriction had been relieved, or a gangrenous loop of intestine had been resected and an entirely trustworthy suture had been made."

Case II. *Primary carcinoma of the duodenal papilla and the diverticulum of Vater, successfully removed by operation; cystico-enterostomy three months after the first operation.*— Mrs. M. L., age sixty. Until August, 1897, patient was well. Her first symptom was itching of the skin, which came on suddenly and soon became severe. Patient says jaundice did not appear for nearly a month after the onset of the itching. Before the appearance of jaundice diarrhea set in, and there were six or seven stools a day which were watery and clay-colored. Patient has had no chills, no fever and no sweating. With the onset of the jaundice she noticed shortness of breath and an occasional swelling of the feet and legs. About the first of January, 1898, she had persistent bleeding of the gums for three days, following the extraction of a tooth. At times the hemorrhage was profuse. Two months ago a tumor was noticed in the region of the gall-bladder. This tumor does not seem to the patient to have increased in size and has never been tender. In March, 1897, she had several attacks of severe pain in the epigastrium. These attacks were not accompanied by vomiting or fever or sweating. A few weeks later she had a second but milder attack. The stools were light in color for two or three days at the beginning of these attacks, but patient recalls no change in the color of the urine or the skin at that time. The daughter of the patient states that these attacks of pain were very severe, and that her mother seemed very ill.

Examination February 14, 1898. Patient somewhat emaciated, but fairly well-nourished. Mucous membranes pale. Heart and lungs normal. There is a distinct prominence on the right side, the highest point of which is midway between the umbilicus and anterior superior spine. The prominence descends markedly with inspiration. On palpation the prominent area proves to be pear-shaped and distinctly fluctuating. The border of the liver, which reaches almost to the crest of the ileum, can be distinctly felt.

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[3] Archiv für pathol. Anat. u. Physiol., 1875.

[4] Kocher: Mittheilungen aus den Grenzgebieten der Medizin und Chirurgie, Bd. iv, Heft 2, 1898.

[5] Mittheilungen aus Kliniken der Schweiz, Basel, 1898.

[6] Fonctions protectrices de la muquese intestinale, Soc. de biologie, December, 1895.

[7] Zur Pathologie der Ileus, Deutsche Zeitschrift für Chirugie.

February 14, 1898. *Operation.*—Vertical incision through rectus muscle. A greatly dilated but not especially dense gall-bladder presented; no adhesions. Liver projects five cm. below costal margin. Four silk sutures[8] placed in fundus of gall-bladder with French needles. Small aspirator introduced in centre, between sutures; syringeful of clear fluid withdrawn. Gall-bladder opened; contents evacuated. In the latter part of the fluid were many fine, sand-like, hard, greenish, round particles, suggesting miniature gall-stones. Common and cystic ducts were dilated to the size of one's thumb. A longitudinal opening two cm. long was made in the common duct. The same colorless fluid escaped from this incision. Duct explored with probe and finger. What seems to be a small, very hard stone is felt at site of ampulla. To determine the nature of this body, an incision was made through the wall of the duodenum. No glandular metastases discoverable. The stone-like body proved to be, as was feared, a carcinoma of the papilla.

Excision of the cancerous growth. — To give the growth a wide margin, a large piece of duodenum was excised, a wedge-shaped piece with the apex at the mesenteric border of the intestine. About three-quarters of an inch of the common duct and a shorter piece of the pancreatic duct were excised. The wound in the duodenum was closed in the usual way with mattress sutures. This was practically an end-to-end anastomosis of the duodenum. The common duct and pancreatic duct were transplanted into the duodenum along the line of suture. A linear incision into the common duct, which had been made for diagnostic purposes, was closed over a hammer. The gall-bladder was sutured to the peritoneum.

Abdominal wound closed in the usual way: the peritoneum with a running silk suture, the muscles and fascia with buried silver sutures, and the skin with a continuous subcuticular silver suture. Bismuth gauze inserted to protect the suture of the intestine and common duct. Drainage tube surrounded by bismuth gauze, and gutta-percha tissue inserted into gall-bladder and held in place by a purse-string suture of catgut. Wound dressed with silver foil. Gutta-percha tissue placed between the raw edges of the skin and the gauze packing. Operation lasted three hours and ten minutes. Patient experienced apparently no shock from the operation.

February 16, 1898, first dressing. Profuse discharge of bile in dressing. Icterus less intense. Considerable abdominal distention, but no signs of peritonitis.

February 18, 1898. Distention has almost completely disappeared. Tongue clean. Patient comfortable.

February 22d. Discharge of bile into dressings still profuse. Stools becoming distinctly bile stained. Icterus rapidly disappearing. Urine dark and gives bile reaction. Patient hungry.

February 27th. Skin sutures, tube from gall-bladder and the last of the bismuth gauze removed. Evacuations not bile stained.

March 4th. Discharge of bile diminishing. Opening in gall-bladder has been plugged for several days with bismuth gauze in order to determine, if possible, whether or not the transplanted common duct is patulous. Yesterday patient vomited 125 c. c. of brownish fluid.

March 5th. Patient has had a large stool, quite dark in color. There is very little leakage from the opening into the gall-bladder, which is almost closed.

March 13th. Icterus continues undiminished. Stools are still slightly bile stained. Abdomen somewhat distended. Active peristalsis is occasionally visible through the abdominal walls. Liver still readily palpable, the right lobe extending almost to the iliac crest. Appetite good; tongue clean; no indigestion.

March 27th. Attempts to plug the opening of the gall-bladder, with the hope of forcing bile into the intestine, not satisfactory, although there is some bile in the stools. Patient's general health good. Icterus has disappeared. Patient able to walk about, and is gaining strength rapidly.

April 5th. The conjunctivæ are clear, but there remains still some evidence of pile pigment in the skin. No bile whatever in the stools, although the opening into the gall-bladder is almost closed: it is barely large enough to admit a probe. Patient is beginning to have indigestion. The appetite as a rule, however, is good. The liver is diminished in size.

April 8th. Patient complains of colic and abdominal pain. Considerable abdominal distention. Dressings bile stained. No nausea; tongue is clear.

April 12th. Some nausea and vomiting. No distention of abdomen. Dressings very slightly bile stained.

April 15th. Abdomen soft and relaxed, but borborygmi heard by attendant and appreciated by patient. Little or no bile in dressings.

May 5th. *Second operation: cholecystduodenostomy or cysticoduodenostomy.* — Suture of fundus of gall-bladder. Complete closure of abdominal wound except for drainage. Incision alongside of old cicatrix, circumscribing fistula. Gall-bladder quite small, no larger than one's thumb. Liver about normal in size. Many fine adhesions about gall-bladder, which were easily separated. Gall-bladder and ducts thoroughly exposed. The line of suture of common duct at previous operation was readily distinguishable by black-silk stitches, but it was almost impossible to find any trace of the duodenal suture. Common duct incised at site of old suture. Probe cannot be passed into the duodenum, but there is no positive evidence of recurrence of the cancer. Unsuccessful attempts have been made before the operation to pass a probe from the gall-bladder through the common duct into the duodenum. Opening into the common duct closed in the usual way with mattress sutures over hammer. An anastomosis between duodenum and the gall-bladder or cystic duct was effected without much difficulty, although the parts to be sutured were very deeply situated and inaccessible. The duodenum was probably a little less freely movable than at the previous operation, and the gall-bladder was so much reduced in size that we were compelled to pass some of the stitches into what seemed to be the cystic duct: in any event, the neck of the gall-bladder had to be used for the anastomosis. A *bougie à boule*, passed into the gall-bladder, was used as a darning ball to assist in the placing of the sutures. All the sutures were passed, and none of them tied, before the openings into the neck of the gall-bladder and duodenum were made, the method employed being that which I described many years ago for intestinal anastomosis. The opening in the fundus of the gall-bladder was closed with mattress sutures which inverted the wall. The abdominal wound was completely closed except for protective wicks which were passed through this line of suture into the gall-bladder. What seemed to be an enlarged gland was palpated during the operation but not removed. It was forgotten. Patient suffered little or no shock from the operation.

May 6th, 4.30 P. M. Patient very restless, tossing about and occasionally vomiting. 10 P. M., has had occasional quiet naps and is more comfortable.

May 7th. Complains of pain in back and abdomen.

May 8th. Is very comfortable. Yellowish stool, containing small particles of brown fecal matter.

May 9th. Large greenish-yellow stool.

May 11th. Patient has had daily since last note one or two greenish-yellow soft stools. She still complains of slight pain in abdomen.

May 12th. A large, quite well-formed greenish-brown stool. Considerable flatus expelled. Complains of gas in stomach. Slight nausea. 4 P. M., vomited thick, mucus-like, chocolate-colored fluid containing milky curd.

May 29th. Patient complains of itching in the hands, where the pruritus has always been the greatest when icterus was pronounced. No jaundice, however, is apparent.

June 8th. Slight chill followed by rise of temperature to 39°. Trace of bile in the urine. Nausea, but no vomiting. No pain and scarcely any tenderness of the abdomen. Wound almost completely closed.

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[8] We find this a very useful procedure. The gall-bladder is manipulated by these sutures and handling is thus avoided. These sutures are of additional service when it seems advisable to distend, subsequently, the gall-bladder with fluid, and when it is desirable to close it temporarily during the operation.

June 9th. Temperature normal. Patient feels well.

In the early autumn of 1898 this patient returned to the hospital too ill for operative interference, and in a few weeks died. During the summer I had corresponded with her urging her to return to the hospital, for it was clear from her letters that the fistulous communication between the gall-bladder and the duodenum was not working well. At the autopsy it was found that the carcinoma had recurred in the head of the pancreas and duodenum, closing the common duct and interfering with the perfect action of the chlolecystenterostomy, or cystico-enterostomy. The anastomosis, as we had supposed, had been made between the dilated cystic duct and the duodenum; the fistula was still perfectly pervious and should have acted nicely except for the interference, a little twisting or bending, created by the new growth.

The result in this case is not encouraging, for it was my opinion at the time of the operation that the case could not have been more favorable. But I did in this case what I never do if it can be avoided, namely, cut well down to or perhaps a little way into the new growth for the sake of diagnosis. It is furthermore a rule in my clinic that pieces shall not be excised from new growths *in vivo* for diagnostic purposes; we must learn to make the diagnosis in other ways. In the case of a very small breast tumor it is occasionally impossible to make the diagnosis. In such cases I have approached the tumor with the knife very cautiously, and could tell before I reached the growth, from the findings in the outlying tissues, whether we had a malignant tumor to deal with or not. I shall have more to say about this at another time, but I feel that one cannot condemn too strongly the universal practice of exploring tumors with the knife or with the harpoon or even with the needle. After investigating the subject superficially, I have the impression that amputations for the truly malignant sarcomata have comparatively seldom been successful when preliminary exploration has been done. If I find it necessary to make an incision into a sarcoma of an extremity, I first apply an Esmarch bandage, and if the tumor is a malignant growth, the bandage is not removed until the growth has been removed. So, too, in cysts of the breast; we should not aspirate them because (1) they may be malignant and the aspiration harmful, and (2) if malignant, the aspiration does not tell us so. This is the first and I believe the only instance in which an operation for primary carcinoma of the duodenal papilla has been done; moreover, I know of no other case of excision of a portion of the common duct. Heidenhain[9] (Worms) demonstrated last year at the twenty-seventh Congress of German Surgeons, a shrivelled gall-bladder which he had removed for a small cancer of its wall; after extracting six calculi from the bladder, a little button-like prominence on its wall caught his eye. The microscopical examination showed little or no thickening of the mucous membrane, but unmistakable alveoli in the muscular wall of the gall-bladder; furthermore, some of the lymph vessels were plugged with cancer cells. In three months the patient succumbed to liver cancer which had attained great dimensions, although at the time of the operation the liver was apparently perfectly normal. At the same session Hollander[10] (Berlin) reported an extirpation of the gall-bladder and cystic duct and resection of a portion of the liver for cancer, which *per continuitatem* involved the liver. The result he could not give, for he had performed the operation only three weeks before. There can be little doubt as to the ultimate result of Hollander's operation, although, having operated only three weeks previous to his report, he could not give it.

Case III. *Dynamic or paralytic dilatation of first portion of duodenum and of pyloric end of stomach. Gall-stones in gall-bladder and cystic duct. Obstruction of cystic duct and hydrops vesicæ.* — Mrs. S. G. M., age forty-six. Admitted January 31, 1899. Never had typhoid fever. Headaches at intervals all her life, sometimes very severe and lasting several days; especially severe during menstruation. Digestion has been bad for sixteen years. After meals a heavy feeling in epigastrium followed by fulness and a feeling of suffocation. Belching of gas common; occasionally would regurgitate a mouthful or two of food. Rarely vomited; never any blood in vomitus. Bowels generally constipated. Micturition frequent, occasionally twenty times a day; generally several times at night. Menses regular. Average weight, one hundred and fifteen pounds. Has lost in weight of late. Present illness, patient states, began December 31, 1898, although she was much run down before that time. This attack came on gradually. Some distention of stomach, and in the afternoon some pain which became severe at night. The pain was in the epigastrium — a colicky pain — which, as she expressed it, "went through the abdomen." Morphia exhibited.

Next morning patient felt easier. Morphia continued for next two days. Pain relieved but not entirely subdued. Stools after this were very black, like tar. Physician found something in the stools which he thought might possibly be a gall-stone. Since this attack patient has never been well; constantly in bed. Great deal of soreness through abdomen, and at times attacks of colic. These attacks usually came on in the evening without known cause. Much belching of gas. Bowels regular. Stools not clay-colored. No jaundice. Patient's daughter states that for many years her mother has had attacks of abdominal pain, for which the doctor gave morphia hypodermically. There were intervals of several months between the attacks.

Examination. — On palpation no tenderness except beneath the right costal margin. Here there is to be felt a rounded mass resembling a distended gall-bladder. Right rectus muscle very hard. The mass which is to be felt at the outer edge of this muscle seems lobulated.

January 29th. Attack of what patient calls "colic." She is nervous and distressed and complains of abdominal pain. Swallows air and belches it up again.

January 31st. Transferred to surgical side. On inspection a distended piece of gut between umbilicus and tumor, extending obliquely from the left and above to the right and below, probably six or eight inches in length. Peristalsis is to be observed at intervals; it is not very active, but at times is quite constant. A tumor suggesting gall-bladder projects from the lower border of the liver. It seems to be nodular, or rather has a nodule on it at its upper part. This tumor descends with respiration, and is somewhat tender The edge of the liver can be felt on each side of the tumor.

February 3d. *Operation.* — Vertical incision through right rectus muscle. No fluid in abdomen. Gall bladder distended to size shown in diagram on blackboard. Its walls were greatly thickened and white. The first portion of the duodenum and the pyloric end of the stomach were distinctly distended. Corresponding accurately to the distended portion of the bowel was a slight peritonitis, scarcely more than an injection of the serosa, and an exudate, only enough to cause very fresh adhesions between the duodenum and the gall-bladder. We should hardly call them adhesions; the duodenum seemed rather to be lightly glued to the gall-bladder just as it might be an hour or two after an operation.

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[9] Heidenhain: Verhandl. d. deutsch. Ges. f. Chirugie, 1898, p. 126.

[10] Hollander: Loc. cit., p. 131.

I was extremely interested to find that the vascular injection seemed to correspond accurately to the limits of the dilatation (almost ileus at times). The adhesions, if we choose to call them such, were so fresh that they were separated by very slight pressure of the finger. The general abdomen being walled off by gauze packing, the gall-bladder was opened. Its contents were colorless and in consistency like the white of an egg. Cover-slips were negative. First, one large gall-stone was found, with a facet at each end. Then a second stone was detected with a probe in the cystic duct, but it could not be dislodged. Cysticotomy was performed and the stone removed in fragments. The previous attempts to dislodge it had evidently broken up the stone. Incision in cystic duct closed by mattress sutures. Gall-bladdder treated in the usual way; namely, hermetically sealed about a rubber tube and protected by bismuth gauze from the general peritoneal cavity. Abdominal wound closed in the usual way.

At first no bile escaped by the tube, but on the 10th of February bile was abundant in the dressings.

March 2d. Wound has completely healed. Patient discharged cured.

Various diagnoses had been made in this case: (a) distended gall-bladder with adhesions; (b) cancer of bile-ducts and liver involving secondarily the colon; (c) carcinoma of the colon involving secondarily the gall-bladder and gall-ducts. The distended intestine I watched with much interest several times. It seemed to me too small for colon; and no mass could be felt in the distal side of the distended gut to explain the distention. Peritonitis is undoubtedly the most common cause of paralytic ileus, and I have repeatedly observed in appendicitis that dilatation of the cecum and of the ileum may be caused by a very slight, perhaps merely a toxic peritonitis, but I have never before noticed such a sharp line of demarcation between the inflamed and non-inflamed portion of the intestine. The dilatation corresponded accurately to the vascular injection. This was the more striking because two portions of intestine so very different were involved. That the comparatively thin wall of the duodenum should be more or less affected by inflammation of its serosa is to be expected, but that such a thick-walled gut as the pylorus and the pyloric end of the stomach should be paralyzed by such a very slight inflammation of the serosa was surprising.

CASE IV. *Conditions suggesting hepaticocholecystostcholecystenterostomy as a possible operation. Renal colic simulating intestinal colic; relieved by salt infusion.* — Mr. ———, age sixty, had been suffering from gall-stones for several years, but not until he became persistently icteric and very ill was the first operation performed. The operator, a distinguished surgeon, found most difficult conditions confronting him. The entire common duct was impervious and reduced to a fibrous cord; the cystic duct, greatly narrowed, was probably impervious; the gall-bladder and hepatic ducts were dilated. The surgeon, very skilfully, I am told, attempted to construct a new common duct over a tube or catheter from the tissues which he had at his disposal. Just what these available tissues were I do not quite understand. For about five weeks, and until this tube was removed and the surgeon went away on his vacation, the patient was fairly comfortable and seemed to be gaining a little. Then he developed high daily fever and occasional chills, and became jaundiced again. I saw the patient in consultation with Dr. Gardner, of Providence, about one week, I believe, after the fever and the symptoms of obstruction had manifested themselves. The gall-bladder could not be felt. There was perhaps a little more muscle resistance on the right side over the region of the bile-ducts than on the left side, also perhaps the suggestion, rather indefinite, of a little induration, such as might be caused by fresh adhesions. It occurred to me that in case the gall-bladder and hepatic ducts were still both dilated one might establish a fistulous communication between them, making an hepaticocholecystostomy and then, immediately, a cholecystenterostomy; in all an hepaticocholecystostenterostomy. In any event, we thought that an operation for the relief of the symptoms was imperative. Accordingly a vertical incision through the inner margin of the right rectus muscle was made, avoiding the fistulous tract which remained after the withdrawal of the tube over which the new common duct had been constructed. I worked for two hours trying to identify and to separate the parts concerned in this operation. The gall-bladder, the ducts and the duodenum were glued tightly together and to the under surface of the liver. The gall-bladder which was finally extricated from the tangle was very small, contracted and empty; the cystic duct was a fibrous cord. When bile was at last reached the patient was in such bad condition that the operation had to be discontinued. The parts in the neighborhood of the common and hepatic ducts were so firmly matted together that neither the latter nor the remains of the former had been demonstrated when it was necessary to bring the operation to a close.

The patient rallied satisfactorily from the immediate effects of the operation; but twelve or fourteen hours thereafter complained of very severe abdominal pain, which, as he indicated the location of it, seemed to be in the region of the colon and passing from right to left. The pain, though perhaps constant, became excessive during the paroxysms. It was never referred by the patient to his back or sides, nor did it radiate to the testicles or groin or crest of ilium. The abdomen was perfectly flat, and peristalsis could not be observed. Nevertheless, large high enemata of hot water were given, but without appreciable relief. The urine was scanty and very dark and contained albumin and casts and a few blood cells. Dr. Gardner promptly attributed the pains to the kindey, and related a somewhat similar case. Believing his interpretation of the pains to be correct and recognizing the fact that something must be done quickly for the relief of the kidneys, I transfused about 750 c. c. under the breasts. The pulse, which was alarmingly rapid before the transfusion, dropped 40 beats within thirty minutes, and 20 beats within five minutes, and the colicky abdominal pains disappeared. Within twenty-four hours the infusion was repeated with similar results. The kidneys responded promptly to both infusions.

I report this case because (1) it suggested a new operation, hepaticocholecystostcholecystenterostomy, or hepaticocholecystostenterostomy; (2) it was the first of three cases of colic which I have seen associated with scanty high-colored urine; and (3) it was, so far as I know, the first instance of subcutaneous infusion of salt solution for the relief of toxic renal colic. Soon after this Dr. Young, by salt infusions, undoubtedly saved the life of one of my patients whom I had operated upon for appendicitis, and who was suffering from perhaps the most furiously rapid toxemia that I have ever known of. This case has been reported by Dr. Young in the *Maryland Medical Journal.* The resemblance to intestinal colic is so great that it would undoubtedly be mistaken for it even by experienced practitioners of medicine. This was a valuable experience for me, for since then I have twice recognized as renal colic this pain, which had been regarded as intestinal colic and treated with high injections. Our list of desperate cases of toxemia treated advantageously with infusions of salt solution is assuming large proportions.

CASE V. *Choledochotomy performed twice within four and one-half months. The gall-bladder, very small and contrac-*

ted at the first operation when two stones were in the common duct, was large and distended when only one stone occupied the common duct (the ampulla). — Mrs. M. P. R., age fifty-eight, admitted May 3, 1897. October, 1892, patient began to have moderately severe attacks of pain in the region of the gall-bladder. The attacks would come on suddenly and last several hours unless relieved by anodynes. The pain, milder at first, would gradually increase until it became very severe; it commenced in the epigastrium and extended into the right hypochrondrium. During the winter of 1892–1893 the attacks occurred every two or three days. Occasionally there would be an interval of two or three weeks. During the remainder of 1893 and all of 1894 the attacks persisted at longer or shorter intervals, the pain always beginning in the epigastrium and radiating to the back. Sometimes during a severe attack there would be slight vomiting. Morphia generally gave relief. Patient says that the attacks were not accompanied by tenderness nor tumefaction. In the attacks observed by me there was always tenderness and, after the first operation, distention of the gall-bladder. In the spring of 1895 she went to Hot Springs, Va., where she remained several months. After this she had no pain for fifteen months' but did not seem to gain or to improve in health. In September, 1896, in Italy, the pain returned. The attacks recurred with great regularity for seven or eight weeks. Most of them were attended by nausea and some by vomiting. She became jaundiced for the first time in December, 1896, and has remained more or less icteric until admission. Just after the paroxysms the icterus is deeper. For the past five months she has remained in bed most of the time. She vomits frequently, is seldom free from nausea. The bowels have not been markedly constipated; appetite is poor; headaches occasional but not severe. Prior to this illness, however, she suffered very much from headaches. At no time has she had chills or sweating.

Examination. — Patient is quite deeply jaundiced; her color is a dark slate-yellow; tongue heavily coated; body much emaciated; expression rather dull, eyes lustreless. Heart not enlarged; no adventitious sounds. Lungs negative. Urine dark, almost coffee-colored, trace of albumin, much bile-stained sediment. A few bile-stained casts and epithelial cells. Red blood corpuscles, 4,220,000; white, 6,000.

May 4, 1897. *First operation.* — Longitudinal incision through right rectus muscle; resection of cartilages of eighth, ninth and tenth ribs because the common bile-duct was very inaccessible. Choledochotomy; removal of one small mulberry calculus. Exploration of duct fails to detect a second stone. Suture of duct wound. Gall-bladder atrophied and not opened. Bismuth gauze packing to suture in duct. Peritoneum sutured with fine silk, muscles and fascia with silver wire, and skin with a buried suture of catgut. Little or no shock from the operation.

On opening the abdomen the tissues were bile stained. There was no fluid in the peritoneal cavity. The outer surface of the contracted gall-bladder was covered with new connective tissue in which were little masses of fat. The omentum was loosely adherent to the gall-bladder. The cystic and common ducts were easily isolated after division of three of the costal cartilages. No stones could be felt in the bladder or cystic duct. The stone found in the common duct could be moved quite freely up and down in this duct, but could not be forced into the cystic duct, the common duct, about 1½ cm. in diameter, being uniformly dilated. Bile flowed from it when opened. It was carefully explored with the fingers but not with an instrument. The gall-bladder was not opened. Two mattress sutures closed the opening in the duct, one preliminary suture being taken before the duct was opened. The sutures were passed without difficulty, the wall of the duct being about three mm. in thickness. No leakage occurred after the stitches were tied. The calculus, without facets, was spherical, about 1.6 cm. in diameter, and had a granular surface like a mulberry calculus.

May 15th. Patient has recovered uneventfully from the operation. She is easily nauseated, however, and has very little desire for food. The stools have about the color of dark coffee and the skin has become lightened perceptibly. She complains, however, of an aching pain in the back, not relieved by posture.

May 24th. Patient has no inclination to eat. Takes almost nothing by mouth. Nutritive enemata, which have been administered uninterruptedly since the operation, are still well borne. About every two days there is a quite definite attack of pain in the umbilical region and back, ushered in by nausea. Vomiting usually follows in a few hours and the distress is relieved.

May 29th. Condition little changed. Patient is fairly comfortable except for the attacks. Takes a little more food. Stools semi-solid and still quite dark. Urine has trace of bile.

June 13th. No bile in urine. Vomitus contains considerable hydrochloric acid.

June 26th. Appetite and digestion have steadily improved. Nausea less constant, often absent. Patient constipated, requires enemata, stools normal as to color.

July 4th. Much more comfortable. Nausea has disappeared; color greatly improved, but the attacks of pain continue although they are less frequent.

July 13th. Slight chill at 5.30 P. M., accompanied by pain in the back and head. Temperature reached 103° at 7.30 P. M.; fell to 99.2° at 5 A. M. Examination of blood for malaria, negative.

July 25th. Patient has lost one and one-half pounds in weight in the past week. The right lobe of the liver is enlarging. The spleen is palpable. Patient is having short attacks of fever accompanied by slight chills; headache and yawning usually associated with them. The attacks of pain continue; they are still controlled by very small doses of morphia, one-sixtieth to one-fortieth of a grain. She sits up out of bed most of the time.

July 27th. The pain in the back has of late been accompanied by a slight rise of temperature, 99.2° to 105.5°. The urine contains no bile. The stools consist of light and dark portions sharply separated. Patient is gaining quite rapidly in weight.

August 5th. Stools clay-colored. Temperature reached 102° last night during an attack of pain. Skin is becoming icteric; urine contains bile; slight pruritus. Patient's weight has increased five pounds in ten days. From August 8th to 12th no bile in urine.

Sept. 12th. The attacks of pain and the pyrexia continue. Patient is decidedly icteric after some of the more severe attacks. What we have feared ever since the operation we are now quite certain of, namely, that there is still a stone in the common duct, probably in Vater's diverticulum. The liver is considerably enlarged but the gall-bladder has not been definitely made out.

September 13th. *Second operation.* — Vertical incision near linea alba. Adhesions from previous operation separated without much difficulty. Liver much enlarged, gall-bladder and common duct distended with bile. The wall of the common duct was much thicker, the wall of the gall-bladder, on the other hand, was probably thinner than at the previous operation. A small stone was palpated deep down behind the duodenum, presumably in the ampulla. The line of the old suture in the ductus choledochus could not be very definitely made out, but a short yellowish-white streak, evidently cicatricial tissue, corresponded, I thought, to the site of the original slit in the duct. A fine suture was placed in the common duct to serve as a handle for the subsequent manipulations. The duct was opened, and about 60 c.c. of clear greenish bile escaped. A gauze plug was inserted into the proximal end of the slit to prevent the stone from slipping into the hepatic duct. Interrupted sutures were then taken over a hammer of the proper size. The dislodgment of the stone was somewhat difficult. It was a little smaller than the first stone, but otherwise repeated the original exactly. The gall-bladder was opened, sewed to the peritoneum, and drained in the usual way; a rubber tube surrounded first by gauze and then by protective being held in place by a purse-string suture of catgut. Wicks of bismuth gauze protected the line of suture in the common duct. The operation was attended with very little shock and the patient reacted very well.

Sept. 20th. There has been more or less nausea ever since the operation. Patient objects decidedly to stomach washing. Bile is draining actively from the tube. There has been little or no nausea to-day, but patient is weak and much depressed. The removal of a piece of gauze from the gall-bladder gives patient the first sensation of "heart-burn," which she has had since the operation; it lasted several hours.

Sept. 22d. Patient is thin and emaciated and alarmingly weak; speaking is a great exertion to her. Temperature subnormal. There are no wound complications, nor any signs of peritoneal irritation or obstruction. Alimentation is almost exclusively rectal; 6 P. M., vomited 1,000 c. c. of fluid thick with "coffee grounds." Patient very restless. Examination of vomitus: No bile; blood corpuscles abundant; altered blood pigment; free hydrochloric acid; no lactic acid.

Sept. 23d. Patient has vomited several times during the day; in all about 2,000 cm. of the same dark coffee ground vomitus. The pulse is very feeble.

Sept. 24th, 8 A. M. Pulse barely susceptible early this morning; rallied a little after exhibition of salt solution per rectum. Still vomiting large amounts of same fluid, though nothing is being administered by mouth. 12 M. Patient is very low but still conscious. Infusions of salt solution were given under breast and in buttocks. 5.15 P. M., one drachm of one-per-cent. solution cocaine given by mouth. 5.30 P. M., patient vomited 360 c. c. of same dark fluid. Cocaine given again. No vomiting since second dose.

Sept. 25th, 1 A. M. Patient responds a little to the saline infusions. She is moaning and restless. Her nose and extremities are cold. She sleeps in short naps, with her eyes open and eyeballs rolled up. Complains greatly of thirst. Champagne and albumin retained and apparently relished.

Sept. 28th. Infusion again soon after midnight. Involuntary stools and small amount of dark vomitus. Is somewhat flighty at times. Pulse is thready, irregular, and cannot be accurately counted. She is sighing and seems almost moribund. Too weak to recognize surroundings or members of the family. About noon to-day I saw the patient for the first time since the third day after operation, having returned to town as rapidly as possible in response to a telegram sent forty-eight hours ago. Dr. Cushing, house surgeon, who had attended her constantly, day and night, met me at the door of the hospital with the words "no hope, she is dying." We went to her room; she was cold and almost unconscious; her eyes were open, the eyeballs rolled up; the lower jaw had dropped. She had had more involuntary movements and could retain no nourishment. Her pulse was little better than a flutter and could not be counted. In less than forty-five minutes I returned to the patient and found her pulse 120, and fairly regular in force and rhythm. I doubted my senses when I counted it. She was moreover not so cold, her eyes were not staring, and her lower jaw was raised. A miracle! From that moment her convalescence was uninterrupted. She slept an hour, and on waking looked better than she had in two or three days. For twenty-four hours she was so weak that she could barely move her arms. She remembers nothing that transpired on the 23d, 24th and 25th of September.

In eight weeks, on November 22d, this patient left the hospital, not only able to walk but to take a long journey on the railroad. In one period of seven days she gained nine pounds. Her liver was rapidly diminishing in size.

In April, 1898, I had the pleasure of seeing this patient again. Her color was natural, her digestion excellent, her weight above normal and her strength steadily increasing. Her liver did not extend below the costal margin.

I have seen many cases regarded as hopeless recover, but never a being so near death as this have I known to escape it. I have speculated much as to the possible explanation of the very sudden change in her favor, but it would lead us beyond the limits of this paper to discuss the matter. In toxemias I have noted almost instantaneous drops in the pulse rate. Twice within a month I have observed a fall of 30 beats to the minute follow in less than thirty seconds the opening of an abscess. The abscesses were large and very acute; one was a suppurating laparotomy wound and the other was a circumscribed abscess in the peritoneal cavity. The very instant that the abscesses were opened the change in the pulse was noted. A few months ago we were preparing to infuse with salt solution a patient upon whom I had operated for gall-stones and whose condition gave me not a little anxiety. His respirations were about 40 per minute and his pulse between 130 and 140. The physical signs indicated not very clearly some consolidation of the lower lobe of the right lung. While the instruments were being sterilized for the infusion, and while Dr. Cushing, the house surgeon, was counting the pulse, it fell to less than 100.

Was the hemorrhage from the stomach in the case of Mrs. R. (Case V) due simply to the prolonged vomiting; or to interference with the circulation of the portal vein (liver cirrhosis, pressure of packing); or to thrombosis of a small arterial branch; or to a retrograde embolism (Recklinghausen,[11] von Eiselsberg[12]) or malposition of the pylorus or duodenum? It could hardly have been due to sepsis. As long ago as 1867, Billroth[13] remarked that in septic cases we might have duodenal ulcers and fatal hemorrhages therefrom. He showed in his experiments upon animals that sepsis might cause intestinal hemorrhage, although, in his experience, it seldom did so in man; if, however, there existed an obstruction to the circulation, such as liver cirrhosis causes, little hemorrhages in the stomach plus the action of the gastric juices might lead to the formation of ulcers. The nausea began almost immediately after the operation. Whatever was the cause of this almost continuous nausea and frequent vomiting was also, at least, the remote cause of the hemorrhage. Von Eiselsberg has just reported seven cases of stomach and duodenal hemorrhage following operations upon the abdomen. Hematemesis occurred in six of his cases, and never later than the second, usually on the first day. The hemorrhages were demonstrated in three cases post mortem.

In my case the vomiting of "coffee grounds" was not observed until the tenth day. This patient was so carefully watched that I am quite sure that if hematemesis had occurred earlier it would not have been overlooked. In seeking for a common cause for the stomach and duodenal hemorrhages, von Eiselsberg excludes vomiting because in two cases there was no vomiting, and in two, hematemesis occurred only a single time; he also excludes sepsis because in four of the cases there was no infection, and reaches the conclusion that "If the behavior of the wound is to be regarded as the cause of the hematemesis, then it must be assumed that in the cases which healed by first intention a retrograde embolism from a non-infected thrombus had taken place."

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[11] Die Storungen des Blutkreislaufes.

[12] Die Verhandlungen der deutschen Gesellschaft für Chirurgie, 1899.

[13] Ueber Duodenalgeschwüre bei Septicaemie. Wiener med. Wochenschr., 1867.

I wish that there were time to discuss this feature of the case more fully, but I must pass on to the consideration of another fact which this remarkable case developed. There were at the first operation almost certainly two stones in the common duct, one in the ampulla, the other more or less freely movable in the duct, although it fitted it quite snugly; but the gall-bladder was small and contracted and not opened, and the liver was little if at all enlarged; the color of the skin was a light slate-yellow or ash-yellow — not the darker bronze-yellow of complete obstruction. At the second operation, however, when there was only one stone in the common duct, the gall-bladder was distended with bile and quite large, and the liver was greatly enlarged, its right lobe almost reaching the crest of the ilium. The patient's color and symptoms indicated that the stone in the ampulla did not at all times obstruct the duct completely. It sounds almost paradoxical to say that the removal of a stone should increase the obstruction, or that the one stone plugged the duct more completely than the two. I believe that a stone in the diverticulum, particularly a small one, is more likely to block the duct effectually and to lead to distention of the gall-bladder than a stone, however large it may be, elsewhere in the common duct. A stone in the middle of the duct may at first occlude it completely, but the duct-wall soon becomes infiltrated and thickened, it loses its elasticity, and, when distended with bile, stretches. The stone no longer plugs the duct tightly and bile trickles by into the intestine even when a second stone occupies the diverticulum, but when the proximal stone is removed, the bile instead of trickling up to the distal stone is probably jetted against it with sufficient force to hold it as a ball-valve. In 1885 I operated upon a patient whose common duct contained a stone larger than the largest pecan nut; at times one half of this stone projected into the duodenum, the other half occupied the duct: a flange had been cut on the calculus by the cicatricial ring, which engaged it and prevented it from slipping into the intestine; and yet this patient was so very slightly jaundiced that a stone in the common duct had not been suspected.

Case VI. Miss M. H., age thirty. Transferred to surgical from medical side January 27, 1896. Indigestion for eight years. For past four years the "gastric distress" has been very great. Patient describes a "gnawing sensation" in the epigastrium. Colicky pains radiated throughout thorax, but were at times very severe "in the back." Two years ago she had typhoid fever. For the past six months she has had frequent definite sharp gall-stone attacks with nausea, and four times with vomiting. Never blood in the vomitus. No chills, fever or jaundice. Patient is a confirmed invalid. She suffers from headache and occasionally from vertigo.

Examination. — Abdomen flat. On deep inspiration spheroidal tumor is to be seen just below the costal margin on the right side. This tumor can also be felt. It moves with the enlarged liver, ascending and descending with the respirations. Last September patient first began to have attacks of pain in right hypogastrium, and accompanied by nausea and sometimes by vomiting. Spleen not palpable. The severe pain suffered by patient could be relieved by drawing up the knees. This pain radiated to the right shoulder-blade.

January 28, 1896. *Operation.* — Cholecystostomy. Vertical incision through the right rectus muscle. Elongated right lobe of liver. Very dense fibrous adhesions between the gall-bladder and duodenum. These adhesions were divided with great difficulty, and finally what appeared to be gall-bladder presented. It was aspirated, and a thick, greenish fluid withdrawn. It was consequently opened with some confidence, but proved to be duodenum. It was sutured again at once, the suturing being very difficult because the muscular coat had been separated from the submucous coat during the dissection of the adhesions. The muscular coat, owing to the chronic inflammation which had existed for so many years, had become sufficiently fibrous to resemble cicatricial tissue, and consequently was unintentionally stripped from the submucosa. When the submucosa presented, it did so in the form of a little knob-like bladder, this coat resembling almost precisely the wall of the gall-bladder. The gall-bladder was finally found, deeply imbedded in adhesions, about four cm. to the right of its usual position and far under the enlarged liver. It was opened and one large oval stone, two cm. by one cm., removed. In the course of the operation a small abscess was discovered in the midst of the adhesions. Patient's recovery was considerably retarded by digestive disturbances, which finally disappeared completely.

April 1899. Patient says that she is in robust health and wishes to become a masseuse.

Case VII is unavoidably omitted.

Case VIII. *Discharge of pus and blood by mouth and rectum during severe gall stone attack. Two years later adhesions so extensive and so dense that the common duct was reached by a retroperitoneal route, over the right kidney.* — Mrs. M., age thirty-five. Admitted March 1895. No typhoid fever. First attack of gall-stones, six years ago, began with sharp attack of pain in the right side of the abdomen. Two years ago miscarriage at seventh month; was ill in bed thereafter four months. While in bed patient had great pain in region of gall-bladder, with high fever, for ten weeks; was continually blistered over liver. Eight weeks after the abortion she felt suddenly something "give way"; this giving way was followed by great relief, and by horribly offensive discharge of pus and blood from the rectum and mouth. These discharges were irritating, gave her a very sore throat and mouth. She spat blood and matter for two or three weeks, and the stools during this time were very offensive. She has had pain and tenderness constantly with occasional severe attacks since this time; has been jaundiced more or less ever since, but more markedly so since last July. On admission, body jaundiced and greatly emaciated; tenderness over the entire abdomen, especially in the region of the gall-bladder. Liver, in deep inspirations, extends two fingers' breadth below costal margin, and has a fairly sharp edge. Spleen palpable; stools acholic.

March 19th, 1895. *Operation.*—Liver small, barely reaches costal margin; its high position complicated the operation. Colon adherent to liver by rather loose bands; gall-bladder exposed when these were divided. It was high up under the liver and no larger than the tip of the little finger; it was not opened. Adhesions were so dense over the common duct that the peritoneum was opened over the right kidney, and the common duct approached from behind under the peritoneum. A stone being felt, the common duct was the more readily exposed; the stone was extracted through a hole made by ulceration. This hole proved to be at the junction of the duct and the duodenum, and was shut off from the peritoneal cavity by very delicate adhesions. The intestinal part of the opening was closed completely, the duct part as well as possible. The sutures were passed with great difficulty. The opening in the duct could not be completely closed, the tissues being necrotic, and bile escaped through it even after the sutures were drawn tight. Probing of the duct was carefully done. No other stones found.

October, 1895. Six months after operation, patient is very well. She weighs one hundred pounds.

April, 1899. Examined in my private office: patient still enjoys perfect health; she now weighs one hundred and ninety pounds. Patient states that she has recently given birth to a healthy child.

I report the case of this woman (Case VIII) because (1) she was so very ill when operated upon: (2) it is one of the two cases in which intestinal perforation had undoubtedly occurred prior to operation; (3) the common duct was approached in a new way, namely, from behind the peritoneum; (4) the stone, in the ampulla, had ulcerated through the walls of the ductus choledochus and the duodenum, and would perhaps soon have been extruded; (5) the increase in the weight of the patient seemed phenomenal; it was almost doubled in the year following the operation.

What the result to the patient would have been if this stone had ulcerated its way out of the common duct is quite certain, and yet I have several times found stones imbedded in adhesions outside of the bile passages: they were usually close to the gall-bladder. Once I discovered a stone in the wall of a thick-walled gall-bladder; it was completely buried and was causing no disturbance, and was discovered in the process of sewing in the drainage tube. This is, I believe, the only case in which I have not divided all of the adhesions encountered. If no contraindication exists, such as necessity for abbreviating the operation, we should separate the adhesions if possible. The chance of meeting fistulous openings between bile passages and the intestine I regard as an indication for thorough exploration rather than a contraindication to it. Not infrequently adhesions alone are responsible for the symptoms which persist after the calculi have been removed by the surgeon or have escaped in other ways.

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UNLOOKED-FOR DYSTOCIA IN CERTAIN MULTIPARÆ.[1]

BY E. S. BOLAND, M.D., SOUTH BOSTON.

If this title is ambiguous or misleading I shall try to explain it as I go along. It is difficult to develop any new fact or plausible theory in obstetrics when the entire field has been gone over so often and so thoroughly by competent writers of large and varied experience. But some accepted facts will bear repeating, and mooted points, if not settled, are better understood by new discussions. I have found difficulties with which I was not familiar, and I shall try to state these difficulties and earnestly solicit your discussion and help.

We are occasionally called to attend in labor women who have already been delivered of from one to several children, and as they got through with these deliveries without special delay or trouble we unhesitatingly accept their cases. Their first deliveries may or may not have been slow, and some later ones may have been precipitate. It is not unusual to be told in such a case that the child had been born before the doctor reached the bedside. Under such circumstances we have no misgivings about the patient's condition nor prospects, and may not even examine or estimate her pelvic measurements; hence, when later we encounter delays and difficulties in delivery, we can certainly regard them as "unlooked for." Why should delivery have been rapid and easy formerly and so impossible now? When called to such a case, if we examine digitally we find the cervix high up and but little dilated, even after some hours of ineffectual pains. We watch the patient awhile, encourage her to be patient, and possibly give an opiate. The pains, though frequent enough and severe, seem to be singularly inefficient, for the head does not engage, much less descend. If after some time we examine again we shall probably find some relaxation of the vagina and a fairly dilated (or easily dilatable) os, and the head or possibly the breech within reach, quite movable, if the waters are still intact, and no attempt at engagement in the inlet or of the necessary moulding essential thereto.

After many hours or even days so spent we find the patient getting anxious and urgent for relief, and with the pulse and temperature rising, and other evidences of exhaustion, we begin to realize that for safety of the mother, as well as for the baby, something more than masterly inactivity is demanded of us.

When we look for the determining cause in these cases it is very hard to find. The history of former easy and possibly prompt deliveries excludes any great departure from normal in the parturient passages, bulky neoplasms of course, being excluded. It has been suggested that possibly there is persistent at term the globose shape of the gravid uterus which is normal up to six or seven months, instead of the ovoid shape that ought to obtain in the last weeks of pregnancy. If this assumption is correct it would explain the arm or trunk presentations occasionally seen. In most of the cases that I recall the usual polar presentations of head or breech could be easily felt. Sometimes the head seemed to rest on a veritable shelf formed by the os pubes (as a bracket) and the expanded anterior uterine wall.

The most plausible theory of the origin of these cases is based on the fact that in multiparæ we so often find relaxed abdomens and presumably some fault of direction of the uterine ovoid, or failure in contraction in the uterine walls in consequence. We have no doubt this same condition may occur in primiparæ, but in any given case when it is suspected, we must first exclude the more common causes of dystocia, under sacral promontory prominence, narrow superior strait or uterine inertia. If these are excluded we probably have to deal with the same condition primarily which we are assuming is a vicious development in the multipara from some weakening or aberration of originally competent normal forces. However, the occurrence of the difficulty is certainly rare in primiparæ as compared to multiparæ. In two of my cases the development of large mural fibroma seemed to be the cause of breech presentations but neither gave special trouble to the artificial delivery of living children.

Frequency. — In this condition it is not possible to give exact figures as to frequency, clinical varieties as to positions of head or breech, or infant mortality. Excluding doubtful cases occurring in first labors, I doubt if they occur more than once in 150 or 200 cases. This is merely an estimate from my own experience.

Treatment. — Aside from operative interference the treatment is unsatisfactory, and can best be expressed in negatives. Don't hurry; don't give ergot; don't rupture the waters (twins being excluded); don't keep the patient in bed at first, or out of it later; don't fail to empty the bowels and bladder at intervals; don't insist on the patient making expulsive efforts unless the abdomen is manipulated so as to direct the uterine ovoid, especially if the abdomen is pendulous. Usually after many hours have been wasted in these attempts, little will have been secured except possibly greater ease of dilating the soft parts, but your patient will be in poor state to meet the exigencies of artificial delivery. But meet it she must, for we are now face to face with the old problem of high forceps or turning.

That penitent darkey at the camp meeting who, when the fervid though illiterate preacher described the only two roads open to him as one leading to sure destruction and the other to perdition, said, "I'll take to de woods," about expresses our feelings in our choice of these two means of relief, only we have no woods for our escape. Sometimes the choice is made for us by circumstances. If breech presents, no one would attempt cephalic version. So, too, if arm or trunk presents, the feet had better be brought down. Turning will not be found difficult in these cases. If the head presents, the tentative use of the forceps promises most if used judiciously and coincidently with suprapubic help from an assistant to depress and steady the head after first attempting, *per vaginam*, to secure favorable position of the head in relation to the inlet and complete flexion also. The chances for success will be better for thorough preliminary manual dilatation of the vagina and cervix. That complete surgical anesthesia is best none will deny, and much as I believe in chloroform for ordinary obstetric use, in these cases ether is the better choice. While podalic version is relatively easy in these cases, extraction is very difficult; the arms are pretty sure to get extended over the head, and the danger of delays in the after-coming head, always a source of danger, is especially so here. With high forceps even the most careful attempt to secure the head in favorable relations to the blades of the instruments and the diameter of the pelvis, and to drag it through unmoulded by its normal influences is even more severe on the mother than are the manipulations coincident to turning and extraction. Either in turning or high forceps the difficulties and dangers are greater if the patients are fat, and they often are.

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[1] Read before the Section for Obstetrics and Diseases of Women of the Suffolk District Medical Society, October 25, 1899.

The infant mortality is high in either case — too high in these days of trained abdominal surgeons and so commonly accessible hospitals. I believe that a Cæsarean section would be much safer for the child, and practically as much so for the mother, than delivery artificially, *via naturalis.* I have one or two cases in mind in whom, should pregnancy again occur, I shall urge laparotomy. Of course it will be declined, but my conscience will be relieved. The fact that temporizing sometimes leads to unexpected and very happy terminations in these cases, or cases so nearly like these in all clinical respects as to be indistinguishable, makes us all — doctors and parturients alike — willing to wait and take risks.

The risk to the mother in these cases is not great or we could better urge the seemingly greater operation of suprapubic delivery. If we direct our turning or forceps delivery with the aseptic care the gynecologists have taught us, and care for her afterwards with antiseptic precautions, it is surprising what an amount of mechanical abuse the parturient canal will tolerate.

RÉSUMÉ.

(1) Certain multiparæ, after one or more easy deliveries, lose the power of natural parturition.

(2) This is due to failure of the expelling forces in the uterus and abdominal walls.

(3) Artificial delivery is imperative in such cases as promptly as a diagnosis is established.

(4) Infant mortality is high in artificial delivery by the natural passages.

(5) The human female is very tolerant of aseptic mechanical genital injuries.

(6) Is suprapubic delivery justifiable in these cases when a positive diagnosis is established?

A CASE OF EXTRAPERITONEAL NEPHRO-URETERECTOMY FOR TUBERCULAR DISEASE.[1]

BY EDGAR GARCEAU, M.D., BOSTON,
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The reason of reporting this case in full is that a considerable length of time has elapsed since the operation was performed. As our knowledge of similar cases is rather meagre, owing to the obscurity in which the diagnosis of them is usually veiled, any contribution to the subject would seem to be of value. The present case had been treated for months as a simple chronic cystitis of an unknown etiology, which had resisted treatment, and there had been no positive sign or symptom sufficiently marked to attract attention to the suppurating kidney which was the principal seat of disease. It also illustrates very well what all observers engaged in this work must have early recognized, namely, that chronic cystitis in a young unmarried girl, who has not been exposed to the usual sources of vesical infection — the catheter, purulent genital affections, etc. — is usually tubercular.

The patient was twenty-two years old, unmarried, and earned her living by dressmaking. She was first seen in September, 1897. Her family history was negative. She herself had always been well. Examination of the various organs of the body, except the urinary organs, was negative. There had never been any purulent affection of the genitalia, such as endometritis or vaginitis, nor had she ever been catheterized in sickness. She dates her trouble from an event which happened in 1896, a year before she came under observation. At that time she lifted a heavy girl, and immediately felt a severe pain in the left lumbar region. Since that time she had been ill. The principal source of discomfort was frequent painful micturition, on some days the frequency reaching so many as forty times in the twelve working hours, and six times at night. The pain during micturition was felt in the urethra, and was at times very severe. There was at all times a constant desire to urinate, which is in these cases the cause of the nervous and physical breakdown rather than the disease itself. Emaciation was rapid, and there was a gradual loss of strength; yet she was able to work at her dressmaking up to within two weeks of the time of her operation. Pain in neither lumbar region since the time of the strain had been complained of, but there was some backache, confined to the spinal region; there was also some pain at times in the left iliac region, and later lying on the left side was painful. She gave no history of previous renal colic.

On October 6, 1897, a cystoscopic examination was made, with the following result: Whole bladder red and inflamed to an intense degree; flakes of fibrin here and there; wall of bladder corrugated, owing to bands of white cicatricial tissue, especially prominent about the site of the left ureteral orifice. The right ureteral orifice was found with difficulty, and a catheter inserted into the ureter. The left one could not be positively identified, although a catheter entered an opening in the vesical membrane for about two centimetres, at which point further entrance was impossible, owing to a stricture of the ureter. Small ulcerated areas were numerous throughout the bladder, but no miliary tubercles were seen. The left kidney was palpated, and was found to be twice as large as the right one; palpation was somewhat painful, and there was some rigidity of the abdominal muscles over it. The left ureter was examined through the vagina, and was greatly enlarged, being at least three or four times as large as the right one. The uterus and appendages were normal. The urine drawn from the right kidney showed 2.4 per cent. of urea and some albumin, due to effused blood; the sediment consisted of blood corpuscles, a few granular casts, numerous small round epithelia. and a few leucocytes and pelvic epithelia. The bladder urine, drawn while the catheter was in the right ureter, showed 1.84 per cent. of urea, and the sediment consisted of pus chiefly, with a few casts and various epithelia, mostly fatty. No tubercle bacilli were found after careful search, but at a previous examination which was made two weeks before one doubtful tubercle bacillus was found after two hours' search.

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[1] Read before the Section for Obstetrics and Diseases of Women of the Suffolk District Medical Society, October 25, 1899.

A diagnosis of pyelonephritis was made from the following data: Absence of previous purulent affections of the genitalia in a young unmarried girl; elimination of catheter infection; cystitis of long duration; resistance to ordinary treatment persisted in; gradual deterioration of health; localized renal signs of inflammation; enlargement of the kidney.

Nephrectomy was performed on October 25, 1897. The ureter was not removed at this sitting, as it was hoped that it would atrophy. The mistake was made of burying the tuberculous ureteral stump in the tissues and closing the incision over it. Subsequent events showed that it would have been better to have secured drainage or to have removed the ureter with the kidney, but at this time a positive diagnosis of tuberculosis had not been made, so that there was some excuse for burying it. It is a question, however, if she could have supported the combined operation in her weakened state; and the ease with which the ureter was found at the second operation was an argument in favor of performing the operation in similar cases in two sittings. Realizing the possibility of having to remove the ureter at the first operation, the incision was made with that end in view. It started just below the twelfth rib at the border of the quadratus lumborum muscle, and continued onward to the tip of the rib; from there it descended to a point just behind the anterior superior spine of the ilium. This incision gives ample room. There were no adhesions except a few along the course of the descending colon. The peritoneum was opened once, but the rent was closed and no harm resulted.

On November 14th there was a sharp rise in temperature, and some pain was complained of in the left lumbar region. The wound had healed by first intention. Thinking that the stricture of the ureter might have become temporarily occluded, and that there was an accumulation of pus above it, an attempt was made to pass a catheter into it, without success. It was noted that the bladder was already looking much healthier. On November 24th, there was no doubt about the nature of the trouble, for local signs of deep-seated inflammation at the point where the ureteral stump was situated made it evident that further operative interference was imperative. Ether was therefore given again, three weeks after the nephrectomy, and an incision made parallel with the quadratus lumborum muscle, starting at the twelfth rib above and continuing down to the iliac crest; thence it was prolonged to the anterior superior spine. The peritoneum was pushed aside and was not opened at all during the whole course of the operation. The ureter was met with just below a mass of inflammatory tissue, in which the upper end of it was imbedded. In the centre of the mass was a small abscess, which was drained with a tube and gauze. The ureter was freed from it, and the dissection of its whole length from the kidney site to the bladder begun. When the dissection reached the lower angle of the incision, in order not to expose too large a surface, the upper three inches of the incision were closed, leaving the drains protruding from the upper angle. The incision was now prolonged below, from the point at which it left off, to within about three inches of the middle of the symphysis pubis, following Poupart's ligament, and an inch above it. The dissection was now carried on to the point at which the ureter goes below the uterine artery. Now the forefinger of the left hand was passed into the vagina (the patient having been put into Trendelenburg's posture), and along it as a guide was pushed a long pair of straight scissors, closed. The tip was plainly seen from the abdominal side pressing against the vaginal wall, which was fully exposed. An incision with the knife was next made, large enough to allow the scissors to enter. It was dilated by expanding the scissors on withdrawing them. The ureter was then pulled through the opening with a pair of long forceps, and the opening through the vagina closed with catgut from the abdominal side. Some brisk bleeding was easily controlled. The long incision through the abdominal walls was now closed in three layers, and the patient was then put into the dorsal position. A considerable hemorrhage, venous in character, was found going on in the vagina, and undoubtedly from the vaginal vein. Mention is made of this because it should be guarded against, as it may occur, as it did in this case, without the knowledge of the operator, owing to the position of the patient. Some trouble was experienced in securing the divided vessel. The ureter was then dissected out of its bed in the vaginal wall down to its termination in the bladder, where it was finally tied off with catgut; the stump was cauterized with the Paquelin cautery, and a few stitches taken in the vaginal wound. The patient stood the operation fairly well. There was considerable shock.

The ureter was enlarged throughout its course to five times the normal size. It was hard and gristly, and white in appearance. Sections of it showed characteristic tubercular changes.

The kidney was examined by Dr. P. Leary, who reports as follows: "On stripping the capsule several prominent, rough, yellowish areas appear from one-half to one centimetre in diameter, made up of many opaque pin-head swellings. On section into the kidney, much reddish-yellow, purulent material escaped from the dilated pelvis. The papillæ are everywhere blunted, in places are excavated deeply, so that but one-half a centimetre of kidney substance is left beneath the kidney capsule. The pelvic mucous membrane is everywhere ulcerated, grayish red, and ragged. The mucous membrane of the ureter is granular, injected, and shows small, ragged ulcerations. The ureter is dilated and its wall considerably thickened. The cavities in the kidney substance, which are continuous with the pelvis, are lined with a ragged, yellow, opaque membrane, surrounded by a grayish gelatinous zone. From the excavated areas the process has in places extended through to the surface in the form of long, narrow, yellow lines, corresponding to the distribution of the collecting tubules, and causing the lesions described on the surface. The glomeruli show as injected pin-point areas. The lower and anterior portions of the kidneys show the oldest process, the kidney substance being completely honeycombed. In the walls of one of the cavities is a mass of calcified material. Smears show abundant pus, lymphoid and epithelial cells in the contents of the pelvis. Tubercle bacillus not found. Cultures show a few colonies of staphylococcus albus on the surface and a few streptococci in the water of condensation. Frozen sections from the injected cortical portion show typical tubercles containing giant cells, and many areas of caseation. Diagnosis, chronic tuberculosis of the kidney."

The patient did badly after the operation. The incision opened in three places and pus was discharged for a long time. Finally improvement began, slowly at first, and in three months she left the hospital, convalescent, but with a large fistula with three outlets. At the end of nine months only it closed. No hernia resulted, which was remarkable in view of the extent of the incision and the long-continued suppuration. Improvement on the part of the bladder followed immediately after the operation; urination was reduced to six times by day and twice by night, and the act was painless. In July, 1898, she was urinating only three times each day and once at night. She was then looking well and had gained in weight. In September of the same year she was again at work at dressmaking and considered herself well. Urination was necessary only three times each day and once at night. There was no pain. The vaginal wound had long since healed.

In May, 1899, there was a return of the vesical symptoms. Urination had become somewhat painful and she had to empty the bladder seven times by day and once at night. A cystoscopic examination without ether showed that the bladder was considerably inflamed; so it was deemed best to give ether again and cauterize it with the solid nitrate of silver stick. This was done on May 31st of the present year. At that time the condition of the bladder was as follows: The mouth of the right ureter and the ureteral eminence were very red and granular looking and the resemblance to fine granulation tissue was marked. The left ureteral eminence and orifice were quite smooth and relatively paler than the surrounding tissue. The whole bladder except the extreme fundus was granular looking; bled easily on touching; here and there were scars where healing had evidently taken place.

The method of cauterizing the bladder deserves a word of comment. It was carried to such an extent that when completed the appearance of the whole bladder resembled a diphtheritic membrane. No fear need be felt for the safety of the patient, for the cauterization appears to be confined to the superficial layers of the mucous membrane. The sloughs are thrown off in a few days, and the great improvement which follows is in favor of a further trial of this method of treating these cases. So far as the author knows, this method of treatment carried to such an extent is original with him. In another case of vesical tuberculosis this cauterization was performed with similar gratifying results.[2] While the patient was under ether a catheter was inserted into the right ureter. The urine drawn showed 2.14 per cent. of urea, and the sediment consisted of a few granular casts, some caudate epithelia, a few blood corpuscles and leucocytes; no tubercle bacilli were found. A guinea-pig was inoculated with a small portion of the sediment and urine. It was killed in six weeks. The autopsy showed healthy organs. It seems fair to conclude, therefore, that the right kidney has remained healthy after nearly two years. It is perhaps worth mentioning that the kidney has become movable, possibly on account of its increased weight, due to compensatory hypertrophy, but it gives rise to no symptoms. A pig inoculated with urine drawn from the bladder died in thirty-seven days of unknown cause, as on autopsy nothing was found which accounted for its death. This brings up the question of the value of the guinea-pig test. It may be said that the value of it has not yet been determined. A positive reaction is conclusive, but a negative reaction is not to be considered as proof that tuberculosis does not exist, as the present case illustrates. More might be said on the subject, but it does not come within the scope of this paper.

The patient was last seen on October 25, 1899. She was then in excellent health. The appetite was good; she slept well; was strong enough to do an exhausting day's work, and in all ways considered herself well. Urination was painless; was required only three times a day and not at all at night. The cystoscope showed the following: Whole bladder of normal grayish-white color; here and there, scars of white tissue; a small area of redness, one centimetre in diameter, over the site of the left ureteral eminence, not painful to the touch of the cystoscope; vesical neck and urethra, normal. The catheterized urine showed an acid reaction, a percentage of urea amounting to 2.27 per cent., and the sediment, slight in amount, consisted of a few bladder epithelia, a few blood corpuscles, numerous spores, a few small granular casts and a few pus cells.

The peculiar feature of the case was the fact that only once was a tubercle bacillus, and that a doubtful one, found in the urine, although search was made for the germs on many occasions with persistency. The failure to obtain a reaction with the guinea-pig test, while satisfactory in the case of the right ureter, was not so in the case of the bladder, yet, that the diagnosis was correct was most positively proven from the examination of the organs removed. This experience goes to show how imperfect our methods of diagnosis are as yet. The patient cannot be considered cured so long as pus is found in the urine associated with lesions in the bladder, however slight. Yet the outlook in this case, as in all similar cases, must be considered hopeful. The possibility of a cure must be entertained, and that cure will follow in many cases, if watched, seems a wish about to be realized in the near future, in view of the recent progress in this branch of surgery. It is certain that much good can be done in relieving symptoms and in prolonging life with a degree of comfort hitherto not possible by the employment of other means, and that being so, the surgical interference suggested in this is not only indicated but desirable.

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[2] E. Garceau: Cases of Cystitis in Women. Boston Medical and Surgical Journal, July 29 and August 5, 1897.

NOTES ON THE CLOSURE, BY BURIED SUTURES, OF RENTS WHICH IMPLICATE THE ANAL SPHINCTER.

BY A. T. CABOT, M.D., BOSTON,
Surgeon to the Massachusetts General Hospital.

IN the *Johns Hopkins Bulletin*, Volume X, page 1, Dr. Howard A. Kelly describes his method of operating upon a ruptured perineum. The point which he especially calls attention to is the importance of dissecting out and suturing the sphincter ani muscle with buried stitches of catgut.

In looking up the literature of the subject, he finds the importance of thus securing the ends of the sphincter ani has been already alluded to by medical writers, and certainly it is a maneuvre which has been carried out for a considerable time by many operators, who have not written out their experience with it.

For a number of years the writer has used buried catgut stitches for bringing together the divided ends of the sphincter ani muscle, and has applied this method not only to those cases in which the muscle has been ruptured in childbirth, but also to those in which it has been divided in an operation upon deep anal fistulæ. The results have been extremely good. As his technique has differed in some important details from that of Dr. Kelly, the following description of it is given:

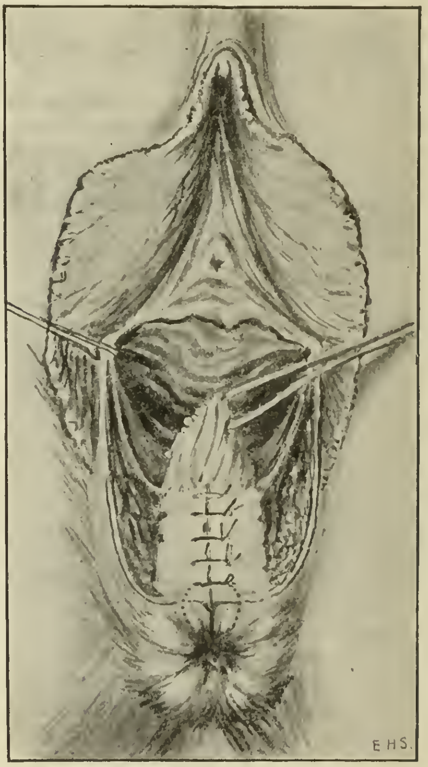
After the perineum, completely ruptured through the sphincter, has been thoroughly refreshed and the ends of the sphincter have been laid bare, a row of catgut stitches is taken, bringing together the rectal wall, particular care being taken to bring the stitches out exactly on the edge of the mucous membrane, not entering the calibre of the bowel. The outermost of these stitches include the divided ends of the sphincter muscle. When this row of stitches is tied, the rectum is entirely closed off from the wound and we have left a surface resembling that of a rupture of the perineum of the second grade, in which the rectum is not involved. A second row of buried catgut sutures is then taken, and with these stitches the ruptured pelvic fascia, the levator ani muscle and the ends of the transverse perineal and sphincter vaginæ muscles are drawn together. In this way a solid perineal body is constructed. Three rows of stitches are often used in accomplishing this.

Finally, the mucous membrane of the vagina and the skin surface are closed in. The "purse-string" stitch of Emmet is not infrequently used in conjunction with this method of suturing, in order to still further draw together and consolidate the perineal body. The result of this method has been the construction of a perineum of greater solidity and depth than has been obtained in the writer's hands by any other method. The buried stitches have in no instance given any trouble and the method is one which must commend itself, I think, to any one giving it a thorough trial.

The treatment of the rectal wall described above is very different from that adopted by Dr. Kelly. He approximates the rectal rent "by fine interrupted silk sutures passed on the rectal side, entering and emerging on the mucosa about one centimetre from the margin of the cut." Stitches thus entering the rectum always have the disadvantage that they become infected from the rectal contents, and silk especially acts as a wick and becomes soaked with the fluids that are in contact with the exposed portion of the threads. By the writer's method, the stitches do not enter the rectum at all, but yet draw the mucous membrane snugly together exactly as the mucous membrane of the bladder is approximated by the operation for vesicovaginal fistula. Results prove that infection from the rectal mucous membrane does not follow this method.

Perhaps the most striking case under the writer's observation was one in which the patient had had for many years a fistular opening on the anterior wall. This was a narrow, but very long fistula, entering the rectum high above the internal sphincter. The fear of incontinence of the bowel had deterred surgeons previously consulted from operating upon this sinus. And, indeed, the discomforts of the fistula had been so slight that this conservatism found ample justification.

For some months before I saw her, a swelling and hard induration had been forming about this fistula, and when she came under my observation, she had an evidently malignant growth occupying almost the whole septum between the vagina and rectum. This was removed with a considerable margin of healthy tissue about it. After this thorough removal, the whole perineum and rectovaginal septum, up to the peritoneal fold, had been removed for a distance of at least four inches. The parts were drawn together with difficulty by buried stitches, uniting first the rectal wall and sphincters, then the pelvic fascia and, finally, the vaginal mucous membrane. So much tissue had been removed that the tension was very great and an unusual number of stitches were required to bear the strain. The union was very satisfactory. The bowels were perfectly under control from the time of the operation.



This sketch shows the deeper layer of stitches in the rectal wall. The dotted line, showing the exact location of the first stitch, gives an idea of the amount of tissue included in these.

At one point, where the tension was greatest, there was a little leakage and for some time there was a small fistulous opening between the rectum and the middle of the wound in the perineum. This gradually closed until it became so small as to cause the patient no annoyance.

The difficulty of approximation in this case made it a severe test of the buried suture in this form of injury, and the success was greater than might have been expected.

Although the writer's experience embraces many cases of the repair of these injuries in this way, the case just reported is the only one in which the union of the deep parts by first intention was not absolute.

The suture material used in these cases has been chromicized catgut. A small size of the gut (No. 1) is selected and when the strain is great, a double strand is used. This is done because the small gut is notably easier to disinfect and is also quicker to absorb.

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X-RAY EXAMINATIONS FOR LIFE INSURANCE COMPANIES.

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

The organs to be considered by life insurance examiners in the physical examination of candidates are chiefly the kidneys, the lungs and the heart. Two of these organs — the lung and the heart — are especially open to inspection by the x-rays, and can be thus examined without removing the clothing. In the lungs, for instance, old foci of tuberculosis give rise to abnormal appearances, which can be seen on the fluorescent screen, and yet which might be overlooked by auscultation and percussion, if not near the surface of these organs. It is important for the insurance company to know if such foci exist, because they are a source of danger. Emphysema of the lungs is best recognised by the x-rays; the effects of old pleuritic adhesions may sometimes be seen by this new method of examination, and thoracic aneurisms may be detected in an early stage.

The size and position of the heart can be determined with greater certainty and exactness by the x-ray than by the older methods. Some companies will now accept as risks persons who have certain heart murmurs, but no company would knowingly accept a man who had an enlarged heart, and if this organ is enlarged as the result, for example, of a valvular lesion, or of arteriosclerosis, renal disease, or a fatty muscle, the x-ray examination not only shows it, but shows its certainty and precision.

During the past three years I have on two occasions called attention to the value of these examinations to insurance companies, and further experience with them has strengthened my belief in this recent addition to our methods of studying the chest. There is, I think, no single method of physical examination of the thorax, when properly carried out, that gives such trustworthy and complete evidence of the normal or abnormal condition of the organs in this part of the body as an examination with the fluorescent screen. From the insurance standpoint it is not so much a question of what the disease is, as whether there is or is not an abnormal condition in the chest.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

Regular meeting Wednesday, May 3, 1899, Dr. J. W. Elliot in the chair.

PATHOLOGICAL SPECIMENS.

Dr. Pease showed a stone weighing 1,020 grains which had formed about a hairpin introduced into the bladder by a girl three years before.

Dr. Mixter: This specimen represents parts of a tumor which I removed from the abdomen about five or six weeks ago. This is the history: A woman of about forty-five whom I saw in consultation with Dr. Canfield for abdominal growth. I saw her first about twenty months ago. At that time she had a large abdominal tumor, which seemed to be fluctuating. The abdomen was not only very much distended, but seemed to be coming through the inguinal ring. The diagnosis was made of ovarian multilocular cyst, a part of which had come through the inguinal ring. The patient was admitted to the hospital, but her courage gave out and she left before operation.

About two months ago she was again admitted and I operated. On opening the abdomen, this mass, which I think almost all of the members of the staff thought to be an enormous multilocular cyst, proved to be a retroperitoneal growth, and although the thing was soft and apparently fluctuating, as most of these multilocular things are, on opening the abdomen it was seen that it was a solid tumor made up of a large number of lobes. I was able to dig out this mass. I show it because I believe it is considered as rather an interesting specimen pathologically. There is one of the masses laid open. These had to be dug out from behind the peritoneum, and there were forty-three pounds, I believe, of this mass. I left behind, I should say, half as much more. This has been of very rapid growth in the last eighteen months and it was impossible to get it all out. What is left will continue to grow. The patient made a rapid recovery, and she is now up and walking about very much relieved from the weight.

The interesting thing in the operation was the extent to which the retroperitoneal space was involved by this tumor. The first mass I dug out extended down toward the left kidney; the next came down under the ribs from above. Its shape is somewhat different now. As it came down it looked exactly like a liver. As I suggested taking that out one of my colleagues said: "Don't take that out; it is the liver." It presented a perfectly sharp edge just like the liver and in the position of the liver. After taking out two or three of these masses I went down into the sac outside of the abdomen, the hernia, and enucleated a large mass there, and finally I took out this mass, which could be felt as one hard mass through the abdominal wall. It was different in character from the rest, and as Dr. Whitney will tell you, of different microscopic structure. These masses were some of them lipomata, some fibromata with edema, and this last one almost pure fibroma, such as we have in the uterus, and probably starting from the uterus. The uterus was not seen. Hardly anything of the abdominal contents was seen, and this mass has been removed on account of its size. The patient beginning to show signs of shock, the op eration was discontinued, and now she is anxious to have the rest removed.

Dr. Homans: I have had four of these cases, two in men and two in women. Three of them were operated upon. One weighed about seventy-five pounds. Another I did not weigh, but it filled a large wash-tub. The lady came to Boston, and, having had one or two of these cases, I was able to make out what I thought was the matter, although it seemed like an ovarian cyst. The only way you can distinguish, I think, is by aspirating and finding that they do not contain any fluid. I operated, and the woman died after the operation. One, a woman, with a smaller tumor than Dr. Mixter's, recovered. Another was a man whom many of the the gentlemen remember many years ago, and we removed fifty pounds. In the afternoon he died, and I found about twenty-five pounds more. The third one, a woman, got well. As far as my experience goes they occur in both sexes. Mine was called by Dr. Whitney myxolipoma. I don't know whether it is the same thing or not.

COMPLETE OBSTRUCTION OF BOTH URETERS WITH CALCULI.

Dr. Harrington: This specimen Dr. Whitney has kindly consented to show. It is the kidneys, the ureters and the bladder from a man whom I operated upon last month with an interesting history. The patient when I saw him had had complete suppression of urine for three days. He had pain in his right side, and there was a tumor to be felt on this side. The history threw light on the condition. Last July, a year ago, he had a similar attack of suppression which lasted five days. He was suddenly relieved, and he began to pass urine. He passed ten quarts the first day. A few days afterwards he passed a stone through the urethra which was as large as the last phalanx of the little finger. This made it probable that a similar condition was occurring. The family were anxious to delay operation if possible. With the previous history, the hope that that stone might pass through led me to submit to a delay of two days more. Thus five days had elapsed with complete suppression of urine. On making a lumbar incision on the right side where there seemed to be pain, and following the ureter down about three inches from the kidney, a large stone was found and removed. That stone was larger than the one previously passed. I then put a catheter into the bladder and washed it out. The pelvis of the kidney was also washed out through the opening in the ureter. The man passed a small amount of urine on the following day — about eight or ten ounces. On the following day a little more. His condition did not improve and he died.

I made a post-mortem. Dr. Whitney examined the specimens and will report upon the condition. It seemed to me before operation that the other kidney must either be destroyed or that there might be only one kidney. Before making the lumbar extraperitoneal incision, I made a median incision and found both kidneys present. I could feel a stone in the right ureter. I did not feel that stone in the left ureter, the stone being very near the bladder.

Dr. Whitney: Here are kidneys and bladder, from the ureter of one of which Dr. Harrington removed the stone. On the left side there is an impacted stone completely occluding the ureter a few centimetres above the bladder. The bladder is contracted, has evidences of slight hemorrhages, but not a very old cystitis. The kidney on the left side is extremely dilated from hydronephrosis but quite small. This I judge to have been the older process. The obstruction had probably existed a long time, during which compensatory hypertrophy of the other kidney had taken place, and later the ureter of this one also became occluded and there are evidences of dilatation in the enlarged pelvis; but there was still a large amount of kidney substance, which was in a state of acute suppurative inflammation, numerous small purulent foci being scattered throughout the cortex. Microscopically there was evidences of old chronic trouble, in the way of some interstitial changes. It would seem probable that the kidney had become infected not from the bladder, but possibly from the ureter, as the suppuration is in a very acute stage.

In connection with Dr. Mixter's case the necessity for operation is apparent from the commencing anemic necrosis. Evidently the blood supply had been cut off; it is very possible the necrotic area might in a short time have become infected. The dense fibrous tumor is quite distinct in its character from the others, which are essentially lipomatous or fibrolipomatous, the amount varying, and there is but very little myxomatous degeneration, which Dr. Homans spoke of in connection with his tumors. As regards the size these tumors can reach, I think the largest on record is shown in this picture. It occurred in a woman in Ohio, and was estimated to weigh about two hundred and seventy-five pounds. This lasted sixteen years, and during that time she had one child and one or two miscarriages.

Dr. Elliot wishes me to show a specimen of congenital agenesis of the hepatic duct. In this case the infant lived to be four months old, and on dissection no evidence of any hepatic duct outside of the liver was found. There was a gall-bladder and a cystic duct which could be followed down into the intestine, but the hepatic duct, at the time of the operation, ended in a sort of bladder filled with bile. Throughout the liver were dilated ducts and the organ was in the condition of so-called biliary cirrhosis.

This other specimen is one of Dr. Homans's and is extremely interesting, as showing the formation of biliary calculi on a ligature removed some twenty months after cholecystotomy.

Dr. Elliot: The child from whom this specimen came was operated on at the age of four months, and it was a typical case of congenital obstruction of the bile ducts. Usually the diagnosis is not made, for the reason that the child is jaundiced soon after being born; then the jaundice clears up. As the liver becomes cirrhosed by back pressure, less and less bile is formed and the color fades out, the patients are usually treated for inanition and die. My assistant, Dr. Putnam, now in New York, worked this case up admirably for me. He made repeated examinations of the feces, and found that absolutely no bile entered the intestinal tract, and the diagnosis was established. At the operation the hepatic duct was found bulging forward and full of bile. It had no connection whatever with the common duct, and the gall-bladder was empty. I opened the hepatic duct and put a very small glass drainage tube into it, hoping to drain it until the condition of the liver improved, but the child unfortunately died, probably from cirrhosis of the liver.

Dr. Cabot: It seems to me that these specimens

Dr. Harrington has shown illustrate extremely well the importance of operative examination in these cases of anuria. Perhaps half a dozen cases are on record in which the condition of the ureters and kidneys has been investigated by median laparotomy. It seems to me in every case of complete anuria coming on in this sudden way, and probably the result of some calculous stoppage of the ureter, that a median laparotomy offers us almost the only possibility of making out exactly where the stones lie and of devising the proper method of reaching and removing them. Usually the localizing symptoms of pain and tenderness are not sufficient to enable us to locate the stones. I carried out that plan of median laparotomy in but one case, and that was a rather curious one and has been reported. I did not succeed in locating the stone, but the manipulation had the effect of curing the patient. The catheter introduced into the bladder drew two drachms at one time, and that was all the urine passed from the time of the stoppage. I made a median laparotomy, not having the least clew as to which kidney was good and which bad, if one of them was diseased, and having no clew as to where a stone was fixed in either ureter. The patient was a very stout man with a great deal of post-peritoneal fat. The ureters were palpated from the kidney to the bladder without our discovering any hard body. The right kidney was very large, evidently hydronephrotic, and probably was in such the same condition as that smaller kidney in Dr. Harrington's case, that is, a condition of extreme hydronephrosis. The other was a well-formed kidney. It seemed probable, therefore, that the stone which finally brought about the anuria was in the ureter on the side of the good kidney. An incision was made in the loin over that kidney, and with a hand in the abdomen and the other over the kidney, a complete palpation of the kidney and the pelvis was made without discovering any stone. The wounds were closed, and in the first twenty-four hours after that manipulation the patient passed about two gallons of urine. Subsequent pumping out of the bladder with the litholapaxy pump removed not more than twenty grains of calculous material, which, no doubt, had been dislodged from the ureter during my manipulation.

Other cases have been reported. I did not know this subject was coming up or I should have looked up the names of the operators to whom a median laparotomy has been of service under these circumstances. It has been of service not only in locating the stone, but in guiding the operation. In one case the stone was impacted close to the bladder well down in the pelvis, and could not have been reached from the loin except with the help of the hand inside the abdomen. The hand inside the abdomen was able to lift the stone to where it could be reached and removed extraperitoneally from behind. It seems to me the frequency of the stoppage of both ureters by calculus makes the importance of getting the exactest knowledge by a median laparotomy quite evident.

Dr. Wm. S. Halsted, of Baltimore, read a paper entitled

CONTRIBUTION TO THE SURGERY OF THE BILE PASSAGES, ESPECIALLY OF THE COMMON BILE-DUCT.[1]

Dr. Homans: The diverticulum he speaks of is something I have not chanced to meet with, or if I have, I have not known it. My cases at the hospital for the last three or four months have been principally gall-stone cases of extra-uterine pregnancy; there have been a great many of them. In some of the cases in which I expected to find gall-stones I found none, but thickening of the gall-bladder and adhesions in that neighborhood. I should be at a loss to explain how Dr. Halsted's patient with the contracted gall-bladder dilated again. I supposed it would be impossible for these contracted gall-bladders to dilate.

I am very much interested in the general question of the pneumonia that follows these operations whether of gall-bladder or appendix. I have one now in a little girl. The pulse has been 152 for forty-eight hours, and I imagine it is a case of benign embolus coming from my operation for appendix in the interval two days ago. There are no abdominal symptoms, but the pulse is 150 and respirations nearly 50.

I am certainly in accord with Dr. Halsted as to the value of transfusion in these septic cases. It seems to me I have seen it of great value. I am afraid when I have given my subcutaneous injections I have not been careful not to have a tumor form. I am afraid that I tried to get in a good deal at once. If there was not a tumor I should feel I was going too slowly. I have also supposed that infusion in veins was of more value than indirect transfusion in the cellular tissues.

Dr. Cabot: I have nothing to add to Dr. Halsted's very complete explanation of his methods in gall-bladder surgery. I was very much interested in the part of the subject which I wish he had talked about a little more, namely, that of the technique, the method of keeping the parts exposed sufficiently to make his manipulations easy. I was also interested in the incision that he uses, because it is a different one from the one I have always employed. I have used the diagonal incision from the edge of the rectus, or a little beyond it into the right flank, and I can see that with his incision in the semilunar line, he might be able to get the intestines further towards the left, and perhaps in that way uncover parts which I have found rather difficult of access. Certainly it is a suggestion I am very grateful for and shall try at the first opportunity. Also, I was extremely interested in his explanation of his hammer, which of course I had read about but had not seen used, and I can readily believe it would be of a great deal of service in guiding the sutures.

There is one explanation of that dilatation of the gall-bladder which seems possible. He spoke of the first gall-stone he removed as lying rather loosely in the dilated portion of the duct. It occurred to me to wonder whether there might not have been a smaller stone back of that, a stone possibly in the hepatic duct. I remember one case where, after clearing a stone out of the common duct, I felt such a stone in the hepatic duct, and spent a long time trying to get it, and finally broke it and removed a small portion, but a considerable part escaped back into the hepatic duct where I could no longer feel it. I was obliged to leave it, but fortunately it caused no further trouble. May not a small stone have been behind the larger one, and when the larger one was removed, come down and become wedged in the lower portion of the common duct in front of the dilatation which he describes, and have filled that duct so full that the gall-bladder was obliged to distend?

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[1] See page 645 of the Journal.

Dr. Richardson: I am sure that we all have been very much interested and feel grateful to Dr. Halsted for his paper. It seems to me that the variety of conditions of the biliary passages is so great that one might have a very considerable experience and yet not meet with any of the rare cases he has spoken of; and, on the other hand, one may see a few cases only and strike just those curious things. The cases given are in point. Now in all the gall-bladder cases I have seen, those in which the stone is in the common duct are very few in number, so that my experience has been almost entirely with stones in the gall-bladder without jaundice. That part of the subject is comparatively simple. The surgery of the common duct, stones in the common duct and in the bile-duct too, seems an entirely different matter from stones in the gall-bladder. The difficulties of course are very great, and the particular points one wishes to hear discussed are those raised by Dr. Halsted. First, with reference to the diagnosis of these cases. I heartily agree with him that it is very desirable beforehand to make the diagnosis, and, as he says, if we find out beyond doubt by exploration, we may neglect some of the important points. It certainly is extremely desirable to avoid a useless exploration. My experience is that exploration in cancers of the abdomen, especially in cancers about the gall-bladder, common duct or pancreas, has a large mortality. That is not my experience alone either. I looked over the records of our abdominal ward the other day, and was impressed by the large number of deaths in gall-bladder surgery in the hands of all the surgeons in explorations in which there was cancer. They die two or three weeks after the operation, not the result of it, but hastened by it. So it seems to me very desirable to eliminate if we can by a correct diagnosis the hopeless cases and not subject the patient to the operation.

The next point, the incision, interested me, and I am glad to know that that rectus incision is made. That was the incision that Tait used first, and we all used the oblique incision. I have now come to the rectus incision, but go rather through the outer portion of the muscular fibres of the rectus, and that gives a beautiful view of the common duct and also of the colon, and, if necessary, you can go toward the stomach and it does not cut across muscular fibres.

One thing I have had a little experience in, and that is in the matter of hemorrhage,— Dr. Halsted asked for that,— but not hemorrhage from the stomach. I formerly believed that there was not much danger in operating on jaundiced cases,— I mean danger of hemorrhage,— till some years ago a patient died from the prolonged ooze from the gall-bladder; nothing would stop it. This year I lost a patient within twelve hours after removal of gall-stones in a very jaundiced woman in which in the whole operation there was not a single ligature applied: it was not necessary.[1] That woman died, and apparently every capillary in the field bled. Not only that, but the peritoneum all around the wound bled. I think one of my colleagues had a similar experience, an extensive capillary ooze, which proved fatal in spite of efforts to prevent it.

Another point is the localized paralyses of the intestine. These usually are the result of gall-stones, but I have found acute inflammations in two or three instances, I think four in all, in which there were no gall-stones, and yet there was an acute infection of the gall-bladder, and the symptoms in most of the cases were those of acute intestinal obstruction. I think all that had these symptoms recovered, but the obstruction was apparently due, as pointed out by an English author, to the fact that the hepatic flexure of the colon was distended and covered with exudation, and apparently the seat of a localized infection. It is very extraordinary, it seems to me, that an acute inflammation of the gall-bladder should have the symptoms of an acute intestinal obstruction, and I think that is the explanation of it.

With reference to the time of operating, it seems to me so desirable to take out gall-stones when they are in the gall-bladder, that if a patient has had several attacks of jaundice and got over the jaundice it is wise to wait a while to see if he will not get over the present attack; then, the common duct being clear, it is probably true that the stones are in the gall-bladder. I have followed that whenever I could, but there are cases in which it is clear from the duration of the jaundice that there is little if any chance that the stone can be made to pass. Then, of course, if the gall-bladder is opened and the common duct is not completely cleared we have the conditions for permanent fistula. Dr. Mixter has had a very gratifying case of that kind in which secondary operation proved efficacious.

One other point occurs to me and that is whether to sew the gall-bladder to the abdominal wound or not. I have always performed that operation when I could. Eight or ten years ago a case came to me in which the gall-bladder was a little knob on the under surface of the liver three or four inches from the skin. There never had been any question that you ought to sew the gall-bladder to the abdominal wound to prevent extravasation of bile. I did not know what to do in this case. I was then led to the last resource of a man who does not know what to do and that was to put in gauze. We took the gall-stones out of the common duct and then put gauze about, as Dr. Halsted mentions.

I am glad to hear that it is regarded in Germany, by the most experienced, wise to prevent extravasation by the use of sutures in the tubes, for I have felt perhaps that we were a little too confident in the use of drainage and in the closure of gall-bladders by suture. I never have dared to close a gall-bladder by suture and drop it into the abdominal cavity and sew up the abdomen. I dare say it is safe enough at times, but if things do give way it takes but a very short time for the abdominal cavity to be flooded. When I have sewed the gall-bladder up I have made provision for extravasation by a small strand of gauze and that has not worked badly. I have not had the good fortune not to lose cases of gall-bladder surgery. I think Dr. Elliot looked up all the cases here and found the mortality about 20 per cent. If we leave out the cases of malignant disease the mortality is very much smaller; still it seems to me there is present the danger of hemorrhage in jaundice and occasionally the danger of peritonitis, but that right upper quadrant is so protected by the mesentery and the colon that the infections are easily limited to that quadrant. I have never had a case of peritonitis following gall-bladder surgery. Those cases that have died have generally had a base of malignant disease, and have died in two or three weeks after the operation.

Dr. Mixter: There are two or three points Dr. Halsted has mentioned and one or two he has not mentioned which I think are of great interest. First, the question of sewing the gall-bladder to the abdominal wall. If there is one thing I think is an unsurgical procedure it is the sewing of any hollow viscus to the abdominal wall. I do not believe the man lives who can make a tight joint and do it in any reasonable time, especially when he has to sew it to an incision very much longer than the incision of the hollow organ. That is just as true of the intestine in artificial anus as in the gall-bladder. In addition to the strain brought on the gall-bladder we must remember the abnormal position in which it is placed by such suturing. I believe most thoroughly in the method Dr. Halsted has suggested, only I think it is better to tie it with a good piece of silk and tie tight enough, so that when in two or three days after the packing can be removed the whole thing comes out because where the string has gone round there has been a slough. I have never seen any infection follow such slough. The same method is applicable to the intestine.

Then there is one point Dr. Halsted did not allude to, except perhaps incidentally, and that is the question of leaving these wounds in the common duct unsutured. I have had quite a number of cases of stones in the common duct, and a part of them I have sewed up and a part I have not. I believe it is said that the statistics are better in those cases where suture has been used. I have certainly seen cases where it is impossible to suture, not having tried Dr. Halsted's mallet, but where a considerable opening had to be made. In one case two openings at different points had to be made, and the patient's condition was such that it was absolutely essential to stop the operation. In those cases I have simply put a tube down to the duct and packed some gauze round it, and the patient got well. I have had at least four patients recover where there has not been suture of the duct. As far as my experience goes, one has been as successful as the other, and the biliary discharge from the duct, which has lasted a few days, has stopped in every case.

There is another class of cases, which has not been mentioned, which has interested me — two classes in fact, one in which you operate expecting to find a stone in the gall-bladder or common duct where the symptoms have been almost typical. There have been two of these cases referred to me from the medical side at the Massachusetts General Hospital, and in three cases now I have opened the abdomen expecting to find a gall-stone or some obstruction and have found a very localized tubercular peritonitis, no involvement that I could find about the duct, no enlarged glands, such as Fenger describes, but a little localized peritonitis. I enlarged the incision to see if the tuberculosis had extended, and it was, apparently, only at that one point. Those cases got well and, so far as I have been able to follow them, they stay well. The other cases are those cases which seem to resemble gall-stones, but where you have a localized inflammation about the entrance of the common duct and the pancreatic duct in the head of the pancreas. There I think Dr. Whitney will remember one or two autopsies being made at the hospital where the patients have died following operation for supposed gall-stone, where the only possible thing found has been very localized pancreatitis, nothing like the hemorrhagic form, but apparently a chronic subacute form of pancreatitis characterized by minute abscesses in that neighborhood. Those conditions can be recognized at the time of the operation by the swelling. In both cases I thought the trouble was malignant and in both it was found to be simply this inflammatory process.

These gall-bladder and gall-duct cases I think are almost the most interesting we have. They may be the most puzzling. I remember Fenger saying to me that he knew nothing which would make one feel so helpless as to open the abdomen expecting to find some definite thing in connection with the gall-bladder or common duct and find you could make out absolutely nothing.

Dr. Halsted: The reason we try to avoid the tumor in transfusion is because fluid injected so rapidly into tissues insults the tissues to a certain extent, as experience has shown, and if it has to be repeated often might possibly lead to a low-grade inflammation which would be painful. We have seen that on the medical side frequently. The tube is inserted gently and it may take one-half to one hour for the fluid to pass in.

In reference to the incision and Dr. Cabot's request for further information as to our technique in exposing parts — we have had occasion twice to exsect ribs, once because the liver was very small, once because it was very large. This suggestion came from Dr. Lange, of New York. Once we found excision of ribs of great use in extirpation of a tuberculous kidney on the left side which was very adherent, especially to the diaphragm — a most difficult operation, and we finally thought we would have to give it up, but excised these ribs and then completed the operation.

We had discussed that same possibility that the stone might have been in the hepatic duct. We were anxious to accept that explanation because it was a little easier for us. I have once seen a stone at autopsy which had been sliding up and down in the common duct, sometimes in the liver and sometimes almost in the duodenum. This was a stone as large as my thumb and it had almost made its way into the duodenum. There was a large rent opening in the place of the ampulla and the stone had almost passed in, but could not quite, as there was a little flange on the stone. We had examined the hepatic duct so far as it was palpable with care and I thought it was more likely to be in a diverticulum, because it is so much easier to overlook a stone in a diverticulum.

Dr. Richardson spoke of so many rare cases in gall-stone surgery, that almost any surgeon, however great his experience, seldom sees many rare cases, and it does seem strange that we have had so many rare cases in Baltimore, and particularly strange that we have had so many common duct cases. I, of course, spoke of very few of them, but we have had a very large percentage of common duct cases. I think when we had had six common duct cases we had not had much more than twelve gall-stone cases altogether. In our part of the country patients will not be operated on or doctors will not send them in until they are in a desperate condition. They must be jaundiced, in fact without jaundice many believe there are no gall-stones, so that we in our community do not get the cases so early.

Dr. Richardson spoke of the little knob found in the liver. We have once or twice left little gall-bladders where we were sure there was no stone in the gall-bladder. I think it would be wiser to excise such.

With reference to the purse-string suture, we were afraid the gall-bladder might slip and it has been our habit in such cases to use the purse-string suture, and granted that the purse-string suture is advisable it is easy to understand why we use catgut instead of silk.

I agree that these are about the most interesting cases in surgery. I do not know any cases that are attended with such reward. Patients come in almost moribund. It is simply marvellous how, if they are relieved of their stones, particularly in the common duct, they commence to bloom and in a few weeks are eating tremendous dinners. I saw, before starting for Boston, a man operated on three weeks ago, who for ten years had had gall-stones, and his mind was very much affected with his jaundice. The stones had been in the common duct the past few years and he was dazed, would have temporary fits of aberration, and yet that man was a switchman in some very important position and played his game of chess, as he called it, in this condition. In this case it did seem as if he could not be restored, and yet in three weeks he is now almost well.

I have never had any experience with local tuberculosis in that region and was very much interested in that.

Some surgeons stitch the incision which they make into the common duct; others do not. Among the latter are men of large experience in the surgery of the bile passages. If the patient's condition is good and the gall-bladder has not been removed I suture the duct. When the duct has been carefully sewed it is not necessary to pack the peritoneal cavity so generously as one packs it when the duct is not sewed, and the bile, instead of soaking the dressings and the patient, is syphoned with a rubber tube from the gall-bladder to a bottle in or under the bed. Packing promptly soaked with bile might not wall off the general peritoneal cavity so well as dry gauze. The Mikulicz pad and gauze handkerchiefs caught up by the middle (conical pads) should not be used, because their extraction is sometimes very difficult and perhaps dangerous, and certainly often gives the patient unnecessary pain. We fancy narrow strips of bismuth gauze for the packing. These strips are about two inches wide and four layers thick, with the raw edges most carefully folded in. The duct should be sutured as rapidly as is consistent with perfect work. It is not by any means always necessary to use the hammers, but sometimes they seem almost indispensable. The exquisitely fine needles with a full curve and a spring eye, made by Wülfing-Luer, of Paris, and the needle holder designed by Cushing for these needles, have become beloved tools for this and other work. The needle holder has a convex and a concave blade which accurately fit the needle, and hence do not break it. The gauze should be removed with gloved fingers and not with forceps, because as each strip is tested for withdrawal it should be unfolded, spread out to its full extent and gently pulled, first at the edges.

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SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR OBSTETRICS AND DISEASES OF WOMEN.

C. H. HARE, M.D., SECRETARY.

REGULAR meeting Wednesday, October 25, 1899, DR. W. E. FAY in the chair.

DR. E. S. BOLAND read a paper entitled

UNLOOKED FOR DYSTOCIA IN CERTAIN MULTIPARÆ.[1]

DR. CALL: I don't think I have ever met with a case so difficult as those which the doctor describes, when there was no apparent abnormality. I have met with a good many cases of slight degree of the same trouble, due I think, as he says, chiefly to relaxation of the abdominal walls that comes with frequent pregnancies, and also I have always supposed that the uterine muscular fibre was weakened, and its power of contraction impaired as well as that of the abdominal walls, but I do not remember having seen any case that I have not been able to deliver without any very severe operation. I remember certain cases in which I have succeeded in making the head engage by trying first an abdominal bandage, and when that alone was not sufficient, I have had a folded sheet put around the abdomen, and some one stand behind and above and pull during every pain, and in that way succeeded in making the head engage. I remember one case where I had delivered the woman myself four times, the labor being perfectly normal. The fifth time I was obliged to use forceps, and the only reason I could give for it was that the patient had gotten extremely tired and exhausted the day before. The child, as it usually is in those cases, was a little larger than the ones before. It seems to me if I had such a case, and pregnancy occurred again that something might be done to prevent such an occurrence by prophylaxis. It seems to me there might be a good chance by having the woman wear an abdominal bandage constantly, and having the condition of the abdominal walls looked after, and using strychnia and various tonics of that kind, to make the next labor a happier one.

DR. FAY: I would like to ask the reader how much can be accomplished by external pressure over the pubes to flex the head as well as to help its descent. I have tried in vain sometimes to get some advantage in that way. And I would like to ask another question, whether the size of the body, apart from the size of the head, has ever appeared to be a distinct difficulty in causing the proper descent of the child.

DR. BOLAND: I am sorry I cannot answer the last. I have not noticed. In regard to the effect of suprapubic manipulation, I mentioned it. I do it, as I say my prayers, without much hope of immediate returns. I think I can do something from below with the fingers in the vagina. I think I can do a little flexing there, and if you hold it by suprapubic pressure I think something can be gained.

DR. EDGAR GARCEAU reported

A CASE OF EXTRAPERITONEAL NEPHRO-URETERECTOMY FOR TUBERCULAR DISEASE.

DR. BOLAND: I think the doctor deserves to be congratulated on the result of such a long, severe case, followed up clinically, surgically and pathologically, successfully. The disappointment to me in the paper is that the urine does not give trustworthy assistance in making the diagnosis. I would like to speak of a case I had last spring in a parturient woman eight days after delivery. The temperature was 103°, and I thought I had sepsis. The woman had no antecedent trouble except pain in the left side. She had gone to full term, and had a fairly easy delivery. There was nothing significant about the urine. I had Dr. Haven see the case, and he said it was nothing to do with the uterus, and that there was no evidence of puerperal sepsis ordinarily so called. At that time it seemed like an exudate over the descending colon, and I was so much satisfied that was what it was I gave repeated injections of warm water. The doctor thought it probably was an exudate so long as injections did not relieve it, and she was admitted to the Carney Hospital. They temporized quite a while and made applications externally. At the end of ten days it was decided to do an exploratory laparotomy, and, much to their surprise, they found an enlarged kidney disorganized. Before that the urine had developed albumin and pus. They did a nephrectomy through the central incision, and the woman made a very prompt improvement, so much so that they allowed her to sit up at the end of two weeks. Soon they let her come home and she became pretty miserable; vague pains and headache, and temperature 101°, 102°, 102.5°, and still some albumin in the water. I put her to bed on light diet and she began to improve again, and at the end of three weeks was able to be up and around. At present I think she is entirely well, wheels her baby out and thinks she is well. The urine is clear. I thought maybe she was allowed to sit up too soon, and there was a certain amount of renal inadequacy and that light diet and rest were needed. I should like to ask whether in this case there was any insufficiency of one kidney to carry on the work right after operation. Possibly the tolerance had been developed beforehand.

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[1] See page 654 of the Journal.

Dr. Garceau: I think there is a good deal in that, that the other kidney has been gradually taking upon itself the work which the other one ought to do, but besides this there is a great reserve power in the remaining kidney, when one has been extirpated, to do a very much larger share of work than would ordinarily be expected of it.

Dr. Boland: Pathological examination of the kidney proved it to be tubercular. The patient is now well and attending to her work.

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Recent Literature.

Recherches sur les Matières Colorantes du Foie et de la Bile et sur le Fer Hepatique. Par MM. A. Dastre, Professeur de Physiologie à la Faculté De Paris, et N. Floresco, Docteur Ès-Sciences. G. Steinheil, Editeur. Paris. 1899.

Part I: MM. Dastre and Floresco have conducted some investigations of the coloring matters of fresh normal bile from the gall-bladders of several species of vertebrate animals, among others, the calf, the dog and the pig, which have resulted in the discovery of two new pigments, one or both of which may be present in fresh bile. These pigments have been named by the authors, respectively, *biliprasinate* of sodium and *biliprasine.* They represent products which are formed in the transformation of bilirubin to biliverdin, the two pigments heretofore considered to be the sole pigments of normal bile in the gall-bladder and hepatic ducts. The biliprasinate of sodium is a pigment of a yellowish-brown color, of slightly browner tinge than the bilirubinate of sodium, the original bile pigment from which it is derived by oxidation. It is distinguished from the bilirubinate by three characteristics: (1) When subjected to a current of CO_2 it changes to a green pigment (biliprasine); (2) acetic acids and acids in general cause the same change; (3) it is unstable in a vacuum if exposed to light. None of the three above reactions characterize bilirubin of the bilirubinate of sodium, the principal form in which bilirubin is present in the bile.

The yellow color of the bile of the calf in the cases in which this bile is yellow is due to the presence of this substance. The biliprasinate is the alkaline salt of the second pigment, biliprasine, and can be converted to it by the addition of an acid. This biliprasine is the acid of which the biliprasinate is the salt. It is converted to the salt by the addition of an alkali. It is a green pigment derived from the biliprasinate by the process of oxidation and hydration. It differs from biliverdin, the final pigment into which it is transformed, by the following characteristics: (1) Upon the addition of an alkali it is transformed to a yellow pigment (biliprasinate); in a vacuum it turns to a bilirubinate. This pigment is the predominant pigment in the bile of a majority of calves, of the bile of cows and the bile of rabbits. These biliprasine pigments represent transition products in the transformation of the original bile pigment, bilirubin, to the final pigment of normal bile, biliverdin, which occurs as a process of oxidation and hydration. The transformation occurs *in vitro* in the presence of an excess of water under the influence of free oxygen, heat, reaction and light. *In vivo* it occurs, according to the opinion of the authors, under the influence of an oxidizing ferment produced by the hepatic cells.

Part II is the record of a study of the special function of the liver as a depository or storer of iron. The authors find that the livers of vertebrates and of invertebrates contain much larger per cents. of iron than any other organs or parts of the body. The presence of this excess of iron is not dependent upon the food or conditions of feeding. It is not dependent upon the destruction of blood corpuscles, since it exists in invertebrates which possess no iron in the blood corpuscles. The authors conclude from a careful investigation of the character of the iron compound in the liver and of its relation to these various conditions that the liver has a special affinity for iron, a *fonction martiale.* The work concludes with certain hypothesis in regard to the use of this function in the economy of the body.

Part III is a record of the study of the coloring matters of the liver. The authors find that the liver of vertebrates and many invertebrates contains certain coloring matters which color its tissues. These pigments are in vertebrates distinct from the pigments of the bile, which in these animals are secretions of the liver, not substances native to its tissues. They are present and identical in kind in some invertebrates which have no hemoglobin in the blood. In some invertebrates they are identical with the bile pigments. In some, as in vertebrates, they are distinct from these bile pigments.

In vertebates and in most invertebrates examined two distinct coloring matters of the liver tissues are present: (1) A pigment soluble in water which contains iron; (2) pigment soluble in chloroform and in alcohol, insoluble in water, and containing no iron. The first is called *ferrine.* The color of this pigment is due to the iron which it contains. The second is called *choléchrome.* These pigments exist together in the tissues of the liver, giving the organ the color which it possesses when all the bile and blood are washed from it. In vertebrates they can be separated from the tissues only by digestion with papain or by gastric juice, or by shaking with water after complete drying and pulverizing of the tissues. In some invertebrates the pigments can be extracted by water directly from the macerated tissues.

The Sexual Instinct; its Uses and Dangers as Affecting Heredity and Morals. By James Foster Scott, B.A. (Yale University), M.D., C.M., (Edinburgh University); Late Obstetrician to Columbia Hospital for Women, and Lying-in Asylum, Washington, D. C., etc. Pp. 436. New York; E. B. Treat & Co. 1899.

This is a book clearly written for a definite purpose, which is apparent from its first to its last page. The author is very much in earnest, of that there can be no question, and it is here that a possible criticism of the book lies. It lacks in a measure the judicial spirit, so absolutely essential in a discussion of this character. On the one hand, it merges occasionally into sentimentalism, and on the other, into an attitude toward sexual matters more extreme than the facts of the case seem to justify. Apart from this minor criticism the book is well worth reading by those scientifically in- the community at large, however, where, like many terested in the subject; we would not commend it to books of its class, it would, we fear, tend to increase rather than diminish the morbid sexual instinct which it is designed to combat.

Some of the subjects discussed are: The Physiology of the Sexual Life; Woman and the Unmanliness of Degrading Her; Prostitution and the Influences that Lead a Woman into such a Life; the Regulation of Prostitution; Criminal Abortion; Gonorrhea; Syphilis. The book in general is a narration of the details of the seamy side of life; we sincerely hope it may do good, but our confidence in the success of its mission, we confess, is not great. It is bound and printed in an unnecessarily cheap manner for this time of good bookmaking.

Gout: its Pathology and Treatment. Founded on the Gulstonian Lectures on "The Chemistry and Pathology of Gout," delivered by the Author before the Royal College of Physicians of London in 1897; with the Addition of some Recent Investigations concerning the Treatment of Gout, and a Detailed Account of the Treatment of the Various Forms of Gout. By Arthur P. Luff, M.D. (Lond.), F.R.C.P., etc. New York: William Wood & Co. 1899.

The contents of this little volume of two hundred and fifty pages are somewhat fully stated upon the title-page. The author divides his work into four parts. Part I is on the chemistry and pathology of gout; Part II deals with the causation of gout, its various forms and its diagnosis and prognosis; Part III comprises a series of investigations undertaken with the object of ascertaining the various conditions affecting the formation and removal of gouty deposits, the influence of alcoholic drinks on the gouty process, the solvent effect of the mineral constituents of various vegetables on gouty deposits, and the value of certain drugs in effecting the removal of such deposits; Part IV is devoted to the question of the treatment of gout and of gouty conditions, especially in the light of recent investigations. The important question of diet has not been overlooked by the author, and a classification of various mineral waters is given according to their therapeutic value in the treatment of the various forms of gout. England is a pre-eminent field for the study of acquired and inherited gout in all its protean forms, and from English practitioners have proceeded most of the standard books on the subject. The present volume will be found handy and useful. We miss from the list of baths and mineral waters a few of the less generally known in the winter-resort zone, which might advantageously have been included.

A Practical Treatise on Medical Diagnosis for Students and Physicians. By John H. Musser, M. D., Professor of Clinical Medicine in the University of Pennsylvania, etc. Third edition, revised and enlarged. Illustrated with 253 wood cuts and 48 colored plates. Philadelphia and New York: Lea Brothers & Co. 1899.

The first edition of Dr. Musser's "Treatise on Medical Diagnosis" was published in 1894, the second in 1896. The appreciation of the good features of the book, which are many, and the rapid changes in the collateral branches and in the sciences allied to medicine, have now called forth a third edition. The present volume is an octavo of almost eleven hundred pages, with index, and has been largely rewritten and rearranged. Dr. Joseph Sailer has rewritten the chapter on Nervous Diseases; Dr. Posey the section on Diseases of the Eye; Dr. Kirkbride wrote the pages on Pictoric Records of Physical Signs, and Dr. W. S. Smith has revised the section on Sputum. The paper and printing are excellent, and the numerous illustrations of unusual merit.

Two Lectures on the Temples and Ritual of Asklepios at Epidaurus and Athens. By Richard Caton, M.D., F.R.C.P., Honorary Physician, Liverpool Royal Infirmary. Pp. 42. Reprinted from "Otia Merseiana." 1899.

These lectures delivered at the Royal Institution of Great Britain are an historical sketch of the cult of Asklepios. The book is profusely illustrated with well reproduced photographs of buildings and masterpieces of Greek art relative to Asklepios, and with the text afford an admirable brief exposition of an interesting time in the childhood of medicine.

Essentials of Medical Chemistry, Organic and Inorganic. Prepared especially for Students of Medicine. By Lawrence Wolff, M.D., Demonstrator of Chemistry in Jefferson Medical College. Fifth edition. Revised by Smith Jeliffe, M.D., Ph.D. Philadelphia: W. B. Saunders. 1899.

This book, No. 4 of the series of Saunders' Question Compends, fulfils its purpose very satisfactorily. This edition is thoroughly revised and up to date.

The Lesions of Tertiary Syphilis.— According to the *Philadelphia Medical Journal*, Professor Fournier, of Paris, has related the analysis of 5,790 cases of tertiary syphilis, and demonstrated that of all the tissues of the body the most frequently invaded, the nervous system headed the list with 1,851. Next to this comes the skin with 1,418. The most startling particulars in the table were 758 cases of cerebral syphilis and 628 cases of tabes. This coincident occurrence of syphilis and tabes is a most interesting fact.

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PRIZES AS A STIMULUS TO RESEARCH.

We note, with considerable regret, that the custom of leaving sums of money for the establishment of prizes to be won in competition shows no evidence of abatement. The latest addition to the long list is a gift of 100,000 francs to the Institute of France from M. Osiris, to be devoted to the founding of a triennial prize for original work in various fields. In our own country the second quinquennial Samuel D. Gross prize, amounting to $1,000, is to be awarded January 1, 1900. These are relatively large sums of money, and as such they have an attraction which will no doubt excite wide competition. In the meantime countless smaller money prizes are being offered year by year, and drawing forth more or less meritorious work, usually called original. It is no secret that the smaller prizes are not eagerly competed for, and that not infrequently the prize is entirely withheld because no sufficiently worthy work has been offered.

It has recently, and very wisely, been maintained by the President of the American Golf Association that the giving of costly prizes at tournaments must be discontinued if the spirit of true sport is to prevail. Why does not the same situation face the prize-giving and prize-getting now so prevalent in so-called scientific fields? Evidence is certainly accumulating to show that the greatest honor goes with the largest prize, which is another way of saying that the more money one can win, the better his scientific work must be. This is putting the cart before the horse in a most unfortunate fashion, and is a manifest absurdity. It is coming dangerously close to the position of determining scientific attainment by a money standard. We recall on one occasion talking with a somewhat radical but extremely high-principled person on this topic, who felt that the moment a man offered his scientific work for a money prize, he irrevocably belittled himself and the science of which he was the would-be exponent. This point of view is no doubt too extreme, but it must, we think, be admitted that there is always an undercurrent of feeling that the purely money side of the prize is something to be kept in the background, and said as little about as possible. It is, in short, an extremely questionable way of earning money. Our respect for a man and his ability is not measured by the number of prizes he wins; after a certain point of success is reached, we inevitably question his motives, and wonder why he is not content to publish his paper for no other reward than the consciousness of good work and the approbation of his colleagues. Unfortunately the money counts. We are not straining our imagination when we say that we have heard men freely confess that they tried for a scientific prize because they wanted the money. This is simple honesty, and this motive will be operative just as long as large amounts of money are offered to the successful competitor. But this certainly does not stimulate research or promote the ends of science in a way which we should admit as worthy of further perpetuation. We are struggling against the prize system in our schools, and finding it altogether bad, but the prize system in later life shows no tendency toward decrease. Money which might be much better spent for other purposes is continually being tied up, that its income may aid in the "encouragement of scientific research." If we must have visible rewards for our original research, why not have them in the form of public recognition on the part of a learned society, or in some way in which the honor will be predominant and the money be suppressed? We are quite sure the cause of science would not be injured thereby.

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SPONTANEOUS RUPTURE OF THE HEART.

Most of us are liable to die from some other cause than spontaneous rupture of the heart. At the same time, the gradually accumulating literature appears to show that the accident is possibly not so rare as we have been taught to think. It is furthermore quite possible that the deaths occasionally reported without apparent cause may, at least in part, be due to a rupture of the heart wall. In any case, reports adding to our knowledge of this somewhat rare condition are welcome and needed.

In the issue of the Journal for November 9, 1893, Dr. W. T. Councilman published a paper in which he discussed the question of sudden death due to the heart. In that communication he stated that in his own experience he had seen four cases. Devergie, quoted by Councilman, estimated that two and a half per cent. of cases of sudden death were due to ruptured heart. In general, the condition is associated with the changes in the circulating system coming on during the latter periods of life.

In the Journal of July 18, 1895, Dr. J. A. Tanner reported a case of perforation of the heart, in which the autopsy, done by Dr. W. H. Whitney, showed an atheromatous degeneration of the coronary arteries, with subsequent changes in the myocardium, which explained the rupture. The patient in this case was a man of eighty-four, who had previously had certain more or less vague symptoms on the part of the heart, A more recent paper on the subject is by Dr. A. W. Hoisholt, of Stockton, in California, who has had an opportunity of studying two cases at the State Asylum for the Insane, and has reported his experience in the *Occidental Medical Times* for October, 1899. Of interest in these cases is the fact that no complaint of heart disturbance had been made or discovered, and that both patients were comparatively young men, one fifty-five and the other about forty. The symptoms in the first case were of six hours' duration, associated with sharp pain, cyanosis and dyspnea. The autopsy revealed a small rupture, about the size of a goose-quill, communicating directly with the left ventricle. There was a certain amount of degeneration of the heart vessels and fatty degeneration of the heart muscle. The second patient apparently died peacefully, as the following account shows. He occupied a dormitory with eight other patients, and neither these nor the night attendant, who looked into the room once every hour during the night, had had any reason to suspect that he was ill. He was found lying on his back with his legs drawn up in a position of easy repose, with his arms folded over the abdomen, but lifted slightly from the surface by the rigor setting in after death. The heart was enlarged and flabby, and showed a tear about 1.15 centimetre in length, located about 3.75 centimetres from right border of the left ventricle and about the same distance from the apex. In the centre of the tear a small opening admitting an average size probe was found to connect with a tortuous canal, the under end of which was lost among columnæ carneæ. The epicardial fat tissue was thick around the bases of the ventricles, especially over the right ventricle, where it measured 0.5 centimetre in thickness. The mitral valves showed fatty deposits.

The importance of this condition will increase with our knowledge. It has been suggested that a positive diagnosis is, at present, only possible at autopsy, but there can be no doubt that attention directed to the possibility of heart rupture in doubtful cases will do much toward removing the present obscurity of the clinical picture, and to that end it is desirable that all cases should be placed on record.

CHRISTMAS AT THE HOSPITALS.

It is a pleasing custom, and one which we hope may not die out, of recognizing in some substantial way at the hospitals the advent of Christmas. A dinner with some added delicacy for those whose condition permits a slight departure from a strict diet is welcome anywhere, and, no doubt, particularly to the hospital patient, but something more than this is also quite in order, and appears to have been carried out this year with gratifying success at our larger hospitals. Through the offices of Mr. O. E. Mills, of the New England Conservatory of Music, a somewhat elaborate programme of song and pantomime, with the introduction of the perennial Santa Claus, was given at the City Hospital the day before Christmas and repeated at other institutions on Christmas Day. This seems to have met with the undisguised approval of the patients, particularly of the children, who found Santa Claus as entertaining and extraordinary an apparition as he has proved to be on countless other occasions. Christmas trees and stockings have also been forthcoming, and friends of the hospitals have, as usual, provided numerous gifts.

MEDICAL NOTES.

The Duke of Westminster Cremated. — We learn that the body of the late Duke of Westminster has been cremated. This is an example which we hope may be more and more generally followed.

Further Prevention of Cruelty to Animals in the District of Columbia. — We learn from the very best of authority that there is no possibility of the passage by the United States Senate of Senate Bill No. 34, entitled "Further Prevention of Cruelty to Animals in the District of Columbia."

Spread of Plague. — It is reported that plague has appeared at the port of Delagoa Bay, and also sporadically in Algeria, while several thousands are daily dying in India. The fear which has been mentioned, that the disease may appear in the armies now in South Africa, is rather too remote a danger to excite any grave anxiety.

Hospital Burned at Santiago. — It is reported that the yellow-fever hospital, located on an island in Santiago, has been burned. The fire was evidently of incendiary origin. An adjoining building, containing a hundred bodies of American soldiers in sealed coffins, ready to be shipped to the United States, was saved by the heroic efforts of the firemen.

A Munificent Prize. — It is stated that the Institute of France has received from M. Osiris a sum of money sufficient to supply a triennial prize of 100.000 francs to be awarded for the most remarkable work of general interest. The donor makes special reference to medicine and surgery. We sometimes wonder if this prize-offering is the best method of promoting scientific work. It seems to us doubtful.

New Museum for the University of Pennsylvania. — The University of Pennsylvania's free Museum of Science and Art, one of the late Dr. William Pepper's cherished hopes, was formally opened last week. Immediately following the presentation to the Board of Trustees of the museum, a bronze statue of the late Dr. Pepper, the gift of friends, was unveiled. Mrs. Pepper, the widow of Dr. Pepper, presented, as her memorial to the memory of her husband, a gift of $50,000, as a fund to carry on the work of the museum.

Poor Provision for Wounded British Soldiers. — As is natural in the presence of reverses, the War Office in England is receiving a large amount of criticism. We learn from a correspondent to a daily paper that great indignation has been excited by the discovery that the convalescent homes for which provision had been made are none of them ready to receive the wounded coming back from the war. No nurses have arrived, no resources have been provided, nor have any of the hurt been taken to the homes which were to be made ready. Yet in February last the War Office pledged itself that preparations would be made.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, December 27, 1899, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 89, scarlatina 64, measles 52, typhoid fever 16.

Boston Society of Medical Sciences. — At a meeting of this Society, held December 19th, the following papers and communications were offered: Dr. W. F. Whitney read a paper on "Malformations of the Kidney," and reported two unusual cases. Dr. Charles S. Minot spoke on the "Development of the Kidney," and demonstrated the probable source of such malformations as had been described by Dr. Whitney. Dr. Thomas Dwight demonstrated a number of unusual skulls, and advanced certain theories regarding their formation. Mrs. J. H. Cunningham read a paper on "Saprolegnia," in relation to its fatal effect upon trout, particularly in hatcheries. The reader described an ingenious filter, which he had devised as a possible means of preventing the entrance and growth of saprolegnia in the water of tanks, etc., used for raising trout.

A Bequest to Carney Hospital. — By the will of Julius Adams, a lawyer of Boston, the Carney Hospital in South Boston gets $25,000. Mr. Adams, who was for some time a patient in that institution, also bequeathed various amounts to some of the nurses and doctors by whom he was attended while there.

Free Vaccination. — Free vaccination has begun in the schools in East Boston. That there is a dread of the spread of small-pox in this district was evidenced by the large number of persons who grasped the opportunity afforded by the Board of Health as a safeguard. Two hundred and thirty-four were vaccinated the first night, and it was stated that some were turned away from the Lyman school. The greatest number was vaccinated in the Emerson schoolhouse, the number reaching one hundred. Vaccination will continue each evening for a week from the time of beginning.

Another Case of Small-Pox in Chelsea. — Another case of small-pox has been reported from Chelsea after a respite of two weeks.

Diphtheria in Waltham, Mass. — During the past week 15 cases of diphtheria have been reported to the Board of Health in Waltham, of which three have resulted fatally. Several afflicted with the disease have been taken to the contagious hospital. It is said that the spread of the disease was caused by neglect on the part of some of the families in not calling a physician sufficiently early.

A Centenarian. — James J. Cavanaugh is said to be the oldest person in the State of Massachusetts. He is reported to have passed his one hundred and ninth year in the possession of his faculties, with the exception of a considerable degree of deafness. He lives in Watertown.

Annual Meeting of Scientific Societies.— The American Association for the Advancement of Science and its affiliated societies hold their annual meetings at New Haven, December 28th and 29th. The Association of American Anatomists, the American Physiological Society, the American Chemical Society, the American Society of Naturalists, the American Morphological Society, the American Psychological Society, the Society for Plant Morphology and Physiology, the American Folk-Lore Society, the Archeological Institute of America constitute the affiliated societies. The Society of Naturalists has provided at one of its sessions for a general discussion on "The Position Universities ought to take in Regard to Investigation."

An Unusual Breach of Trust Case. — A claim of $5,000 has recently been brought against a Hartford, Conn., physician on the following somewhat extraordinary grounds: The doctor had agreed to take charge of a maternity case but was not present when the child was born; a few days later the child died. The physician was then sued for breach of trust in the case and as being responsible for the death of the child. The defence demurred to the complaint, stating that the father could not have acted as the agent for the child and that the doctor did not contract with the unborn child for its delivery. As the case was brought because of the death of the child, the defence claimed that it should be quashed. The judge ruled that suit may be brought in behalf of a child unborn when its parents had made a contract to deliver and care for it after its birth, and found true cause for action on the part of the parents. The case has caused considerable interest throughout the State, and is the first of the kind brought under Connecticut statutes.

NEW YORK.

Medico-Legal Society. — At the annual meeting of the Medico-Legal Society, held on December 20th, the following officers were elected: President and Treasurer, Clark Bell, of New York; Vice-Presidents, Drs. George L. Porter and T. D. Cruthers, of Connecticut; Recording Secretary, H. Gerald Chapin, of New York; Corresponding Secretary, Moritz Elbinger, of New York; Librarian, Howard Ellis, of New York.

A Truant-School Farm. — The school authorities of the boroughs of Manhattan and the Bronx have applied to the Board of Estimate and Apportionment for an appropriation to cover the expense of purchasing and equipping a truant-school farm, to which incorrigible children may be sent, instead of being confined in the truant school in the city, as at present. It is the design of the Committee on Special Schools to make this school farm an attractive home where the truant pupils can receive physical and manual training, in addition to scholastic instruction. The plans include a series of cottage dormitories, each accommodating ten boys, with executive buildings, in which will be located a school, gymnasium, playrooms and workshops. No site for the institution has yet been selected, but the Committee has the option of several desirable properties, and it will probably be located somewhere in Westchester County.

Suit against a Water Company. — In the suit of the State of New York in the relation of Dr. Edward F. Brush, ex-Mayor of Mount Vernon, Westchester County, against the New York Suburban Water Supply Company, to compel the latter to furnish an abundant supply of pure water to the inhabitants of that city at a reasonable price, which was tried in the Supreme Court at White Plains, on December 19th, the jury rendered a verdict to the effect that the company must supply the two million gallons required per day at the rate of 15 cents per hundred cubic feet, instead of 22 cents, now demanded, and that the water must be pure and wholesome. It had been charged that the reservoirs of the company were in such bad condition as to render the water unfit for use.

An Aged Immigrant.—Mrs. Ida Schiebs, a Russian Jewess, died on December 22d, at the reputed age of one hundred years. She is said to have been the most aged immigrant ever received at the port of New York, as it is only six years since she came to this country.

Miscellany.

INDUSTRIAL SCHOOL FOR CRIPPLED AND DEFORMED CHILDREN.

During six years of active life this school has accomplished most gratifying results in giving instruction to crippled children, who through their infirmities are unable to compete with normal children.

The school now has 44 pupils, with a waiting list of over 50. The children are brought from their homes in the morning and returned in the afternoon. They are given instruction in the common school studies and provided with a substantial dinner. The industrial teaching is in printing, sewing, clay modelling, cane chair seating and the Sloyd system. The school has outgrown its present quarters on Newbury Street, and it is hoped that land and a suitable building may be procured for the proper continuance of the work. The physical condition of the children, which is often a matter of the greatest consequence, is looked after by physicians skilled in orthopedic surgery. The enterprise is certainly one deserving of the warmest support.

SAMUEL KETCH, M.D.

Immediately after the stated meeting of the Orthopedic Section of the New York Academy of Medicine, held on December 15, 1899, had been called to order, it was on motion adjourned out of respect to the memory of Dr. Samuel Ketch, and a committee was appointed by the Chair to express the sentiments of the section. The committee reported as follows:

The Orthopedic Section of the New York Academy of Medicine desires to express its profound grief at the sudden death of Dr. Samuel Ketch, one of its most useful and honored members.

An original member of the Orthopedic Society, since merged in the Orthopedic Section of the Academy, he served as its secretary in 1889, and as its chairman in 1891, presented several valuable original contributions, and was at all times prominent in everything pertaining to its best interests and progress.

Identified with the practice of orthopedic surgery for nearly twenty-five years, and in every way devoted to the advancement of his chosen work, his life was one of consistent uprightness and honest and successful effort.

(Signed)

Henry Ling Taylor,
Newton M. Shaffer, *Committee.*
Reginald H. Sayre,

THE RIGHT OF THE DEAD TO LIVE.

There appears to be a strong impression — perhaps only a space-filling revival of an impression — going the rounds of the newspapers at least, that many people are buried alive. The revival of this ghastly idea from time to time has led to various tests and devices by which the unfortunate result might be averted, but we have found none so original and startling as the following, said to be the invention of Count Michel de Karnice Karnicki, chamberlain of the Tzar of Russia. A demonstration of the apparatus has recently been given at the New York Academy of Medicine by M. Emile Camois, of Paris. We do not vouch for the exact authenticity of the following account, which, however, we have no doubt does, if any, only minor injustice to the truth:

"The apparatus used for the demonstration presented a gruesome spectacle. On the platform rested a coffin, with the front side left out to give a view of the interior. Four stanchions six feet high, corresponding to the depth of a grave, supported a scaffolding, upon which rested the apparatus proper. "La Karnice," as the Russian invention is called, consists of an iron box about two feet square, from the under side of which a four-inch iron tube extends downward and fits into a hole in the coffin near its head. Through this tube extends a small iron rod, extending to within five inches of the chest of the body. The upper end of the bar connects with the mechanism in the box above. On the outside of this box is rigged a large gilt ball on a six-foot lever, which, when the instrument is wound up, is held in a horizontal position by a sort of trigger. The grave is supposed now to have been filled in, leaving the box of machinery and the gilt ball inert on top. No one is supposed to be left in the vicinity except the cemetery keeper or grave digger. Supposing the body suddenly revives, it may either pull or push the ball at the end of the rod, with the same result. Instantly on top of the supposed grave the gilt ball flies up on its lever with a bang. The lid of the machinery box flies open, and a bell within with a capacity of a dozen alarm clocks begins to ring energetically, and fresh air is admitted. The interior of the box displays a lamp which it was explained could be left lighted at night. The automatic opening of the box releases a reflector which adjusts itself near the lamp. This reflector, it was explained, would throw the cheerful light of the lamp down through the four-inch tube into the coffin, so lighting up the interior that 'one could read a newspaper with ease.' The lecturer referred to this last feature several times as being particularly comforting. The interior of the machinery box further contains a small double-barreled arrangement whereby simultaneously with the agitation of the gilt ball, the ringing of the bell, and the lighting of the lamp, a small skyrocket is set off, and a lighted bomb thrown a short distance away, there to explode. By this time it was but fair to assume, the lecturer said, that the cemetery keeper if not the entire neighborhood would be apprised of the fact that something was wrong."

We quite agree with the last statement, but a renewal of life gained at such a sacrifice of the ordinary amenities supposed to go with burial will hardly commend itself to the more seriously minded portion of the community. The Count should simplify his machine.

THE NATURAL RIGHT TO A NATURAL DEATH.

Our leading article in this issue is the President's address delivered at the recent annual meeting of the American Social Science Association, which is here published, by permission, in advance of its publication in the *Journal of Social Science.* This address has been very extensively criticised both by the lay press and by the medical journals of the country, but it must be remembered that these criticisms were based upon newspaper reports of the meeting and that the complete address is now published for the first time. The address is an interesting, scholarly and exhaustive discussion of the subject of which it treats, and theoretically we can agree with the main conclusion reached by its distinguished author, namely, that to prolong life by a few hours or even days, at the cost of much pain and agony, and against the desire of the sufferer who is dying of a disease from which recovery is impossible, is cruelty rather than mercy. Practically, however, in view of the limitations of our present knowledge, we must condemn the views expressed by Judge Baldwin as being dangerous and unscientific. He admits that "If a recovery is possible all means of recovery should be exhausted." Who is to decide whether or no recovery be possible in a certain case? I doubt if there is a physician of large experience who cannot point to living patients whose recovery from a certain illness he has declared and believed impossible, but who are to-day active, useful and happy citizens. Even in those dreadful cases of malignant disease to which he refers, modern surgery is daily recording new achievements where months and even years of comfortable life have been given to the victim who had been previously condemned to a speedy death. "Never give up your patient while he breathes" was the advice of a distinguished surgeon in an address to students, and it is sound advice. When medicine becomes an exact science, when the physician can predict unerringly the outcome of disease, and can declare with absolute certainty (life is certainly too precious to be satisfied with "all reasonable possibilities") that death is approaching, then perhaps it will be right for him to "bow before the awful will" and to be content with soothing the last moments of him "who is simply lingering on the brink of a kindly grave." If, however, there is even a remote possibility of snatching the sufferer from that grave and restoring him to life, it seems to us that the duty of the physician is clear. To all of this we are sure Judge Baldwin will give his hearty assent; but we believe that he has erred in attributing to medicine an infallibility which she does not possess. In the case of the infant, with a congenital defect which surgery can remedy only at the expense of making its life a "daily and hopeless misery," the responsibility does not rest with the surgeon, as a rule, but with the parents, and we have yet to meet the mother who would not demand the life of her new-born babe, no matter what the circumstances, or the surgeon who would refuse it to her.

The suggestion that when we save the life of an individual who but for our interference would die, we may be depriving him of the opportunity to fill a specially appointed place in another life, which if not occupied at the appointed time will be taken by some one else, is certainly original, and smacks of an orthodoxy which is quite beyond our comprehension. Were we convinced (which, thank God! we are not) that such is the case, we should look with conscience stricken eyes upon sundry poor devils whom we, with the best of motives, have snatched from impending death and thereby compelled to occupy, in the future, seats much more remote from the Throne than those which they might have occupied had we left them to their fate!— *St. Paul Medical Journal*, December, 1899.

Correspondence.

THE INVIOLABILITY OF PROFESSIONAL CONFIDENCE.

Boston, December 25, 1899.

Mr. Editor: — On page 17 of the *Sunday Herald* of December 24, 1899, appears a full account of the case of the foundress of the system known as "Christian Science," furnished by the physician who attended her in 1866, and now published, it is said, at the suggestion of a prominent clergyman. Her condition is minutely described and the remedies used are given in detail.

Such a scandalous betrayal of confidence ought not to be passed unnoticed by a profession which rightly regards with detestation any breach of common honor and honesty. The writer has certainly no sympathy with the delusion of which Mrs Eddy is the chief apostle. Her opinion of him would probably not be one of approval. But this has nothing to do with the matter. Her relations with her former medical adviser were strictly private, and not to be exploited by him at a later date and without her consent. Secrecy on the part of the physician is the understood privilege of every patient, no matter what his character or views.

Every member of our profession must be shocked at conduct like that here condemned, and has a right to raise his voice in solemn protest.

M. D.

METEOROLOGICAL RECORD

For the week ending December 16th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...10	30.44	32	42	21	73	71	72	N.W.	S.	6	7	F.	O.	
M..11	30.25	51	60	42	81	80	80	S.W.	S.	12	13	O.	O.	
T...12	29.91	60	66	53	68	83	76	S.	S.W.	18	14	O.	C.	.10
W..13	29.96	50	58	41	84	48	66	S.W.	W.	12	10	C.	C.	
T...14	30.31	38	42	33	57	58	58	W.	S.E.	11	8	C.	F.	
F...15	30.00	41	55	27	91	57	74	S.	W.	6	13	R.	C.	.88
S...16	30.60	26	33	19	71	46	58	N.W.	N.	12	7	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfal. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, December 16, 1899.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,550,053	1222	289	8.28	25.01	.72	.81	3.60
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,266,832	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	539,416	—	—	—	—	—	—	—
Baltimore	506,389	181	45	13.20	11.55	3.85	1.65	7.70
Cincinnati	405,000	100	—	8.00	5.00	4.01	3.00	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	305,000	87	12	17.25	13.80	—	10.35	4.60
Washington	277,000	114	28	14.08	12.32	—	1.40	3.52
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	71	24	12.69	15.51	1.41	2.82	4.23
Nashville	87,754	29	9	3.45	17.25	3.45	—	—
Charleston	65,165	29	9	17.25	20.70	6.90	3.45	—
Worcester	111,732	28	9	7.14	7.14	—	—	7.14
Fall River	103,142	30	12	10.00	10.00	6.66	—	—
Cambridge	92,520	26	10	7.70	19.25	—	—	7.70
Lowell	90,114	33	4	9.09	18.18	—	—	6.06
New Bedford	70,511	18	6	16.66	16.66	5.55	5.55	5.55
Lynn	68,218	22	6	24.90	4.15	—	4.15	12.45
Somerville	64,394	16	4	25.00	18.75	—	—	12.50
Lawrence	59,072	16	10	18.75	12.50	—	—	18.75
Springfield	58,266	21	4	28.56	9.52	9.52	9.52	4.76
Holyoke	44,510	11	4	9.09	9.09	—	—	9.09
Brockton	38,759	9	3	—	—	—	—	—
Salem	37,723	18	7	—	11.11	—	—	—
Malden	36,421	5	3	40.00	—	—	20.00	—
Chelsea	34,235	14	4	7.14	—	—	—	7.14
Haverhill	32,651	10	1	10.00	20.00	—	—	10.00
Gloucester	31,426	8	3	—	—	—	—	—
Fitchburg	30,523	8	3	—	25.00	—	—	—
Newton	30,461	9	—	11.11	11.11	—	—	—
Taunton	28,527	8	3	25.00	12.50	12.50	—	—
Everett	28,102	—	—	—	—	—	—	—
Quincy	24,578	8	—	—	12.50	—	—	—
Pittsfield	23,421	—	—	—	—	—	—	—
Waltham	22,791	9	—	11.11	22.22	—	—	11.11
North Adams	21,583	4	4	—	—	—	—	—
Chicopee	18,316	2	1	—	—	—	—	—
Medford	17,190	14	4	28.56	21.42	7.14	7.14	14.28
Newburyport	15,036	4	—	—	25.00	—	—	—
Melrose	14,721	2	—	—	—	—	—	—

Deaths reported 2,195; under five years of age 602; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 217, acute lung diseases 406, consumption 262, diphtheria and croup 89, typhoid fever 38, diarrheal diseases 30, measles 17, whooping-cough 15, scarlet fever 13, cerebro-spinal meningitis 11, erysipelas 4.

From measles New York 13, Washington, 2, Pittsburg and Springfield 1 each. From whooping-cough New York 7, Washington, Providence and Charleston 2 each, Pittsburg and Lynn 1 each. From scarlet fever New York 11, Cincinnati, and Washington 1 each. From cerebro-spinal meningitis New York 4, Somerville 2, Washington, Lowell, Lynn, Malden and Newton 1 each. From erysipelas New York, Washington, Providence and Taunton 1 each.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 23, 1899.

W. M. Wheeler, passed assistant surgeon, detached from duty at the Naval Hospital, New York, and ordered to the "Vermont."

H. A. Dunn, assistant surgeon, detached from Port Royal Naval Station on reporting of relief, and ordered home and to wait orders.

M. S. Elliott, assistant surgeon, detached from the "Vermont," on reporting of relief, and ordered to duty at the Port Royal Naval Station.

E. Davis, assistant surgeon, ordered to duty at the Naval Hospital, New York.

W. L. Bell, assistant surgeon, detached from the "Independence," December 31st, and ordered to the Island of Guam on the "Scindia."

H. T. Percy, surgeon, ordered to the Norfolk Navy Yard, January 4th.

H. E. Ames, surgeon, detached from the Norfolk Navy Yard, on reporting of relief, and directed to proceed home and to be ready for orders to sea service.

CHANGES BY CABLE FROM THE ASIATIC STATION.

R. C. Persons, medical inspector, detached from the "Baltimore" and ordered to the "Brooklyn."

G. E. H. Harman, medical inspector, detached from the "Brooklyn" and ordered to the "Baltimore."

O. D. Norton, surgeon, detached from the "Solace" and ordered to the "Monadnock."

C. H. T. Lowndes, passed assistant surgeon, detached from the "Princeton" and ordered home.

J. Stoughton, passed assistant surgeon, detached from the 'Monadnock" and ordered to the "Bennington" *via* the "Solace."

C. D. Langhorne, assistant surgeon, detached from the "Monterey" and ordered to the "Princeton."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DECEMBER 21, 1899.

Wasdin, Eugene, surgeon. Granted leave of absence for one month and fifteen days, to take effect on or about January 15, 1900. December 20, 1899.

White, J. H., surgeon. Detailed under the provisions of the Act of Congress, approved March 2, 1899, as a member of a commission to investigate the origin and prevalence of leprosy in the United States. December 15, 1899.

Vaughan, G. T., passed assistant surgeon. Detailed under the provisions of the Act of Congress, approved March 2, 1899, as a member of a commission to investigate the origin and prevalence of leprosy in the United States. December 15, 1899.

Stoner, J. B., passed assistant surgeon. Granted leave of absence for seven days from December 23d. December 16, 1899.

Rosenau, M. J., passed assistant surgeon. Detailed under the provisions of the Act of Congress, approved March 2, 1899, as a member of a commission to investigate the origin and prevalence of leprosy in the United States. December 15, 1899.

Trotter, F. E., assistant surgeon. To proceed to Tortugas Quarantine and report to medical officer in command for temporary duty. December 16, 1899.

Keyes, J. M., acting assistant surgeon. Granted leave of absence for thirty days from December 16th. December 15, 1899.

Tuttle, Jay, acting assistant surgeon. Granted leave of absence for thirty days, to take effect on or about January 2, 1900. December 20, 1899.

Comfort, N. C., hospital steward. Relieved from duty on steamer "Wapiti," and directed to proceed to Louisville, Ky., and report to medical officer in command for duty. December 19, 1899.

SOCIETY NOTICE.

Suffolk District Medical Society, Surgical Section. — The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, January 3, 1900, at 8.15 o'clock.

Papers: "The Practical Value of a Blood Count in Surgical Cases," by Dr. J. C. Hubbard.

Dr. H. A. Lothrop will report "A Case of Gunshot Wound of the Abdomen, with Multiple Wounds of the Intestine."

F. G. Balch, M.D., *Secretary*, 279 Clarendon St.

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